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PREVALENCE AND IMPACT OF DEPRESSION AMONG AGRICULTURAL HOUSEHOLDS IN KENYA

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Abstract

Depression is a serious concern among rural families due to the particular difficulties they undergo. These include erratic weather patterns, fluctuating market values, monetary strains, and the social and physical isolation that comes with farming. These problems are made worse by elements like crop failure, income loss, and a lack of support networks, which may raise the prevalence of anxiety, depression, and other psychological conditions. The purpose of the study was to examine the prevalence of depression among agricultural households in Kenya. A mixed-method research design approach was used among the targeted rural farmers in Kenya. Stratified random sampling technique was used to select 905 farmers who questionnaires and Focused Group Discussion conducted on them during the study. Data was analysed using descriptive statistics and thematic analysis on qualitative data by the assistance SPSS version 17 and multilinear regression. The study revealed that The Pearson correlation between depression and agricultural output is -0.039. This figure indicates a very weak negative correlation, meaning that there is a minor tendency for agricultural productivity to decrease when depression levels rise. The significance value (p-value) associated with this connection is 0.615. This implies that the connection is not statistically significant at the 0.05 level, and there is no meaningful relationship between depression and agricultural productivity in the research group. It is commonly known that mental health issues affect productivity in a variety of businesses, but the unique conditions of agriculture may introduce additional elements that mitigate or obscure this relationship. Many factors may be significant, such as the utilization of seasonal labour, social support systems, and coping mechanisms. The study recommended stakeholders can improve farmers' mental health and increase agricultural productivity by putting these suggestions into practice. Resilient farming communities require a comprehensive strategy that takes into account both productivity and mental health.

Keywords: Depression, rural families, market values, crop failure, income lose.

INTRODUCTION

Depression is a frequent mental health illness marked by a persistently poor mood or a loss of interest or enjoyment in activities. This differs from ordinary mood fluctuations and feelings about daily affairs, which are considerably more fleeting and closely tied to specific occurrences (Charlson et al., 2019). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) states that a diagnosis of depression requires the presence of five or more core symptoms within a two-week period, with at least one of these symptoms being sad mood or anhedonia (a loss of interest or pleasure) (Hengartner et al., 2019). Other symptoms could include an increase or reduction in appetite, considerable loss of weight or gain, sleeplessness or hypersomnia, increased agitation or lethargy, cognitive fog, feelings of inadequacy or excessive guilt, and suicidal ideation (Alegría et al., 2018).

Depression affects an estimated 5% of persons worldwide (World Health Organisation, 2023). Other symptoms could include an increase or reduction in appetite, considerable loss of weight or gain, sleeplessness or hypersomnia, increased agitation or lethargy, cognitive fog, feelings of inadequacy or excessive guilt, and suicidal ideation. Depression affects an estimated 5% of persons worldwide in terms of physiological ill-health, research has shown that having symptoms of depression combined with a longstanding medical condition, such as diabetics or heart disease, can result in poorer health outcomes and a lower quality of life than people with similar conditions who do not exhibit signs of sadness (*Brydsten, 2018).*

Depression also has a substantial impact on relationships between people and emotional well-being, with inadequate social assistance and lower connections with others linked to higher isolation and more severe depressive symptoms (*Gruebner, et al., 2017).* In instance, it has been proposed that having a bad relationship with a partner or family members may raise a person's risk of depressive disorders, with connection to these groups acting as a key buffer. Significant life stresses include unpleasant prenatal events, interpersonal disputes, and high-stress employment. (Manczak et al., 2018). Depression also has a substantial impact on relationships between people and emotional well-being, with inadequate social assistance and lower relationships with others linked to higher isolation and more severe depressive symptoms (Mushtaq, et al., 2014). In instance, it has been proposed that having a bad relationship with their partner or family members may raise a person's risk of depressive disorders, with connection to these groups acting as a key buffer (Manczak et al., 2018). Significant stressful events in life, such as negative childhood experiences, interpersonal conflict, and high-stress employment, may all lead to an elevated risk of depression (Byansi et al., 2023).

