Research Square

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Prevalence and factors associated with depression and anxiety among task sharing community mental health workers in Harare Zimbabwe

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Abstract

Background

While task sharing enhances access to care for communities, it places non-specialist service providers at the forefront of addressing complex mental health needs, exposing them to occupational stressors. Despite the global prominence of Friendship Bench, current evidence on the mental health of its workforce is limited. This paper presents findings from a cross-sectional survey on the prevalence and factors associated with depression and anxiety among Friendship Bench health workers in Zimbabwe.

Methods

We employed a cross-sectional survey design. We used a census approach to ensure complete enumeration of active Friendship Bench workers in Harare and obtain a definitive population-level baseline. Depression and anxiety outcomes were measured using the Patient Health Questionnaire-9 and the Generalised Anxiety Disorder-7, respectively. Negative binomial regression was employed to analyse the unadjusted and adjusted associations between predictor variables and depression and anxiety symptoms.

Results

Clinical prevalence of depression and anxiety was 2.9% each, with comorbidity at 0.9%. Mean depression and anxiety scores of 3.03 (SD = 3.192) and 2.47 (SD = 3.001) indicated a subclinical burden for both conditions. In the fully adjusted models, four variables were independently associated with both outcomes: younger age, pain and discomfort, worry/sadness and absenteeism.

Discussion

Friendship Bench health workers demonstrate a predominantly subclinical burden of depression and anxiety, with disproportionate vulnerability among youth counsellors and managerial personnel. Younger age, physical pain, worry and absenteeism are the primary independent predictors.

Conclusion

These findings provide an empirical foundation for targeted, age-stratified, physically integrated workplace mental health interventions for Friendship Bench.

Clinical Trial number:

Not applicable

BACKGROUND

Due to the shortage of mental health professionals in many parts of the world, tasks usually performed by specialists are sometimes reassigned to other cadres who are not necessarily expected to hold a higher degree or qualification but possess the required knowledge, expertise, and experience [1]. This process, known as task shifting or task sharing, involves reallocating specific tasks from specialists to non-specialists to make the best use of available personnel [2].

The Friendship Bench is one of the most extensively evaluated and replicated task-sharing mental health models globally [3]. Developed by Chibanda et al., the programme initially trained lay health workers, predominantly elderly women (grandmothers), to deliver problem-solving therapy for common mental disorders (CMDs) in a primary care setting [4]. The programme has since expanded to both urban and rural settings across all provinces in Zimbabwe, trains younger lay health workers and has established a youth programme called the Youth Friendship Bench (YouFB). To date, the programme has over 3000 health workers in all provinces of Zimbabwe and has been replicated in over 5 countries. Despite its prominence as a task-sharing programme, the mental health of Friendship Bench workers has received comparatively little empirical attention. While task sharing enhances access to care for communities, it places health workers at the forefront of addressing complex mental health needs, potentially exposing them to occupational stressors [5, 6].

Research shows that CMDs like depression and anxiety are prevalent among healthcare providers [6–8]. A systematic review of health workers in sub-Saharan Africa found wide-ranging prevalences of depression (2.1-75.75%), anxiety (4.8–96.5%), and post-traumatic stress disorder symptoms (11.7 to 78.3%) before and during the COVID era [6]. Critically, the review identified younger age, female gender, being unmarried and direct patient contact as the factors associated with morbidity. In Zimbabwe, Chingono et al. found a 12.1% prevalence of CMDs among health workers accessing occupational health services during COVID-19 [8]. Calderwood et al. further highlighted the high prevalence of chronic conditions and their multimorbidity among Zimbabwean health workers, underscoring the physical health burden that coexists with psychological morbidity in the workforce [7]. In the case of Friendship Bench, Verhey et al. previously reported rates of 11% and 6% for probable CMDs and post-traumatic stress disorder (PTSD), respectively [9]. Additionally, Wallén et al. provide qualitative insights into the emotional experiences of YouFB counsellors, highlighting the psychological burden associated with delivering therapy, including vicarious traumatization and role-related stressors. Together, these studies establish an evidence base for the need to examine the mental health of task-sharing health workers and set up interventions for them.

While previous research provides valuable evidence to inform mental health interventions targeting Friendship Bench workers, mental health trends have likely changed due to significant developments over the years, including socioeconomic shifts and organisational changes. Furthermore, samples used in earlier studies do not reflect the current composition of the Friendship Bench. Friendship Bench has grown from a research project to a non-profit organization with management structures, an expanded scope and a significant male population. Developing effective interventions requires current, comprehensive, programme-specific data to establish a baseline. In this paper, we present the first

population-level near-census estimate of depression and anxiety prevalence among Friendship Bench workers. These findings form part of a wider situational analysis on workplace mental health within Friendship Bench. The situational analysis is designed to inform the development of a workplace mental health framework for Friendship Bench personnel.

