Factors Associated with Mental Health Illness among Construction Workers in Nakuru East Sub-County, Nakuru County, Kenya

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Abstract

Background: According to the World Health Organisation (WHO), mental health is a state of well-being enabling individuals to cope with daily life and contribute to society. In Nakuru Town East Sub-County, construction workers face unique mental health challenges due to short deadlines, long hours, financial stress, and stigma. This study explored the factors influencing their mental health.

Methodology: A cross-sectional study was conducted with 275 participants to determine the factors impacting the mental health of workers in construction sites. Data was collected using questionnaires and IBM SPSS Statistics version 28.0.1.0 was used for analysis.

Results: This study examined factors influencing mental health among construction workers in Nakuru East Sub-County. Findings revealed that 60.4% lacked safety training, and trained workers were 0.29 times less likely to report mental health issues (95% CI: 0.11–0.72). Awareness of mental health conditions was moderate (41.7%), with knowledgeable individuals being 0.64 times less likely to experience mental health problems (95% CI: 0.52–0.88). Stigma was prevalent, with 34.2% of participants holding negative views about mental health. Workers who experienced stigma, such as ridicule or discrimination, were 2.21 times more likely to face mental health issues (95% CI: 1.85–3.24). Only 32.9% were aware of mental health resources, which was associated with reduced risk (OR=0.29; 95% CI: 0.07–0.87). Additionally, 52.9% reported inadequate workplace support, which doubled the likelihood of mental health challenges (OR=2.08; 95% CI: 1.23–3.55). Short deadlines were reported by 68.8%, 67.5% lacked sufficient rest, 50.4% experienced job stress, and 29.2% were dissatisfied with their jobs.

Conclusion: The safety training and awareness of mental health conditions act as protective factors against mental health issues in the construction industry in Nakuru East Sub-County. However, the likelihood of mental health issues is increased by the existence of stigma around mental health, a lack of safety training and knowledge about the resources that are accessible.

Recommendation: Implementation of safety training, stigma-reduction campaigns, anti-stigma policies, anonymous assessments, and improved access to care through mobile clinics and workplace support systems should be enhanced. Structured workplace support systems and employee assistance programs will provide ongoing support. Further research will be necessary to assess the long-term impact and inform future policy development.

Keywords*: Mental Health Illness, Depression and Anxiety in Construction workers, Workplace Mental Health*

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Introduction

The World Health Organisation (WHO) defines mental health as a state of total well-being that allows individuals to interact, work efficiently, manage challenges, and reach their potential. It includes social, psychological, and

emotional well-being, impacting thoughts, feelings, and behaviours, and is essential for thriving in all aspects of life, not merely the absence of mental illness (1). Construction workers globally face significant mental health challenges. A 2020 survey by the Centre for Construction Research and Training revealed that approximately 6% of construction workers suffer from depression, while over 14% experience anxiety, highlighting the alarming prevalence of mental health issues in this industry (2). A study conducted in Nepal found that 17.1% of construction workers reported symptoms of depression, 19.2% reported symptoms of anxiety, and 16.4% reported symptoms of stress, indicating a significant mental health burden within the industry (3). Similarly, a study conducted in Ethiopia revealed that 79.8% of construction workers felt worried, and 59.3% expressed stress related to their jobs (4).

Mental health problems among construction workers are very common in Kenya. According to research from Kibera, the mean stress levels of construction workers vary by gender, with female workers reporting higher mean stress levels of 55.2, and male workers showing mean stress levels of 53.96 (5). Mental health problems are a major global risk factor for disability and suicide, and they have a significant effect on the construction industry. In Australia and the United Kingdom, suicide rates among construction workers are 2 and 3.7 times higher, respectively, than the national average (6). Research has shown that construction workers are not well-informed about the mental health support resources available to them (7). This issue is compounded by a lack of knowledge about accessible mental health care resources. For instance, one study examining obstacles to asking for help found that employees reported difficulty recognising when someone was in trouble and needed assistance (8).