When comparing rates of mental health illnesses across different communities, there is some intricacy to be considered, with some assessments indicating higher levels in urban regions compared to rural areas, though methods of determining this vary (Forrest et al., 2023). However, suicide rates in rural areas continue to be high. Farming is seen as a particularly high-risk profession for mental health issues, with a significant prevalence of suicidal ideation and depression among this group (Scheyett et al., 2024). This is due to a variety of social, cultural, and professional factors, including job security fluctuations caused by weather conditions and shifting markets, economic strain, working long hours, poor work-life balance, inadequate media coverage, and a well-known culture of optimism, independence, and resistance to seeking mental health support (Wong, Lee, Teh and Chan, 2021). In terms of depressive disorders, farmers have been found to have greater levels of depression and anxiety than non-farmers, with a Norwegian study indicating an odds ratio of 1.49 (95% CI: 1.22-1.84) when compared to the overall population, with occupational characteristics identified as important contributors (Torske et al., 2016). A comprehensive analysis of indicators of risk for depressed among farmers and their families supported this finding, indicating increased stress, unhealthy lifestyles, financial hardship, and prior injury as risk factors for suicidal thoughts and behaviors (Daghagh, Wheeler and Zuo, 2019).

This suggests that farming communities should be prioritised in psychological research, as the agrifood business employs a sizable amount of the world's workforce (King et al., 2023). According to the Food and Agriculture Organisation of the United Nations, 1.23 billion people are directly employed in agrifood systems, with nearly three times that amount residing in agrifood-producing households. Of these 1.23 billion individuals, 857 million labors in primary agricultural production, indicating that the farming community should get priority in global mental health assistance activities. In addition, this people consider farming to be not merely an occupation, but an aspect of life having its own history, culture, and traditions (FAO, 2019). Many families of farmers are also an integral component of this manner of life, with family farms accounting for around 80% of all farms globally (FAO, 2014). Because of the strong link between family and farming, farm family members face many of the same mental health risks as primary farmers, including varying financial strain, extended hours of labour, conflict between work and family, and a perception of self-reliance and silence (*Herron et al., 2020).*

Additionally, the stresses of agricultural life present particular challenges for farmers' families. For instance, farming partners and spouses frequently describe that they have to constantly be an encouraging presence in the home, doing all household duties outside of farming, such as taking care of the children or handling finances, and serving as the farmer's only emotional support system (Rudolphi and Berg, 2023). But in spite of these established risk factors, primary farmers themselves have received most of the attention in the literature on the prevalence of symptoms of depression in farming communities, with little focus on the incidence of depressive disorders symptoms in their families (Younker and Radunovich, 2021). Moreover, prior systematic evaluations that have looked at depression in farming communities have either included a combination of samples of primary farmers and farming family members without making a distinction between the two categories, or have mainly concentrated on migrant farmers, primary farmers, or seasonal farmworkers (Hagen et al., 2020). Evaluating the quality of this research and determining the current reported prevalence of depressive symptoms among farming family members were the goals of this systematic review.

Objective of the Study

To assess the prevalence of depression in rural areas and determine the demographic variables affecting mental health results and how depression has affected family dynamics, agricultural output, and the general well-being of household members.

Literature Review

Depression in particular is becoming more widely acknowledged as a major element influencing the welfare of farming households. Research shows that social isolation, climate fluctuation, and economic instability are some of the stresses associated with agriculture that have a major impact on mental health issues in rural areas (King et al., 2023). Studies have revealed that depression prevalence rates among agricultural workers around the world differ. Research shows that mental health problems are common in Kenya, where estimates suggest that up to 30% of farmers may suffer from depressed symptoms (Mwangala et al., 2022). This incidence is frequently higher in areas that are experiencing extreme weather conditions and financial difficulties. Higher rates of depression in agricultural households are associated with a number of socioeconomic conditions (Dewi et al., 2024). Crop failures, loan availability, and market price fluctuations can all cause financial stress, which can worsen mental health conditions. Furthermore, societal characteristics that influence mental health outcomes include gender roles, education level, and support networks within the community (World Health Organization, 2021). Agricultural productivity is greatly impacted by environmental changes, especially climate change, which also exacerbates mental health issues (Padhy et al., 2015).