METHODS

Study Design and Setting

We employed a cross-sectional survey design. We used a census approach to ensure complete enumeration of all active Friendship Bench workers in Harare and obtain a definitive population-level baseline. Data were collected between November 2025 and February 2026 across Friendship Bench sites in the province. Harare was selected because it hosts the largest concentration of active Friendship Bench workers in Zimbabwe and represents the programme's primary urban implementation context.

Study Population and Eligibility

The target population comprised all Friendship Bench workers (N = 407) actively employed in Harare at the time of data collection. Three cadres were included: (i) community health workers (CHWs)- the programme’s primary lay health worker cadre responsible for delivering therapy at health facilities and in the community; (ii) YouFB counsellors- university graduates or students in training delivering an adaptation of the programme targeting adolescents and young people; and (iii) operational managers- non-counselling workers with administrative, managerial, supervisory, and/or coordination responsibilities. We also included general workers in the managers’ sample.

The inclusion criteria included: active employment at Friendship Bench in Harare province at the time of data collection and the provision of written consent. Workers who were absent from duty for the entire data collection period and those who declined to participate were excluded.

Data Collection Procedure

Data were collected using structured questionnaires hosted on KoboCollect, an electronic Open Data Kit (ODK) tool. Data collection was facilitated by a team of trained assistants with a background in social science, who were recruited specifically for this study. The research assistants underwent standardised training before data collection, covering data collection processes, informed consent, participant confidentiality, and referral protocols for participants screening positive for mental health conditions. Training was conducted over 5 days and included role-play exercises to ensure consistency in questionnaire administration.

Before conducting the assessments, the research assistant approached the participants and explained the study, its purpose, and the data collection process. After receiving participant consent, the research

assistants commenced the survey. The survey was done in the participants' preferred language (i.e. Shona or English). We utilised the mandatory response function in KOBO Collect to ensure data completeness.

All participants were informed of their screening results following questionnaire completion, and those who screened positive for depression and/or anxiety were referred for further assessment and care. All referrals were conducted with the participant's consent, and confidentiality was maintained throughout.

Outcome measures

Depression- Patient Health Questionnaire- 9 (PHQ-9)

Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9), a locally validated 9-item instrument, a 4-point Likert scale from 0 (not at all) to 3 nearly every day, yielding a score ranging from 0 to 27. Higher scores indicate greater severity of depressive symptoms. We used the ≥ 11-score threshold provided by Chibanda et al. as the optimal cut-off point for clinically significant depression [10]. The PHQ-9 has demonstrated strong psychometric properties, including high sensitivity and specificity for the Zimbabwean population [10].

Anxiety- Generalised Anxiety Disorder-7 (GAD-7)

Anxiety was assessed using the GAD-7 scale, another locally validated 7-item scale, a 4-point Likert scale from 0 (not at all) to 3 nearly every day, yielding a score ranging from 0 to 21. Higher scores indicate greater severity of anxiety symptoms. We used the ≥ 10-score threshold provided by Chibanda et al. as the optimal cut-off point for clinically significant depression [10]. The PHQ-9 has demonstrated strong psychometric properties, including high sensitivity and specificity for the Zimbabwean population [10].

Predictor Variables

Predictors were drawn from three domains:

Sociodemographic variables included age, gender, marital status, and education level.

Health-related variables included chronic condition status and the five domains of the EuroQoL EQ-5D 3L health-related quality of life instrument: mobility, self-care, usual activities, pain/discomfort and anxiety/depression (referred to in this paper as sad/worried). Each domain is scored at three levels: (i) no problems, (ii) some problems and (iii) severe/ extreme problems. The EQ-5D is a generic, widely validated health-related quality of life instrument used extensively in LMIC health research, including Zimbabwe [11] and was selected to capture the physical health burden of participants across multiple domains simultaneously.

Work/ Occupational Variables included position at work, duration/ years of service and days absent from work in the preceding 30 days.

Data Analysis

Data were compiled into a Microsoft Excel spreadsheet and analysed using the Statistical Package for the Social Sciences (SPSS) software version 31.0 and R software. Before regression modelling, the distributional properties of the data were systematically examined. Visual inspection of histograms, together with computation of means, variances and the proportion of zero scores, was used to assess zero inflation and overdispersion. Both outcomes were non-normally distributed, with substantial right skew and excess zeros, and thus we employed zero-inflated negative binomial (ZINB) regression.

