and behavioral interventions in this age group. This includes evaluation and dissemination of promising nonpharmacological interventions.

Mark Olfson, MD, MPH
Fangzhou Xie, MA
Greta Bushnell, PhD
Jialiang Hua, MD, MS
Jennifer Miles, PhD
Stephen Crystal, PhD

Author Affiliations: Columbia University Irving Medical Center, Departments of Psychiatry and Epidemiology, New York State Psychiatric Institute, New York (Olfson); Department of Economics, Rutgers University, New Brunswick, New Jersey (Xie); Rutgers Institute for Health, Health Care Policy, and Aging Research Rutgers University, New Brunswick, New Jersey (Bushnell, Hua, Miles, Crystal); School of Public Health, Rutgers University, New Brunswick, New Jersey (Bushnell, Hua, Miles); Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School, Rutgers University, New Brunswick, New Jersey (Hua); School of Social Work, Rutgers University, New Brunswick, New Jersey (Miles, Crystal).

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Corresponding Author: Mark Olfson, MD, MPH, New York State Psychiatric Institute/Department of Psychiatry, College of Physicians and Surgeons of Columbia University, 1051 Riverside Dr, New York, NY 10032 (mo49@cumc.columbia.edu).

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Critical review of the manuscript for important intellectual content: All authors.
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Depressive Symptoms and Associated Factors Among Kenyan Health Care Workers

The mental health of health care workers (HCWs) is an important global concern, particularly in low- and middle-income countries (LMICs) such as Kenya, where unique stressors may place HCWs at disproportionate risk for depression.[1] However, depression prevalence and risk factors in this population are not well understood. To address this gap, we evaluated the prevalence of depressive symptoms among Kenyan HCWs and identified associated demographic, psychological, and workplace factors.

Supplemental content

Methods | The Aga Khan University Institutional Scientific and Ethics Review Committee and recruitment sites approved this survey study. Participants provided electronic informed consent and were compensated 500 Kenyan shillings (US $3.86). The study followed the AAPOR reporting guideline.

We used longitudinal data collected from HCWs from 5 hospitals in Nairobi, Kenya, based on the Intern Health Study protocol.[2] HCWs who enrolled in the longitudinal UZIMA-DS study beginning in April 2023 completed surveys at enrollment and quarterly for 12 months. The surveys assessed depressive symptoms using the 9-item Patient Health Questionnaire (PHQ-9) in English[3] and other demographic, psychosocial, and workplace factors (eMethods in Supplement 1).[4]

We used a weighting strategy to reduce participant attrition biases (eMethods in Supplement 1). To capture potential variation, we assessed mean PHQ-9 scores and calculated the proportion of participants meeting PHQ-9 criteria for depression at each survey time point. We used Pearson correlations and χ^2 tests to examine associations between demographic variables and PHQ-9 scores. Risk factors were entered into a stepwise linear regression model. To explore workplace factors associated with depressive symptoms, we included repeated measures of work hours, workplace discrimination, medical errors, and stressful life events in a generalized estimating equation (GEE) model. Significant demographic and personality variables were added as covariates. Analyses were conducted in R, version 4.4.1 (R Project for Statistical Computing). Two-sided $P < .05$ was considered significant.

Results | Among 527 enrolled participants, 514 (97.5%) completed the PHQ-9 questionnaire at enrollment and were included in the analysis (mean [SD] age, 34.1 [8.1] years; 340 women [66.1%] and 174 men [33.9%]) (**Table 1** and eFigure in Supplement 1). At 3, 6, 9, and 12 months, 197 (38.3%), 211 (41.1%), 210 (40.9%), and 177 (34.4%) participants completed the depressive symptom surveys, respectively.

Table 1. Participant Characteristics[a]

Characteristic	Unweighted value (N = 514)	Weighted value (N = 514)[b]
Demographic factors		
Age, mean (SD), y	34.1 (8.1)	34.0 (9.7)
Sex		
Female	340 (66.1)	339 (66.0)
Male	174 (33.9)	175 (34.0)
Profession		
Physician	39 (7.6)	41 (8.0)
Nurse	303 (58.9)	317 (61.7)
Other	172 (33.5)	156 (30.4)
Relationship status		
In a committed relationship	388 (75.5)	389 (75.7)
Not in a committed relationship	126 (24.5)	125 (24.3)
No. of children, mean (SD)	1.5 (1.1)	1.5 (1.3)
Neuroticism, mean (SD)	30.8 (7.7)	30.8 (8.5)
Difficult early family environment, mean (SD)	19.0 (13.1)	19.0 (16.2)
Years of work experience, mean (SD), y	9.7 (6.9)	9.7 (8.2)
Psychosocial and workplace factors		
Work hours, mean (SD)	54.2 (24.8)	55.0 (33.9)
Medical errors		
Yes	31 (6.0)	31 (6.0)
No	483 (94.0)	483 (94.0)
Workplace discrimination		
Yes	220 (42.8)	242 (47.1)
No	294 (57.4)	272 (52.9)
Stressful life events		
Yes	321 (62.5)	330 (64.2)
No	193 (37.5)	184 (35.8)

[a] Unless noted otherwise, values are reported as No. (%) of participants.