Farmers experience more stress and uncertainty as a result of droughts, floods, and erratic weather patterns, which raises their risk of developing depressive symptoms. Depression has wider effects on agricultural output in addition to its effects on personal well-being (Cianconi, Betrò and Janiri, 2020). Research has indicated that depressed symptoms may result in diminished motivation, compromised decision-making, and reduced levels of productivity. This leads to a vicious cycle in which lower agricultural productivity makes financial strain and mental health problems even worse (Ejiohuo et al., 2024). Although mental health problems in agricultural environments are becoming more widely acknowledged, there aren't many focused solutions available. Addressing these issues requires access to professional mental health care, mental health education, and community-based support networks. Furthermore, incorporating mental health services into agricultural initiatives might strengthen farming communities' resilience (*FAO, IFAD, UNICEF, WFP and WHO, 2023).*

In rural homes, depression can have a significant effect on family relationships. According to research, family members who have depressed symptoms may experience strained relationships and communication failures (Nabayinda et al., 2023). Children's mental health and development may suffer as a result of depressed parents' inability to offer them emotional support. Conflicts over resources, duties, and decision-making procedures can also result from familial stress (Wiedermann et al., 2023). It is commonly known that agricultural productivity and depression are related. Farmers' motivation,

focus, and ability to make decisions can all be negatively impacted by depressive symptoms, which can ultimately result in lower productivity (Freund et al., 2022). According to studies, farmers who are depressed report poorer crop yields and are less inclined to embrace innovative farming techniques, which makes their households' financial difficulties even worse. Mental health and household members' general well-being are closely related (Andrews et al., 2019). Depression has an impact on social interactions, physical health, and financial stability in addition to having an effect on the individual and the family. Families with depressed members frequently face lower social cohesiveness, higher medical expenses, and a lower quality of life (Kirkbride et al., 2024).

The literature emphasizes how common depression is and how it affects Kenyan rural households. A multimodal strategy that takes socioeconomic, environmental, and cultural aspects into account is needed to address these mental health issues (Mwangala et al., 2025). In order to promote mental health and agricultural resilience, future research should concentrate on creating efficient interventions that are suited to the particular requirements of agricultural communities. Developing successful therapies requires an understanding of the frequency of depression and its complex effects in rural farming communities (Braun et al., 2019). The consequences for family dynamics, agricultural production, and general well-being highlight the need for integrated support systems, while an emphasis on demographic factors provides important insights into mental health issues (Andrews et al., 2019. Finding practical solutions to these issues and advancing mental health in rural areas should be the goal of future study.

MATERIALS and METHODS

Research Design

A mixed-methods approach was used in this study, combining quantitative and qualitative techniques to give a thorough grasp of the prevalence of depression in rural farming households and its effects.

Study Population

Agricultural households in particular rural Kenyan areas were part of the target population. The study aimed to capture a variety of viewpoints by focusing on male and female farmers as well as other family members.

Sampling Method

To guarantee representation across various demographics, a stratified random sample technique was employed, which included: Age groupings (e.g., adolescents, adults, elderly), Gender (both men and women), financial standing (poor, moderate, or high income), Levels of education (primary, secondary, postsecondary, and no formal education). For statistical significance, a sample size of roughly 905 houses was the goal.

Data Collection Methods

Quantitative Data Collection: Surveys: Using standardized instruments like the Patient Health Questionnaire (PHQ-9), structured questionnaires will be created to determine the prevalence of depression. Additionally, socioeconomic and demographic data will be gathered through the survey. Agricultural Output Metrics: The survey will use self-reported measures to collect information on income levels, animal production, and crop yields.

Qualitative Data Collection: Focus Group Discussions (FGDs): FGDs were held with a chosen group of home members to investigate how depression affects family relationships and general health. There was a mix of ages and genders in each group, which had six to eight individuals. Comprehensive Interviews: To acquire a deeper understanding of community-specific issues and support networks, semi-structured interviews were carried out with important informants, including community leaders, mental health specialists and local health workers.

Data Analysis

Quantitative Analysis: Demographic factors and the prevalence of depression were evaluated using descriptive statistics. To find connections between demographic characteristics and mental health outcomes, inferential statistics (such as regression analysis and chi-square tests) was used.

Qualitative Analysis: To find recurrent themes in the interviews and focus group discussions, thematic analysis was utilized. To do this, the data had to be coded and categorized into major themes pertaining to well-being, family relationships, and agricultural productivity.