Frequency and descriptive statistics were calculated for the sociodemographic, health and occupational characteristics of the sample. Prevalence was calculated for depressive and anxiety symptoms based on the cut-off score of 11 and 10 for the PHQ-9 and GAD-7, respectively. Two ZINB regression models were developed to analyse the unadjusted and adjusted associations between predictor variables and depression and anxiety symptoms. The results of the regression models were reported as incidence rate ratios (IRRs) with 95% confidence intervals (CI).

Ethical Considerations

Ethical approval for this study was granted by the Medical Research Council of Zimbabwe (MRCZ), a national ethics authority operating under the Ministry of Health and Child Care of Zimbabwe (Ref. MRCZ/A/3395). All procedures were conducted in accordance with the MRCZ Ethics Guidelines for Health Research Involving Participants in Zimbabwe (version 1.4, 2011) and the Declaration of Helsinki. The research team verbally explained the study's objectives and purpose to the participants, and participation was voluntary. Participants were assured that their health information would remain confidential and be shared only with the research team. Data were collected after they signed the consent forms. Participants who screened positive for severe depression and anxiety were offered the option of further care with either a clinical psychologist or a WHO mhGAP-trained nurse at the nearest primary care clinic.

RESULTS

Non-response bias

Our final sample was 343, resulting in an 84.3% response rate. To assess non-response bias, chi-square tests were conducted to compare demographic characteristics of the respondents with those of the target population. The results indicated no significant differences in terms of gender ($X^2 = 0.387$, $p > 0.534$) or position at work ($X^2 = 0.114$, $p = 0.944$), supporting the representativeness of the analytic sample [Table 1].

Table 1
Non-response risk bias table

Demographic Variable	Target (N)	Responses (n)	Difference n (%)	χ^2	Sig.
Participants	407	343	64		
Position at work				0.114	0.944
-Community health worker	318	269	49		
-Youth and adolescent counsellor	29	24	5		
-Manager	60	50	10		
Gender				0.387	0.534
-Male	44	39	5		
-Female	363	304	59		

Participant Characteristics

The socio-demographic, health and work characteristics of the final sample are shown in Table 2. Of the total 343 health workers surveyed, the majority were female (88.6%) and had a mean age of 40 years (SD = 16.05). More than two-thirds were employed as community health workers (n = 269, 78.4%), with managers and Youth Friendship Bench counsellors constituting the remainder. Secondary education was the most prevalent (56.6%), followed by tertiary (28%) and primary (15.5%). The majority were married 49.3% and the remainder were either single, widowed, or divorced. The three occupational groups differed across all socio-demographic characteristics- the community health workers were older, the least educated, and more likely to be widowed. The YouFB counsellors were predominantly young, single, and recently employed, while the managers were predominantly male, married or single, and had a tertiary education.

Table 2
Participant Characteristics

Variables	Total		Community health workers		Youth counsellors		Management staff	
	n	%	n	%	n	%	n	%
SOCIO-DEMOGRAPHICS								
Age (mean, SD)	40; 16.050							
18–30	50	14.6%	7	2.6%	23	95.8%	20	40%
31–40	63	18.4%	41	15.2%	1	4.2%	21	42%
41–50	67	19.5%	61	22.7%	0	0%	6	12%
50–60	69	20.1%	66	24.5%	0	0%	3	6%
61 and above	94	27.4%	94	34.9%	0	0%	0	0%
Gender								
Male	39	11.4%	12	4.5%	5	20.8%	22	44%
female	304	88.6%	257	95.5%	19	79.2%	28	56%
Marital status								
Single	78	22.7%	37	13.8%	21	87.5%	20	40%
Married	169	49.3%	139	51.7%	3	12.5%	27	54%
Separated/ divorced	19	5.5%	16	5.9%	0	0%	3	6%
Widowed	77	22.4%	77	28.6%	0	0%	0	0%
Education Level								
Primary	53	15.5%	53	19.7%	0		0	0%
Secondary	194	56.6%	191	71%	0		3	6%
Tertiary	96	28%	25	9.3%	24		47	94%
HEALTH CHARACTERISTICS								
Chronic Condition								
Yes	205	59.8%	195	72.5%	0	0%	10	20%
No	138	40.2%	74	27.5%	24	100%	40	80%
EQ5D DOMAINS								