In developing nations, mental health issues in the construction sector are worsened by a lack of information and training. Workers are often unaware of available mental health services and coping strategies, contributing to stigma and delays in seeking treatment. Job dissatisfaction is a significant contributor to mental health issues among construction workers. Workers who report lower job satisfaction are more likely to experience stress, anxiety, and depression (9). High job demands, coupled with insufficient time to complete tasks, also lead to increased stress and anxiety, which negatively impact mental health (10). Moreover, limited control over work schedules has been identified as a critical factor contributing to work-family conflict and poor mental health among construction workers. Moreover, workers with less autonomy over their tasks are particularly vulnerable (11).

The need for targeted interventions to raise mental health awareness, reduce stigma, and promote help-seeking behaviour among construction workers is clear. While mental health issues in the construction industry are recognised, the specific factors causing these problems locally are not well understood. This study aimed to fill that gap by exploring the stressors faced by workers in Nakuru Town East Sub-County, guiding evidence-based interventions to improve their mental health.

Methodology

Study design

A descriptive cross-sectional design was used with the aim of collecting primary data through questionnaires that addressed the level of knowledge, safety training, familiarity with mental health conditions, awareness of mental health resources, stigmatisation and workplace support.

Sample size

A sample of 275 construction workers was selected for the study, determined using the Taro Yamane formula for cross-sectional studies. This formula, chosen for its simplicity, efficiency, and suitability for finite populations, was applied to an estimated target population of 880

construction workers in Nakuru Town East Sub-County:

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{880}{1 + 880(0.05)^2}$$

$$n = 275$$

Sampling technique

Simple random sampling was the primary technique used in this study. One sub-county was randomly selected from the 12 in the county to ensure equal representation and to minimise selection bias. All wards within the selected sub-county were included to enhance coverage and generalisability. Construction sites within these wards were randomly selected from an official list obtained from the county planning office. Finally, within the selected sites, 55 participants were randomly selected from each ward, ensuring balanced representation and reducing sampling bias.

Inclusion and exclusion criteria

Participants included in this study were construction workers actively engaged in construction activities within Nakuru Town East Sub-County. Workers were excluded from the study if they were under the influence of alcohol or drugs during the data collection period or if they declined to provide informed consent.

Data collection instruments

The instruments used were adapted from previous research and modified to fit the local context. The primary instrument for data collection was a questionnaire, administered by the researcher. The purpose of the questionnaire was to gather data on construction workers' substance use habits, psychosocial work environments, and mental health concerns.

Reliability and Validity

A pilot study involving 30 volunteers from various construction sites was conducted to assess the reliability and validity of the data collection tools. Feedback from the pilot participants was used to enhance the questionnaire's clarity, relevance, and overall comprehension. Reliability of the instrument was evaluated using Cronbach's alpha, with a threshold of 0.7 or higher considered acceptable. Content validity was ensured through a comprehensive literature review to identify relevant constructs and appropriate measurement items. Furthermore, the questionnaire was reviewed by experts in mental health and occupational health, who assessed the relevance, clarity, and appropriateness of the items. Their feedback, along with input from the pilot study, was used to refine and improve the final version of the tool.

Data analysis

Data were entered, coded, cleaned, and analysed using IBM SPSS Statistics version 28.0.1.0. Descriptive statistics summarised the data, with frequencies and percentages used for categorical variables. Chi-square and Fisher's exact tests analysed associations between variables, while multivariable logistic regression identified factors associated with mental health among construction workers.

Ethical considerations

This study was reviewed and approved by the Mount Kenya University Institutional Scientific and Ethics Review Committee (MKU/ISERC). The ethical approval was granted under approval number MKU/ISERC/2092; License Number NACOSTI/P/23/29300 granted by the National Commission for Science, Technology, and Innovation (NACOSTI) before data collection began. Each participant provided signed informed consent. To protect the privacy and confidentiality of the participants, data were anonymised.

Results

Although 275 participants were recruited (55 per ward), only 240 responses were included in the final analysis due to 35 incomplete questionnaires, yielding a response rate of 87.3%.

Socio-demographic distribution

The majority of construction workers in the study were male (87.9%), while females made up only 12.1% the workforce was predominantly young, with the largest age groups being 25-29 years (43.3%) and 30-34 years (26.3%). Smaller proportions of participants were below 25 years (15.4%) and above 35 years (15.0%).