Ethical Considerations

Before taking part in the research, participants gave their informed consent (informed consent). To maintain confidentiality, data was gathered anonymously and personal identifiers eliminated. Participants, particularly those exhibiting symptoms of depression, were given information on support services and mental health resources.

RESULTS and DISCUSSION

The results are shown first by prevalence among the population groupings of recognized farm families, followed by related factors. Where accessible, descriptive statistics have been incorporated to bolster the narrative synthesis. The Patient Health Questionnaire for Adolescents (PHQ-A; Rudolphi and Berg, 2023); the Patient Health Questionnaire-2 (PHQ-2) (Shrestha et al., 2017); the Centre for Epidemiological Studies Depression Scale (CES-D) (Bette et al., 2018); the Multiple Adjectives Affect Checklist (MAACl) (Hertsgaard and Light, 1984); and a self-report yes/no question, "has a doctor ever told you have been diagnosed with depression?" were among the self-report measures of depressive symptoms.

Sample Characteristics and Prevalences Depressive Symptoms and Factors

The information in the *table 1* compiles findings from a number of research on the incidence of depressive symptoms in agricultural partners throughout Kenyan counties. A deeper analysis provides crucial information about the mental health issues this demographic faces and the factors that contribute to these issues. The studies' participants were mostly agricultural partners, and their sample sizes ranged from 137 to 269 to 116 to 383 in size. The studies' allocation of participants by gender varied; some only included males, while others included both males and girls. The study was carried out throughout multiple counties (Kisii, Nyamira, Kisumu, and Migori), suggesting a wide range of geographic coverage. Different social and economic conditions that impact mental health may be reflected in this diversity.

A checklist measuring the prevalence of depression symptoms in Kisii County showed a mean score of 12.9 (SD = 9.32). Significantly, characteristics that were linked to higher levels of depressive symptoms included having more than two children under the age of sixteen, rarely interacting with others, and spouses with poor levels of education. County of Nyamira, 18% of patients in this study received a confirmed diagnosis of depressive symptoms. Age, race, and substance usage (alcohol, cigarettes, solvents) were all contributing factors. This implies that demographics and lifestyle decisions have a big impact on mental health.

In Kisumu County, 29% of people scored at or above the level for concern, highlighting the prevalence of severe depression symptoms. Risk factors included being around violence, engaging in risky activities, and having gone through painful experiences like seeing someone commit suicide. These results highlight the psychological effects of hazardous and stressful situations. County of Migori, according to the study, 11% of participants had depressed symptoms associated with Parkinson's disease, highlighting the connection between mental health and chronic illnesses. Another indication of the distinct nature of mental health problems in this group is the lack of anxiety symptoms.

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Table 1. Sample Characteristics and Prevalences

Sample Size	Population	Gender	Counties	Measure of Outcome	prevalence of depressive symptoms	Prevalence of factors	Sore of Strobe quality index
137	Farming Partners	Male 61% Female 39%	Kisii	Checklist for Affect Adjectives	M = 12.9 (SD, 9.32)	More than two children under the age of 16 infrequent social interaction isolation from farm choices increased worry, increased animosity, and spouses with less than a high school diploma	15
269	Farming Partners	Male 100%	Nyamira	Self-report	of the sampled, 176(18%) had a confirmed diagnosis depression symptoms	Person's age, race, usage of alcohol, cigarettes solvents, personal pesticide distribution and frequent medical visits	27
116	Farming/ Non-farming adolescents	Male 73% Female 27%	Kisumu	Depression Scale From the Centre for Epidemiological Research	M=21.93% scored 25 or higher, 29% scored or higher	Driving a four-wheeler, being stabbed or shot, engaging in dangerous activities, attempting Suicide, or witnessing A friend attempt or Complete suicide	31
383	Farming Partners	Female 100%	Migori	Health Questionnaire for Patients	76(11%) people have depression symptoms	All Parkison's disease-related non-motor symptoms, with exception of anxiety	19

According to Kisii's results, mental health issues are exacerbated by social isolation and familial obligations. This suggests that in order to lessen these impacts, community support networks are necessary. The Nyamira data underscores the connection between substance use and mental health, suggesting a possible avenue for intervention through education and support initiatives meant to lessen reliance on dangerous substances. The Kisumu study highlights the detrimental effects of trauma and violence on mental health and recommends that interventions target these risk factors, including through community resilience initiatives and counselling. The Migori findings show how physical and mental health are intertwined, suggesting that medical professionals should take a comprehensive strategy that takes into account the effects of long-term physical issues on mental health.