Variables	Total		Community health workers		Youth counsellors		Management staff	
	n	%	n	%	n	%	n	%
Mobility								
No Problems	307	89.5%	238	88.5%	23	95.8%	46	92%
Some Problems	34	9.9%	29	10.8%	1	4.2%	4	8%
Severe Problems	2	0.6%	2	0.7%	0	0%	0	0%
Self-Care								
No Problems	342	99.7%	268	99.6%	24	100%	50	100%
Some Problems	1	0.3%	1	0.4%	0	0%	0	0%
Severe Problems	0	0%	0	0%	0	0%	0	0%
Usual Activities								
No Problems	333	97.1%	264	98.1%	22	91.7%	47	94%
Some Problems	9	2.6%	5	1.9%	2	8.3%	2	4%
Severe Problems	1	0.3%	0	0%	0	0%	1	2%
Pain Discomfort								
No Problems	227	66.2%	169	62.8%	22	91.7%	36	72%
Some Problems	113	32.9	97	36.1%	2	8.3%	14	28%
Severe Problems	3	0.9%	3	1.1%	0	0%	0	0%
Worry/ Sadness								
No Problems	289	84.3%	245	91.1%	16	66.7%	28	56%
Some Problems	51	14.9%	24	8.9%	7	29.2%	20	40%
Severe Problems	3	0.9%	0	0%	1	4.1%	2	4%
WORK CHARACTERISTICS								
Years of Service (mean; SD)	6; 4.11							
1 year and below	32	9.3%	14	5.2%	14	58.3%	4	8%
2–5 years	164	47.8%	132	49.1%	3	12.5%	29	58%
6–10 years	98	28.6%	74	27.5%	7	29.2%	17	34%

Variables	Total		Community health workers		Youth counsellors		Management staff	
	n	%	n	%	n	%	n	%
> 10	49	14.3%	49	18.2%	0	0%	0	0%
Absent from work in the last 30 days (mean; SD)	3; 5.22							
No	154	44.9%	115	42.8%	10	41.7%	29	58%
Yes	189	55.1%	154	57.2%	14	58.3%	21	42%

Regarding health characteristics, 59,8% of the participants reported at least one chronic condition, predominantly among the CHWs (72.5%). Pain and discomfort were the most prevalent EQ-5D domains, affecting 33.8% of the participants and disproportionately concentrated among CHWs (85.8% of those reporting pain). More than half of the participants (55.1%) reported at least one day absent from work in the preceding 30 days (mean = 3days, SD = 5.22). It should be noted that several EQ-5D response categories had low or zero frequency counts, particularly severe problem categories. As a result, the incidence rate ratios (IRR) for these categories were based on very sparse data, producing wide confidence intervals. We retained these categories for completeness but should be interpreted with considerable caution.

Prevalence of depression, anxiety and comorbidity.

The overall prevalence for both clinically significant depression (PHQ-9 ≥ 11) and anxiety (GAD-7 ≥ 10) was 2.9% (n = 10). Only 3 participants screened positive for comorbid depression and anxiety Table 3. YouFB counsellors had the highest mean score for depression (PHQ-9: mean = 4.75, SD = 4.19), while managers had the highest mean anxiety score (GAD-7: mean = 4.40, SD = 4.29). Proportional clinical cases were highest among YouFB counsellors for depression and managers for anxiety. None of the participants took the referral option.

Table 3
Depression and Anxiety Outcomes

Measures	Total n(%)	Community health workers n(%)	Youth Counsellors n(%)	Operations Managers n (%)
Patient Health Questionnaire Scale (PHQ-9) (mean; SD)	3.03, 3.192	2.67, 2.879	4.75, 4.194	4.10, 3.770
Yes	10 (2.9%)	5 (1.9%)	2 (8.3%)	3 (6.0%)
No	333 (97.1%)	264 (98.1%)	22 (91.7%)	47
Generalised Anxiety Disorder Scale (GAD-7) (mean; SD)	2.47, 3.001	2.11, 2.580	3.29, 3.085	4.40, 4.290
Yes	10 (2.9%)	4 (1.5%)	1 (4.2%)	5 (10%)
No	333 (97.1%)	265 (98.5%)	23 (95.8)	45 (90%)
Both (comorbid)				
Yes	3 (0.9%)	1 (0.4%)	1 (4.2)	1 (2%)
No	340 (99.1%)	268 (99.6%)	23 (95.8)	49 (98%)

Associations between participant characteristics and depression and anxiety

The unadjusted and adjusted associations between participant characteristics and depressive symptoms are shown in Table 4. The adjusted model identified four variables that were significantly associated with depression scores. Severe pain/ discomfort was the strongest predictor, with nearly three-fold higher depression scores (AIRR = 2.76, 95% CI 1.07–7.10, p = 0.04). Moderate worry/ sadness was also associated with higher scores (AIRR = 1.36, 95% CI 1.01–1.82, p = 0.04), as was the number of days absent, with each additional day associated with a 2% increase in potential depression scores (AIRR = 1.02, 95% CI 1.00–1.04, p = 0.03). On the other hand, Age was inversely associated (AIRR = 0.98, 95% CI 0.971–1.00, p = 0.02), with each additional year of age associated with an approximately 2% reduction in depression scores, suggesting a modest protective effect of age.