Approximately 47.1% of participants were single, separated, or widowed, while 52.9% were married. The largest group (53.3%) had completed secondary education, followed by tertiary education (22.5%). Participants with primary level education were 8.8% and incomplete secondary education, 15.4%. Table 2.

Table 1:
Distribution of participant response by wards

Ward	Number of Responses	Percentage (%)
Biashara Ward	52	21.7%
Flamingo Ward	55	22.9%
Kivumbini Ward	41	17.1%
Menengai Ward	48	20.0%
Nakuru East Ward	44	18.3%
Total	240	100%

Table 2
Demographic characteristics stratified by mental health issues

Characteristic	Overall, N = 240[1]	*Mental health issues		chi-square	Chi^2 df	p-value[2]
		No, N = 94[1]	Yes, N = 146[1]			
Sex				0.2	1	0.900
Female	29 (12.1%)	11 (11.7%)	18 (12.3%)			
Male	211 (87.9%)	83 (88.3%)	128(87.7%)			
Age categories				21.2	3	<0.001
Below 25 years	37(15.4%)	24(29.3%)	13 (8.2%)			
25-29 years	104 (43.3%)	30 (63.8%)	74 (46.8%)			
30-34 years	63 (26.3%)	14 (17.1%)	49 (31.0%)			
Above 35 years	36 (15.0%)	14(17.1%)	22 (13.9%)			
Marital status				11.4	1	<0.001
Separated/single/widowed	113 (47.1%)	57 (60.6%)	56 (38.4%)			
Married	127 (52.9%)	37 (39.4%)	90 (61.6%)			
Education				10.3	3	0.016
Primary completed	21 (8.8%)	9 (9.6%)	12 (8.2%)			
Secondary completed	128 (53.3%)	58 (61.7%)	70 (47.9%)			
Secondary incomplete	37 (15.4%)	6 (6.4%)	31 (21.2%)			
Tertiary	54 (22.5%)	21 (22.3%)	33 (22.6%)			
Ward				50.1	4	<0.001
Biashara	52 (21.7%)	8 (8.5%)	44 (30.1%)			
Flamingo	55 (22.9%)	22 (23.4%)	33 (22.6%)			
Kivumbini	41 (17.1%)	21 (22.3%)	20 (13.7%)			
Menengai	48 (20.0%)	9 (9.6%)	39 (26.7%)			
Nakuru East	44 (18.3%)	34 (36.2%)	10 (6.8%)			

[1] n (%)
[2] Pearson's Chi-squared test; Fisher's exact test
*Mental health issues are characterised by stress, anxiety and depression

Workplace psychosocial factors and mental health

Most respondents (60.4%) had not received safety training, while 39% had undergone safety training. Those who had received training were 0.29 times less likely to experience mental health issues (CI 95%; 0.11, 0.72). Approximately 41.7% of participants reported some familiarity with mental health conditions, indicating moderate awareness. Those with knowledge of mental health conditions were 0.64 times less likely to experience mental health issues (CI 95%; 0.52, 0.88). Table 3.

In Table 3, 17.1% of participants disagreed or strongly disagreed with stigmatising attitudes towards mental health, while 34.2% agreed, and 9.6% strongly agreed. Participants who agreed with stigmatising attitudes were 2.21 times more likely to have mental health issues compared to those who did not experience stigma (CI 95%; 1.85, 3.24) (Table 4).

Only 32.9% of participants were aware of available mental health resources. Those who were aware were 0.29 times less likely to experience mental health issues (CI 95%; 0.07, 0.87), as shown in Table 4.

Regarding workplace support, 47.1% of participants reported adequate support, while 52.9% felt that workplace support was inadequate. Those who perceived inadequate support were 2.08 times more likely to deal with mental health issues (CI 95%; 1.23, 3.55) (Table 4).

A total of 68.8% of participants reported working under short deadlines. Workers operating under short schedules were 3.03 times more likely to experience mental health issues (95% CI: 0.97–10.2).