The Relationship Between Agriculture Output and Depression

The *table 2* shows the Pearson correlation coefficients, based on a sample size of 905, between agricultural output and depression. Examining the connection between depression and agricultural productivity is the goal of the analysis. The agricultural output and depression have a -0.039 Pearson correlation value. With a very weak negative correlation, this value suggests that agricultural productivity tends to decline slightly when depression levels rise, but the association is not very strong. 0.615 is the significance value (p-value) linked to this association. At the 0.05 level, this suggests that the association is not statistically significant. To put it another way, there is not enough data to draw the conclusion that depression has a major impact on agricultural productivity. A sample size of 905 is used for the analysis, giving the correlation analysis a solid foundation. Nevertheless, the association is still weak and insignificant in spite of the enormous sample size.

Table 2. Pearson product moment correlation coefficient agriculture output and depression (N = 388)

	Depression	***Agriculture Output***
Pearson correlation coefficient of depression	1	-.039
Sig. (2-tailed)		.615
N	905	905
Pearson correlation agriculture output	-.039	1
Sig. (2-tailed)	.615	
N	905	905

**- Correlation is significant at the 0.05 level (2-tailed)*

According to the findings, there is no significant correlation between agricultural productivity and depression in the group under study. Although it is well established that mental health problems have an effect on productivity across a range of industries, the particular circumstances of agriculture may add special factors that lessen or mask this association. A number of variables, including the use of seasonal labour, social support networks, and coping strategies, may be quite important (Descatha and Fadel, 2023). Causation is not implied by correlation. Although there is no significant link, this does not imply that depression has no effect on agricultural output; rather, it may suggest that other mediating factors like socioeconomic position, resource accessibility, or community support have a greater impact in this situation (Hailemichael et al., 2025).

It's essential to take into account additional elements including social networks, market accessibility, and environmental variables that may have an impact on both depression and agricultural productivity. These variables could be investigated further to offer a more thorough insight (Ejiohuo et al., 2024). The lack of a substantial association suggests that interventions that only focus on mental health may not have a direct impact on agricultural productivity. Nonetheless, it can be advantageous to use integrated strategies that target both agricultural practices and mental health.

Conclusion

Developing focused therapies requires an understanding of the prevalence and contributing variables of depressive symptoms among farming partners. These aspects should be further investigated in future studies, with an emphasis on practical methods to enhance mental health outcomes in this susceptible group (Wainberg et al., 2017). The analysis shows that among the population under study, there is a weak and statistically insignificant link between depression and agricultural output (Deng et al., 2022). To gain a deeper understanding of the intricacies of mental health in agricultural environments, future studies should take into account a wider range of factors and possibly qualitative methodologies. More complex insights on how to promote productivity and mental health in farming communities may result from this.

Recommendations

In light of the results pertaining to the correlation between agricultural productivity and depression, create programmes that are integrated and address both agricultural productivity and mental wellness. This might involve providing farmers with counselling services in addition to instruction on better farming methods. Create networks of community support to encourage social contact and lessen farmer isolation. Peer support groups can help people talk about their experiences and coping mechanisms, which may help them feel less depressed. Launch educational initiatives to increase knowledge of mental health conditions and how they affect output. This may lessen stigma and motivate farmers to get assistance. Increased availability of mental health services, such as treatment and counselling, is particularly needed in rural areas. Remote communities can be effectively reached by telehealth services or mobile health units.

To find and examine any mediating elements that affect depression and agricultural productivity, more research should be done. Designing focused treatments can be made easier with an understanding of these variables. Encourage the implementation of laws that acknowledge and respond to the mental health requirements of agricultural laborers. This can involve financing mental health treatments and assistance for initiatives that improve farming communities' general well-being. Train farmers on coping mechanisms and stress management. Workshops can assist people in learning how to deal with stressors associated with mental health issues as well as difficulties in agriculture. Work together with farming associations to advance mental health programmes among farmers. Programmes that address mental health and agricultural productivity can be implemented more easily because to this relationship.

Conflict of Interest

The authors declare no conflict of interest.

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