Table 4
Unadjusted and adjusted associations between participant characteristics and depression

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Age (mean, SD)	38.5, 16.7	49.9, 15.9	0.99 (.98-.99)*	0.98 (0.97–1.00)*
Gender				
Male	1 (10)	38 (11.4)	0.93 (0.64–1.34)	0.88 (0.62–1.26)
female	9 (90)	295 (88.6)	1	1
Marital status				
Single	2 (20)	76 (22.8)	0.74 (0.54–1.01)	0.94 (0.67–1.31)
Married	5 (50)	164 (49.2)	1	1
Separated/ divorced	2 (20)	17 (5.1)	1.42 (0.84–2.39)	1.15 (0.72–1.83)
Widowed	1 (10)	76 (22.8)	1.17 (0.89–1.54)	1.06 (0.80–1.40)
Education Level				
Primary	1 (10)	52 (15.6)	0.78 (0.53–1.13)	0.79 (0.55–1.13)
Secondary	4 (40)	190 (57.1)	1	1
Tertiary	5 (50)	91 (27.3)	1.44 (1.12–1.84)*	1.10 (0.75–1.63)
Chronic Condition				
Yes	4 (40)	201 (60.4)	1	1
No	6 (60)	132 (39.6)	1.25 (0.98–1.56)	1.08 (0.83–1.42)
EQ5D DOMAINS				
Mobility				
No Problems	8 (80)	299 (89.8)	1	1

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Some Problems	2 (20)	32 (9.6)	1.27 (0.92–1.76)	1.21 (0.86–1.69)
Severe Problems	0 (0)	2 (0.6)	0.30 (0.05–1.65)	0.19 (0.03–1.05)
Self-Care				
No Problems	10 (100)	332 (99.7)	1	1
Some Problems	0 (0)	1 (0.3)	2.66 (0.53–13.43)	1.86 (0.48–7.18)
Severe Problems	0 (0)	0 (0)	-	
Usual Activities				
No Problems	5 (50)	328 (98.5)	1	1
Some Problems	4 (40)	5 (1.5)	2.38 (1.42–3.99)*	1.67 (0.95–2.95)
Severe Problems	1 (10)	0 (0)	4.83 (1.17–19.98)*	2.04 (0.53–7.78)
Pain Discomfort				
No Problems	6 (60)	221 (66.4)	1	1
Some Problems	3 (30)	110 (33)	1.09 (0.85–1.38)	1.22 (0.97–1.55)
Severe Problems	1 (10)	2 (0.6)	1.93 (0.73–5.11)*	2.76 (1.07–7.10)*
Worry/ Sadness				
No Problems	6 (60)	283 (85)	1	1
Some Problems	4 (40)	47 (14.1)	1.87 (1.44–2.44)*	1.36 (1.01–1.82)*
Severe Problems	0 (0)	3 (0.9)	1.45 (0.61–3.91)	1.61 (0.67–3.87)
Position at work				
Community Health Worker	5 (50)	264 (79.3)	1	1

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Youth Counsellor	2 (50)	22 (6.6)	1.53 (1.05–2.22)*	0.81 (0.451–1.45)
Management	3 (30)	47 (14.1)	1.53 (1.09–2.15)*	0.89 (0.55–1.45)
Years of Service (mean; SD)	4.8; 3.4	5.8; 4.1	0.97 (0.94–1.00)*	1.03 (0.99–1.07)
Days Absent from work in the last 30 days (mean; SD)	5.8; 6.7	2.8; 5.2	1.01 (1.01–1.05)*	1.02 (1.00–1.04)*

*Statistically significant variables include: age, days absent, moderate worry/ sadness and severe pain/ discomfort.

Table 5 shows the unadjusted and adjusted associations between participant characteristics and anxiety symptom scores. The adjusted model shows that the four predictors significantly associated with depression were also significant for anxiety. Severe worry/ sadness was the strongest predictor, with participants in this category having anxiety scores that are almost four times higher than those reporting no worry (AIRR = 3.80, 95% CI 1.66–8.72, p = 0.002). Moderate pain and discomfort (AIRR = 1.43, 1.12–1.83, p = 0.004) and days absent (AIRR = 1.03, 95% CI 1.01–1.05, p = 0.01) were also associated with high anxiety scores. Age was inversely associated, with each additional year corresponding to a 2% decrease in expected scores (AIRR = 0.98, 95% CI 0.97–1.00, p = 0.02).