Table 3

Factors Associated with Mental Health Illness among Construction Workers

Characteristic	Overall, N = 240[1]	*Mental health issues		chi-square	Chi^2 df	p-value[2]
		No, N = 94[1]	Yes, N = 146[1]			
Received safety training				9.2	1	0.002
No	145(60.4%)	68 (72.3%)	77 (52.7%)			
Yes	95 (39.6%)	26 (27.7%)	69 (47.3%)			
Familiarity with mental health conditions	100 (41.7%)	48 (51.1%)	52 (35.6%)	5.6	1	0.018
Stigma perception				27.6	4	<0.001
Agree	82 (34.2%)	19 (20.2%)	63 (43.2%)			
Disagree	41 (17.1%)	24 (25.5%)	17 (11.6%)			
Neutral	15 (6.3%)	7 (7.4%)	8 (5.5%)			
Strongly agree	23 (9.6%)	3 (3.2%)	20 (13.7%)			
Strongly disagree	79 (32.9%)	41 (43.6%)	38 (26.0%)			
Resources awareness	79 (32.9%)	46 (48.9%)	33 (22.6%)	18.0	1	<0.001
Working under Short deadlines	165 (68.8%)	22 (23.4%)	72(76.6%)	16.1	1	0.001
Lack of sufficient rest	162 (67.5%)	87 (53.7%)	75 (46.3%)	44.2	1	0.001
Current work satisfaction				5.1	1	0.023
Agree	170 (70.8%)	33 (31.5%)	73(68.9%)			
Disagree	70 (29.2%)	61(45.5%)	73(54.5%)			
Job stress				12.5	1	0.001
No	119 (49.6%)	60 (50.4%)	59 (49.6%)			
Yes	121 (50.4%)	34 (28.1%)	87 (71.9%)			
Adequate workplace Support						
Inadequate	127 (52.9%)	60 (63.8%)	67 (45.9%)	13.5	1	0.001
Adequate	113(47.1%)	34(36.2%)	79 (54.1%)			

[1] n (%), df- degree of freedom

[2] Pearson's Chi-squared test; Fisher's exact test.

**Mental health issues are characterised by stress, anxiety and depression.*

About 67.5% of participants reported not having sufficient rest, with an odds ratio of 0.21, suggesting that those with adequate rest were significantly less likely to experience mental health problems (95% CI: 0.06–0.66).

The findings showed that 70.8% of participants were satisfied with their jobs, while 29.2% were dissatisfied. The odds ratio was 1.12 (95% CI: 0.42–3.07), indicating a higher likelihood of mental health issues among those dissatisfied with their jobs. Approximately half (50.4%) of participants reported experiencing job-related stress, while 49.6% did not. The odds ratio was 2.60 (95% CI: 1.52–4.44), showing an association between job stress and mental health problems.

Table 4

Factors associated with mental health problems among the participants

	Un-adjusted Model			Adjusted model		
	OR[1]	95% CI[1]	p-value	AOR[1]	95% CI[1]	p-value
Marital status						
Separated/single/widowed	1.00	—		1.00	—	
Married	2.48	1.46, 4.24	0.001	4.93	1.61, 16.2	0.006
Age	1.05	1.00, 1.09	0.037	1.05	0.97, 1.15	0.200
Safety training						
No	1.00	—		1.00	—	
Yes	0.25	0.14, 0.45	0.001	0.29	0.11, 0.72	0.010
Current work satisfaction						
Agree	1.00	—		1.00	—	
Disagree	1.47	0.82, 2.66	0.2	1.12	0.42, 3.07	0.800
Familiarity with mental health conditions						
No	1.00	—		1.00	—	
Yes	0.53	0.31, 0.90	0.018	0.64	0.52, 0.88	0.027
Resource awareness						
No	1.00	—		1.00	—	
Yes	0.30	0.17, 0.53	0.001	0.29	0.07, 0.87	0.003
Adequate workplace support						
Adequate	1.00			1.00		
Inadequate	2.01	1.20, 2.94	0.001	2.08	1.23, 3.55	0.001
Education						
Primary completed	1.00	—		1.00	—	
Secondary completed	0.91	0.35, 2.29	0.8	3.63	0.96, 14.6	0.060
Secondary incomplete	3.88	1.16, 13.9	0.031	10.6	1.99, 63.6	0.007
Tertiary	1.18	0.42, 3.28	0.8	11.0	2.12, 62.7	0.005
Working under short deadlines						
No	1.00	—		1.00	—	
Yes	1.34	0.77, 2.33	0.2	3.03	0.97, 10.2	0.042
Job stress						
No	1.00	—		1.00		
Yes	2.30	1.32, 4.46	0.001	2.60	1.52, 444	0.001
Sufficient rest at work						
No	1.00	—		1.00	—	
Yes	0.08	0.03, 0.18	0.001	0.21	0.06, 0.66	0.010
Stigmatisation in workplace						
No stigma	1.00	—		1.00	—	
Stigma	4.31	2.45, 7.82	0.001	2.21	1.85, 3.24	0.014