[b] A weighting strategy was used to reduce participant attrition biases.

Table 2. Factors Associated With Increased Depressive Symptoms

Factor	β (95% CI)	*P* value
Demographic factors		
Age	−0.02 (−0.08 to 0.04)	.48
Female sex	0.23 (−0.46 to 0.91)	.52
Profession		
Nurse vs physician	−0.61 (−1.60 to 0.39)	.23
Other vs physician	−0.14 (−1.22 to 0.95)	.80
In a committed relationship	−0.96 (−1.82 to −0.11)	.03
Neuroticism	0.22 (0.18-0.27)	<.001
Difficult early family environment	0.07 (0.04-0.10)	<.001
Years of work experience	0.06 (−0.41 to 0.54)	.79
Psychosocial and workplace factors		
Work hours	0.16 (−0.05 to 0.38)	.14
Medical errors	1.13 (−0.17 to 2.43)	.09
Workplace discrimination	1.95 (1.36-2.54)	<.001
Stressful life events	2.51 (1.98-3.05)	<.001

After attrition weighting, 175 (34.0%), 51 (26.0%), 44 (21.0%), 47 (22.5%), and 32 (17.9%) participants met PHQ-9 criteria (≥10) for major depression at enrollment and at 3, 6, 9, and 12 months, respectively. A total of 222 participants (43.1%) met PHQ-9 criteria at 1 or more quarterly assessments, with 87 (16.9%) and 28 (5.5%) meeting criteria for moderately severe (≥15) and severe (≥20) depression.

Among demographic and personality factors established as risk factors for PHQ-9 score increase among medical residents in previous studies[2] and 1 context-specific factor, age (r = −0.09; P = .04), neuroticism (r = 0.54; P < .001), difficult early family environment (r = 0.42; P < .001), relationship status (r = -0.16; P < .001), and years of work experience (r = −0.08; P = .04) were associated with depressive symptoms. In GEE analysis, neuroticism, difficult early family environment, relationship status, stressful life events, and workplace discrimination were associated with increased depressive symptoms (**Table 2**).

Discussion | In this 12-month survey study of Kenyan HCWs using validated measures and an established protocol, 43.1% of participants met PHQ-9 criteria for major depression—a rate notably higher than that reported for HCWs in Europe and North America and in the general Kenyan population.[5,6] Consistent with previous studies,[2] risk factors for depression were higher neuroticism, not being in a committed relationship, having a difficult early family environment, experiencing stressful life events, and experiencing workplace discrimination. Unlike findings from US studies,[2] work hours and medical errors were not associated with depression.

Potential limitations include underreporting and lack of generalizability beyond nurses and physicians in Nairobi. These findings underscore the need for culturally tailored mental health interventions that address key individual and contextual risk factors for HCWs in LMICs.

Andrew Aballa, MSc
Dorcas G. Mwigereri, MSc
Zhuo Zhao, MS
Willie Njoroge, MSc
Linda Khakali, MA
Rachel Maina, PhD
David Andai, MBChB
James Orwa, PhD
Amos Bunde, MSc
Eileen M. Weinheimer-Haus, PhD
Jessica Baker, MS
Lukoye Atwoli, MD, PhD
Srijan Sen, MD, PhD
Akbar K. Waljee, MD, MSc
Anthony K. Ngugi, PhD
Amina Abubakar, PhD
Zhenke Wu, PhD
Zul Merali, PhD
Elena Frank, PhD

Author Affiliations: Brain and Mind Institute, Aga Khan University, Nairobi, Kenya (Aballa, Njoroge, Khakali, Maina, Andai, Atwoli, Merali); Department of Population Health, Aga Khan University, Nairobi, Kenya (Mwigereri, Orwa, Ngugi); Michigan