Table 5
Unadjusted and adjusted associations between participant characteristics and anxiety

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Age (mean; SD)	34.7; 8.6	50; 16	1.00 (0.97–1.00)*	0.98 (0.97–1.00)*
Gender				
Male	1 (10)	38 (11.4)	1.02 (0.63–1.67)	0.77 (0.49–1.13)
female	9 (90)	295 (88.6)	1	1
Marital status				
Single	3 (30)	75 (22.5)	0.53 (0.35–0.79)*	1.00 (0.69–1.43)
Married	6 (60)	163 (48.9)	1	1
Separated/ divorced	1 (10)	18 (5.4)	.90 (0.48–1.70)	0.80 (0.49–1.31)
Widowed	0 (0)	77 (23.1)	1.09 (0.78–1.53)	1.02 (0.76–1.38)
Education Level				
Primary	0 (0)	53 (15.9)	0.61 (0.37–0.98)*	0.79 (0.52–1.19)
Secondary	2 (20)	192 (57.7)	1	1
Tertiary	8 (80)	88 (26.4)	1.71 (1.28–2.29)*	1.24 (0.84–1.84)
Chronic Condition				
Yes	4 (40)	132 (39.6)	1	1
No	6 (60)	201 (60.4)	1.11 (.0.83–1.49)	0.921 (0.70–1.21)
EQ5D DOMAINS				
Mobility				
No Problems	8 (80)	299 (89.9)	1	1

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Some Problems	2 (20)	32 (9.6)	1.32 (0.85–2.04)	1.24 (0.86–1.78)
Severe Problems	0 (0)	2 (0.6)	0.39 (0.06–2.58)	0.32 (0.05–1.92)
Self-Care				
No Problems	10 (100)	332 (99.7)	1	1
Some Problems	0 (0)	1 (0.3)	2.71 (0.36–20.62)	1.76 (0.42–7.47)
Severe Problems	0 (0)	0 (0)	-	
Usual Activities				
No Problems	9 (90)	324 (97.3)	1	1
Some Problems	0 (0)	9 (2.7)	1.68 (0.86–3.30)	1.2 (0.64–2.24)
Severe Problems	1 (10)	0 (0)	5.30 (0.89–32.03)	1.28 (0.32–5.20)
Pain Discomfort				
No Problems	4 (40)	223 (67)	1	1
Some Problems	6 (60)	107 (32.1)	1.39(1.04–1.86)*	1.43 (1.12–1.83)*
Severe Problems	0 (0)	3 (0.9)	0.99 (0.27–3.58)	1.6 (0.50–5.11)
Worry/ Sadness				
No Problems	4 (40)	285 (85.6)	1	1
Some Problems	4 (40)	47 (14.1)	2.01 (1.51–2.69)*	1.31 (0.97–1.77)
Severe Problems	2 (20)	1 (0.3)	4.49 (1.81–11.15)*	3.80 (1.66–8.72)*
Position at work				
Community Health Worker	4 (40)	265 (79.6)	1	1

Variable	Yes n(%)	No n(%)	Unadjusted IRR (95% CI)	Adjusted IRR (95% CI)
Youth Counsellor	1 (10)	23 (6.9)	1.42 (0.91–2.22)	0.68 (0.36–1.27)
Management	5 (50)	45 (13.5)	2.07 (1.45–2.95)*	1.09 (0.67–1.79)
Years of Service (mean; SD)	2.6; 1.1	5.8; 4.1	0.94 (0.91–0.97)*	1.00 (0.96–1.04)
Absent from work in the last 30 days (mean; SD)	4.4; 6.4	2.7, 5.2	1.03 (1.01–1.06)*	1.03 (1.01–1.05)*

*Statistically significant variables included: age, days absent, moderate pain/ discomfort and severe worry/ sadness.

It should be noted that two variables demonstrated statistically significant but modest associations across both adjusted models. Older age was inversely associated with both CMDs, with each additional year corresponding to a 2% reduction in the expected scores. Similarly, each additional day absent was associated with a 2% increase in depression and a 3% increase in anxiety scores. Despite their small magnitude, the associations for both age and absenteeism consistently excluded the null value of 1.00 across both models. Furthermore, the effect of absenteeism is cumulative. Personnel who are absent for 10 days would be expected to have approximately 20–30% higher depression and anxiety scores compared to those without absences. These findings suggest that while the two variables do not exert a large per unit effect on mental health scores, both represent meaningful and consistent correlates of psychological distress in this population.

DISCUSSION

This study examined the determinants of depression and anxiety among Friendship Bench healthcare workers using ZINB regression to accommodate the zero-inflated count distribution of the sample. Four independent predictors were identified across both outcomes after full adjustment: age, pain or discomfort, worry/sadness and absenteeism. The systematic confounding assessment represented several variables previously associated with mental health outcomes in this workforce- including occupational role, education level, marital status and years of service- did not represent independent predictors once the broader covariate context was accounted for. The findings provide an empirical foundation for developing workplace mental health interventions for Friendship Bench workers.