[1] OR = Odds Ratio, CI = Confidence Interval

Discussion

Safety training on mental health awareness

A significant portion of the participants (60.4%) had not undergone safety training, while only 39.6% had safety training. According to the findings from the present study, construction workers who had received training were 0.29 times less likely (CI 95%; 0.11, 0.72) to have mental health issues compared to those who did not receive such training. A study conducted in Ethiopia on the prevalence of mental issues resulting from lack of safety training reported that workers who did not receive safety training were 2.43 times more likely to have injuries leading to mental stress (12). This demonstrates how important safety training is in reducing mental health problems among construction workers, highlighting the necessity of providing adequate support and resources to address mental health issues in the workplace through comprehensive training programs that address both physical and mental health aspects.

Familiarity with mental health conditions

Participants (41.7%) reported a moderate level of awareness, saying that they were somewhat familiar with mental health issues. Workers who were familiar with mental health conditions are 0.64 times less likely to experience mental health problems than those who were not (OR= 0.64, CI 95%: 0.52-0.88). Previous literature supports that construction supervisors' anxiety symptoms are considerably decreased by personal resilience and coping mechanisms such as proactive problem-solving, positive reappraisal, and reaching out for social support (13).

Perceptions of mental health stigma

Participants' opinions differed regarding stigma surrounding mental health; 17.1% disagreed or strongly disagreed with stigmatising attitudes, whereas 34.2% and 9.6% agreed or strongly agreed with them, respectively. A possible knowledge gap about the support services that are available is indicated by the fact that only 32.9% of participants were aware of mental health resources. The likelihood of mental health issues was 2.21 times higher (CI 95%; 1.85, 3.24) for construction workers who experienced workplace stigma than for those who did not. According to a study on mental health stigma and wellness among commercial construction workers, psychological distress and stigma were highly correlated, with an odds ratio of 1.51 (14). This emphasises the negative effects of stigma on mental health and the necessity of programs aimed at lowering stigma and raising awareness of mental health issues in the construction sector.

Awareness of mental health resources

In terms of participants' knowledge of workplace assistance options, 32.9% were aware, whereas 69.1% were unaware. Workers who knew about mental health resources were 0.29 times less likely to have mental health issues (CI 95%; 0.07, 0.87). According to a related study on stress levels among Kibera construction workers, 67.3% disagreed and 32.7% agreed that they had access to the necessary resources (15). This suggests that there is a critical need to raise awareness of and increase access to workplace mental health resources. Reducing mental health problems among construction workers may be greatly aided by providing clear information and simple access to mental health support services.

Adequacy of work support. Regarding adequate workplace support within the construction sites, 47.1% of the participants agreed that there was adequate workplace support, 52.9 % reporting inadequate workplace support. Construction workers who had inadequate workplace support were 2.08 times more likely (95% CI: 1.23-3.55) to experience mental health problems than those who felt there was sufficient support. Similarly, a systematic review focusing on young construction workers

revealed that poor workplace support and a toxic work culture contributed to higher rates of mental health issues among workers (16).