Neuroscience Institute, University of Michigan Medical School, Ann Arbor (Zhao, Sen, Frank); Computing and Data Innovation Office, Aga Khan University, Nairobi, Kenya (Bunde); Center for Global Health Equity, University of Michigan, Ann Arbor (Weinheimer-Haus, Waljee); Department of Learning Health Sciences, University of Michigan Medical School, Ann Arbor (Weinheimer-Haus, Baker, Waljee); Michigan Integrated Center for Health Analytics and Medical Prediction, University of Michigan, Ann Arbor (Weinheimer-Haus, Waljee); Department of Medicine, Medical College East Africa, Aga Khan University, Nairobi, Kenya (Atwoli); Institute for Human Development, Aga Khan University, Nairobi, Kenya (Abubakar); Neurosciences Unit, Kenya Medical Research Institute, Wellcome Trust Research Programme, Kilifi, Kenya (Abubakar); Department of Biostatistics, University of Michigan, Ann Arbor (Wu).

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Corresponding Author: Andrew Aballa, MSc, Brain and Mind Institute, Aga Khan University, Nairobi 00100, Kenya (andrew.aballa@gmail.com).

Author Contributions: Mr Aballa and Ms Mwigereri had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
Concept and design: Aballa, Mwigereri, Njoroge, Maina, Andai, Bunde, Baker, Atwoli, Sen, Waljee, Ngugi, Abubakar, Wu, Merali, Frank.
Acquisition, analysis, or interpretation of data: Aballa, Mwigereri, Zhao, Njoroge, Khakali, Andai, Orwa, Weinheimer-Haus, Atwoli, Waljee, Ngugi, Wu, Merali, Frank.
Drafting of the manuscript: Aballa, Mwigereri, Njoroge, Andai, Baker, Atwoli, Wu, Merali.
Critical review of the manuscript for important intellectual content: All authors.
Statistical analysis: Aballa, Mwigereri, Zhao, Andai, Orwa, Atwoli, Wu.
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Supervision: Maina, Weinheimer-Haus, Atwoli, Sen, Waljee, Ngugi, Abubakar, Wu, Merali, Frank.

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COMMENT & RESPONSE

Enough to Promote Changes to Current Management of Catatonia?

To the Editor We read the article[1] by Pathak et al recently published in *JAMA Psychiatry*. This retrospective study[1] explored relapse in catatonia and reported that antipsychotic prescription at discharge was associated with reduced relapse risk. This letter outlines concerns about the study design and generalizability of the findings.

The use of antipsychotics in managing catatonia is controversial because antipsychotics can induce and worsen catatonia.[2] Furthermore, evidence suggests that first-generation antipsychotics (FGAs) can worsen catatonia and increase the risk for neuroleptic malignant syndrome.[3,4] The authors note in the supplemental content that risperidone, olanzapine, amisulpride, and aripiprazole were the most frequently prescribed antipsychotics—all second-generation antipsychotics (SGAs). It would be helpful to know if any FGAs were used and how relapse rates and adverse events compare between the FGAs and SGAs. Additionally, for the minority of patients who were not prescribed antipsychotics at discharge, we wonder about the reasons for not prescribing (such as adverse effects or worsening of catatonia) and whether these reasons were more instrumental in leading to relapse than the lack of antipsychotic per se.

The authors report significant improvement after the lorazepam challenge test (LCT) in the catatonia relapse (CR) group compared with the group without CR, but they do not disclose what defined "…significantly…improved symptoms."[1] No scales are referenced and "routine clinical practice"[1] is not defined, which further limits generalizability. The study findings show antipsychotic prescription was associated with longer time to relapse; however, the authors do not sufficiently examine interacting treatment effects such as simultaneous benzodiazepine prescribing or electroconvulsive therapy (ECT). eTable 7 in Supplement 1 shows a 46% reduction in relapse of catatonia (hazard ratio, 0.54; 95% CI, 0.34-0.85; $P = .01$) in participants who received ECT, but the adjusted analysis does not include ECT. It is not clear why ECT was excluded from the adjusted multivariate analysis or how the components of that analysis were chosen. It seems reasonable that a patient who does not respond significantly to LCT would be a candidate for ECT and thus more likely to be a part of the group without CR.

In conclusion, the design of the study is too ambiguous to promote changes to current management of catatonia. Future studies would benefit from randomizing participants and standardizing treatment practices to explore the findings in this article.[1]

Brandan K. Penaluna, MD, MBA
Robert J. Morgan III, MD, PhD
Nicholas D. Allen, MD

Author Affiliations: Department of Psychiatry and Psychology, Mayo Clinic, Rochester, Minnesota.

Corresponding Author: Brandan K. Penaluna, MD, MBA, Department of Psychiatry and Psychology, Mayo Clinic, 200 First St SW, Rochester, MN 55905 (penaluna.brandan@mayo.edu).