The clinical prevalence of depression (2.9%) and anxiety (2.95) in our sample is situated at the lower end of the range for health workers in sub-Saharan Africa [6] and notably lower than the rates reported in comparable studies of health workers in Zimbabwe [7–9]. Chingono et al. found that over 12.1% of health workers who accessed occupational health services in Harare during the COVID-19 pandemic

screened positive for CMDs using the SSQ-14. However, the study was conducted during a period of exceptional occupational distress and enrolled workers actively seeking occupational health services, introducing selection bias towards higher symptom burden. Pre-COVID, Verhey et al. documented elevated rates of CMDs among Friendship Bench grandmothers, suggesting that the lower clinical prevalence in our sample partly reflects temporal variation, differences in outcomes, and the inclusion of managerial staff alongside direct service delivery workers. Second, social desirability bias and mental health stigma may have led to under-reporting of symptoms among some participants.

Despite the low clinical prevalence, the substantial subclinical burden- reflected in the mean PHQ-9 and GAD-7 scores of 3.03 and 2.47, respectively, and the disproportionately higher mean subclinical burden scores among YouFB and management- is clinically meaningful. Subclinical psychological distress is associated with functional impairment, reduced work performance, and, if left unaddressed, elevated risk of progression to clinical disorder [12]. The pattern observed in our data- low clinical caseness alongside significant subclinical elevation, particularly in younger workers- is consistent with Wallén et al., who identified psychological burden and role-related stressors as prominent experiences among YouFB counsellors [13]. Together, these data suggest that subclinical distress rather than frank disorder is the dominant mental health phenotype in this workforce and that prevention-oriented interventions targeting a broader spectrum of distress are warranted.

The EQ-5D pain and discomfort domain was significantly associated with high depression and anxiety scores. Our findings are consistent with existing literature on the relationship between physical pain and psychological distress[5, 14–16]. The physical demands of CHW work, including extensive community outreach and service delivery in varying environmental conditions, place these cadres at a particular risk of occupational pain conditions. Additionally, pain and psychological distress mutually reinforce each other, creating a self-perpetuating cycle that is hard to break [17]. In work settings, unmanaged physical symptoms may reduce a worker's capacity to be productive, erode their sense of self-efficacy, and deplete psychological resources needed to buffer against low mood. Regarding intervention, our findings underscore the clinical and pragmatic importance of incorporating physical health assessments into occupational health frameworks and addressing physical and mental health in an integrated rather than siloed manner.

The EQ-5D feeling sad/ worried domain showed strong predictive validity for both depression and anxiety scores. Moderate worry was independently associated with depression, while severe worry was a strong predictor of anxiety after full adjustment. Similar associations have been found in studies involving different populations [14, 18–20]. While conceptual overlap between the EQ5D dimension, PHQ-9 and GAD- 7 outcomes is to be expected, our results carry practical significance: personnel who have not reached clinical depression or anxiety thresholds are nevertheless showing elevated symptoms. This points to the potential of early, low-intensity interventions targeting subclinical distress before it escalates. More so, from a practical standpoint, our findings suggest that the EQ-5D (which is already widely used in health economics research in LMICs) may serve a dual role as a preliminary mental health screening tool in resource-constrained occupational health contexts, potentially reducing

the burden of administering multiple instruments. Workers identified as experiencing moderate to severe worry or sadness through routine EQ-5D assessment should be prioritised for further evaluation and psychological support.

Older age was inversely associated with both depression and anxiety scores, suggesting a modest protective effect. However, the effect size was small; thus, its clinical significance should not be overstated. The inverse association between age and both depression and anxiety is consistent with theoretical frameworks on psychological resilience across the lifespan and accumulation of coping resources with age [21, 22]. The protective effect of age among CHWs (i.e. the oldest cadre) may reflect community embeddedness, established coping resources and the social capital that accrues through long-term programme engagement (Maes et al., 2014). These findings suggest that the mental health of younger task-sharing workers at Friendship Bench warrants targeted attention. More importantly, these findings should not be interpreted as indicating that older workers are at low risk of experiencing CMDs, and therefore not in need of support. Rather, interventions should remain inclusive, with particular attention to younger workers who may be navigating early career pressures and have less developed coping skills.

Each additional day absent from work was associated with a 2% and 3% increase in expected depression and anxiety scores, respectively. Although modest, this effect accumulates meaningfully over extended periods of absence. The consistent, independent association between absenteeism and both depression and anxiety, with minimal confounding, aligns with existing literature on the bidirectional relationship between psychological distress and work absence. Depression and anxiety contribute to absenteeism, and absenteeism, in turn, deepens psychological symptoms through social isolation, disrupted routines, and a reduced sense of purpose [23]. This has strong implications for return-to-work planning as a component of workplace mental health intervention. Personnel can be supported through a structured, gradual return-to-work process, alongside psychological support from a trained professional. Additionally, implementing absenteeism monitoring with protocols for mental health-triggered outreach when patterns of frequent absence are identified represents a low-cost, actionable intervention.