About 68.8% of participants reported working under short deadlines, highlighting high work pressure as a common stressor and an increased risk of mental health issues among these workers (OR=3.03, CI 95%: 0.97–10.2). Similar findings linked short schedules to stress, fatigue, and reduced well-being (17). These results emphasise the need for realistic work deadlines, flexible work placements, and mental health support to protect workers' psychological health and improve productivity

Insufficient rest. The present study reports that 67.5% of participants did not get sufficient rest, pointing to poor work-life balance as a contributor to mental health issues. Workers with adequate rest were significantly less likely to experience mental health problems (OR=0.21, CI 95%: 0.06–0.66). Similar findings linked insufficient rest to insomnia, fatigue, and reduced cognitive function, highlighting the need for better work-rest schedules, shift rotations, compliance with labour laws, and education on sleep hygiene to support workers' mental well-being (18).

Job satisfaction. The study showed that 70.8% of participants were satisfied with their jobs, while 29.2% were not. Dissatisfied workers were more likely to experience mental health issues (OR=1.12, CI 95%:0.42–3.07). Similarly, a study on job satisfaction found that low job satisfaction significantly predicted depression among construction workers in Nepal (19). These findings highlight the importance of job satisfaction in supporting mental well-being. Improving compensation, work environment, career growth opportunities, and mental health support can enhance satisfaction and reduce mental health risks.

Job stress. Half of the participants (50.4%) reported experiencing job-related stress, while 49.6% did not. Stressed workers were significantly more likely to face mental health issues (OR=2.60, CI 95%: 1.52–4.44). Similar findings showed that more than half of all construction professionals experienced at least moderate distress. These results highlight job stress as a key contributor to poor mental health (20). To address this, construction firms should provide stress management programs, promote work-life balance, ensure fair workload distribution, and encourage open communication to support workers' well-being.

Marital status and mental health vulnerability

Married construction workers were significantly more vulnerable to mental health issues compared to their single, separated, or widowed counterparts (AOR = 4.93, 95% CI: 1.61–16.2). This increased vulnerability could be linked to financial burdens, family responsibilities, and job instability. Many workers had only secondary education (53.3%), limiting access to higher-paying jobs and exacerbating financial stress, especially among married workers. Additionally, 60.4% lacked safety training, increasing the likelihood of job-related accidents, which aligns with findings from Ethiopia showing that workers without safety training are 2.43 times more likely to sustain injuries leading to mental stress (10).

Study limitations

The use of self-reported questionnaires may have introduced recall or social desirability bias, especially on sensitive issues like mental health. Voluntary participation also posed a risk of selection bias, as workers with severe mental health issues might have opted out, potentially underestimating the prevalence. To minimise bias, standardised and validated tools were used. The study was limited to Nakuru East Sub-County, affecting generalizability to other regions. Workplace conditions and cultural attitudes may vary elsewhere. Additionally, the cross-sectional design limits the ability to infer causality. Future research should adopt

longitudinal approaches and broader geographic coverage to enhance validity and generalizability.

Conclusion

The study identified several factors influencing mental health among construction workers in Nakuru East Sub-County. Lack of safety training (60.4%) was linked to higher mental health risks, while awareness of mental health conditions (41.7%) and available resources (32.9%) were associated with lower risk. Stigmatising views were reported by 34.2% of workers, significantly increasing mental health challenges, and inadequate workplace support (52.9%) doubled the risk. Work-related factors also played a role: 68.8% faced short deadlines, 67.5% lacked sufficient rest, 50.4% experienced job stress, and 29.2% were dissatisfied with their jobs—all of which were associated with higher mental health risks.

Recommendations

To improve mental health among construction workers, it is essential to prioritise safety training and integrate mental health awareness into these sessions. Regular training programs should be implemented to reduce stigma and create a supportive environment. Employers should enhance workplace support by offering mental health resources like counselling and employee assistance programs.

Workload management strategies, including realistic deadlines, flexible work hours, and regular breaks, should be adopted to reduce job stress. Adequate rest must be ensured through structured work-rest schedules, shift rotations, and adherence to labour laws. Job satisfaction can be improved by offering fair compensation, career growth opportunities, and fostering a positive work environment. Lastly, increasing awareness of available mental health resources will help workers access the support they need.

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