Implications for wider workplace intervention programme

As the situational analysis phase of a wider study aimed at developing workplace mental health interventions for Friendship Bench workers, the relatively low clinical prevalence for both outcomes should not be misinterpreted as evidence that mental health intervention is unnecessary for this workforce. The present findings generate several specific priorities for intervention design. The subclinical burden recorded among YouFB counsellors and managers indicates a workforce operating under significant psychological strain. Therefore, primary prevention is not only a more humane approach but also substantially more cost-effective than reactive clinical treatment. Additionally, the consistent findings across both outcomes support the development of integrated CMD interventions rather than disorder-specific approaches. Lastly, the consistent independent associations identified

across both outcomes (i.e., age, pain, worry and absenteeism also support the development of interventions targeting these modifiable factors rather than focusing solely on clinical cases.

Study strengths and limitations

This study has several notable strengths. The census design ensured complete enumeration of all active Friendship Bench workers in Harare, eliminating sampling bias and providing a definitive population-level estimate. The inclusion of all three Friendship Bench cadres provides a comprehensive, organisation-wide perspective not captured in previous studies. The application of ZINB regression- rigorously justified by the observed distributional properties of both outcomes – yields more valid estimates than conventional models. The use of internationally validated and psychometrically robust measures (PHQ-9 and GAD-7) facilitates comparison with the broader literature.

Several limitations should be acknowledged. The cross-sectional design precludes causal inference, and the directionality of association, particularly for absenteeism and pain, cannot be established from this data alone. Social desirability bias and stigma may have led to conservative estimates of true symptom prevalence, particularly for clinical case-ness. Small cell counts for certain EQ-5D categories – notably self-care (n = 1 with some problems) – limit the precision of estimates for these subgroups. The single-province study setting limits generalisability to rural Zimbabwe and other Friendship Bench operating contexts. Future studies with larger nationally representative samples, longitudinal designs and mixed methods components to explore workers' subjective experiences are warranted to extend these findings.

CONCLUSIONS

This census study provides the first comprehensive, organisation-wide quantitative examination of depression and anxiety among Friendship Bench task-sharing health workers in Harare, Zimbabwe. While clinical prevalence was low (2.9% for both outcomes), subclinical distress was prevalent and disproportionately concentrated among younger workers in management and counselling roles. Younger age, physical pain, worry and absenteeism were identified as consistent, independent predictors for both outcomes after full adjustment. These findings provide an empirical foundation for developing integrated physical-psychological occupational health surveillance systems, age-sensitive mental health support for younger workers and absenteeism-triggered mental health outreach protocols. The demonstrated utility of the EQ-5D supports its dual use as a low-cost preliminary screening tool in resource-constrained settings. Longitudinal and intervention research. Research is needed to establish causal pathways and evaluate the effectiveness of the targeted interventions identified here.

ABBREVIATIONS

AOR
adjusted odds ratio
CHW
Community health worker

CI
confidence interval
CMD
common mental disorders
GAD
7-generalized anxiety disorder-7
IRR
incidence rate ratio
LMIC
low-and middle-income countries
MRCZ
Medical Research Council of Zimbabwe
ODK
open data kit
OR
Odds Ratio
PHQ
9-patient health questionnaire-9
SPSS
Statistical Package for Social Sciences
WHO
World Health Organization
YouFB
Youth Friendship Bench
ZINB
zero-inflated negative binomial.

DECLARATIONS

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Methods

This study was carried out per the guidelines and regulations stipulated by the Medical Research Council of Zimbabwe (MRCZ).

Author Contributions

TTK: conceptualization, funding acquisition, project administration, investigation, data curation, formal analysis, writing-original draft, writing-review and editing. **JW, DC, GJ**: conceptualisation, resources, supervision, writing- reviewing and editing.

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Availability of data and materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethical approval

The study was approved by the Medical Research Council of Zimbabwe's (MRCZ) ethics committee, a national ethics authority operating under the Ministry of Health and Child Care of Zimbabwe (Ref. MRCZ/A/3395). All procedures were conducted in accordance with the MRCZ Ethics Guidelines for Health Research Involving Participants in Zimbabwe (version 1.4, 2011) and the Declaration of Helsinki.

Consent to participate

All the participants provided written informed consent before participating in the study.

Declaration of generative AI and AI-assisted technologies in the manuscript preparation process.

During the preparation of this manuscript, the authors used Claude AI (Anthropic) to improve the language and readability of selected sections. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

Clinical trial number

Not applicable

Consent for publication

Not applicable

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