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To cite this article: Toyin S. Olowogbon, Aaron M. Yoder, Segun B. Fakayode & Abraham O. Falola (2019) Agricultural stressors: identification, causes and perceived effects among Nigerian crop farmers, Journal of Agromedicine, 24:1, 46-55, DOI: [10.1080/1059924X.2018.1538915](https://doi.org/10.1080/1059924X.2018.1538915)

To link to this article: <https://doi.org/10.1080/1059924X.2018.1538915>



Published online: 01 Nov 2018.



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Agricultural stressors: identification, causes and perceived effects among Nigerian crop farmers

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ABSTRACT

Background: Many studies have focused on agricultural-related health hazards globally; however, little is known about agricultural stressors among crop farmers in the developing countries. This study identified agricultural stressors, their causes and ascribed effects among crop farmers in Nigeria.

Methods: There were 70 crop farmers randomly selected in farming communities across Ekiti State, an agrarian State in South-Western, Nigeria. A structured questionnaire with interview was used for data collection. Data were analyzed using descriptive statistics.

Results: Findings from the study showed that about 98% of the farmers were able to identify stressors that are occupational-related. About 80% of the respondents thought they had been mostly affected by agricultural stressors in a number of ways including inability to sleep regularly, relaxation problems, excessive tiredness, back problems, and intense headache. About 98% of these farmers are yet to develop structured means of coping with these stressors.

Conclusion: We concluded that agricultural stressors affect farmers' well-being. Efforts should be made at initiating a stress management campaign for Nigerian crop farmers. Government and development partners should assist farmers in their challenged areas, and there should be functional integration of mental health focused agricultural health in primary health care.

KEYWORDS

Agricultural stressors;
occupational risks;
psychosocial risks; work-
related stress

Introduction

About 40% of the 3.384 billion global workforce is engaged in agriculture, making this sector the largest provider of jobs globally.^{1–3} Africa is ranked second (52%) after Asia and the Pacific (59%) in terms of continents having the largest share of their workforce engaged in agriculture. Agriculture is one of the most hazardous occupations worldwide. After construction, the agricultural sector has the worst record for work-related fatalities and high incidence of occupational ill health and injuries.⁴

Agriculture is a major part of Nigeria's economy and has been described as fundamental in salvaging the nation from economic recession. About 121million of the 175million Nigerian population are farmers, of which about 80% are small holder farmers. These small holder farmers are poor, typically not literate, have limited infrastructure, are solely depend on rain fed agriculture, and have

limited adaptive and coping capacity.⁵ However, despite the role played by agriculture in reducing poverty, agriculture has been described as a risky occupation exposing farm workers to several work-related risks including agricultural stressors.-^{4,6–11}

In spite of the documented risks in agriculture, Nigerian agriculture has a deep-seated culture of unwise risk taking and lack of appreciation of the role that good health and safety management can play. Agriculture in Nigeria is largely a way of life and as such, is usually not regulated, so the safety and health of workers are neglected.^{4,12} The high incidence of injuries and illness in agriculture may be related to workplace stress.¹³ Stress may not be noticed in time, and in most cases, only ill health or dysfunction may cause an individual to realize he/she is under stress.

In recent times, there has been a change in the dimensions of agricultural risks and hazards exposure of agricultural workers in Nigeria. This

change is due to increased need to meet food and monetary demands of households. Low agricultural productivity from climate change impact has also not helped issues. These issues have exposed farmers to work-related stressors affecting their well-being.

While stress is the response, stressor is the stimulus eliciting a need for adaptation. In the Guidance on Work-related Stress issued by the European Commission, work-related stress is defined as a pattern of emotional, cognitive, behavioral and physiological reactions to adverse and noxious aspects of work. This includes the work content, organization and environment with the workplace as the major source of stress.¹⁴ The United States National Institute for Occupational Health and Safety defined work-related stress as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker¹⁵ and expresses the view that working conditions are a primary factor, but that personal factors are also influential.

Work-related stress was further ranked as a major occupational health problem by the United Kingdom (UK) Health and Safety Executives (HSE).¹⁶ Work-related stress is a major source of psychosocial hazards that has not been given priority in the agricultural sector of most developing countries. These stress factors could be of physical, psychological, or social in nature. This is probably due to the complex nature of the way agriculture is carried out in these nations.¹²

Aside from farming, 'agriculture' covers many other associated activities, such as crop processing and packaging, irrigation, pest management, grain storage, animal husbandry, and construction. Agriculture is not only physically (and at times emotionally) demanding; it is also time-intensive. There is never a shortage of farm tasks to complete, which can be stressful for some people, especially those who like to feel a sense of completion.¹⁷

Farm stress occurs as a result of adverse reaction people have to excessive pressure or other types of demand placed on them or reactions to some uncertainty as it relates to their farming activities. This is usually due to exposure of farm workers to stressors in the work place that cause frustration, anxiety, or worry, putting pressure on

the farmer. In addition, because agricultural operations are mostly seasonal, self-owned, and peasant in nature, coupled with the rural lifestyle, these factors expose farmers to numerous stressors.

As reported by the University of California, younger farmers, especially those younger than 50-years-of-age, report more stress than older farmers. Also, farmers that practice mixed farming (for example, crop and livestock farming) report higher stress levels than those in crop farming only. Farmers employed in off-farm jobs report more stress than full-time farm operators.¹⁷ Women working on farms may experience additional stress factors. Besides working as a full partner in the farm business, many women have sole responsibility for the home and family matters. A woman with an off-farm job faces very difficult demands in addition to being the traditional nurturer for the rest of the family.¹⁸

The stresses of farm work affect farm workers' physical and mental well-being.¹³ Stress causes ill health, affecting the mental health and physiology of the body. Individuals react in various ways when affected by stress. The effects of stress include behavioral changes, gastrointestinal disorders, fatigue, and sleep disorders. Stress also increases the risk of other diseases such as cardiovascular disease and other psychological disorders.¹⁹

Many studies have quantified agricultural workplace health issues such as agrochemicals poisoning, ocular injuries, hearing loss, and ergonomic injuries, but little is known about the psychosocial workplace hazards, including stress.²⁰⁻³¹ More so, general workplace stressors have been identified from sources such as the HSE, the National Institute for Occupational Safety and Health (USA) (NIOSH) and the International Labour Organization (ILO).

HSE identified workplace stressors as including relationship, demand, role-change, control, and lack of support.¹⁵ For NIOSH, workplace stressors include design of tasks, management style, interpersonal relationships, work roles, career concerns, and environmental conditions.³²

ILO noted out-of-job demands, job control, social support, physical environment, work-life balance, and working time, recognition at work, protection from offensive behavior, job security,

information, and communication as work place stressors.³³ However, since agricultural practice in most developing countries is a means of livelihood, social security, and way of life, studying work-related stress in agriculture for a developing agrarian nation like Nigeria is important in understanding the mechanism underlying agricultural stressors in cropping operations, developing adequate coping (adapting to stress situations) strategies, and making possible efforts at removing some of the identified stressors. This may, in the long run, enhance farmer's overall health, agricultural productivity, and food security. Despite this importance, little is known about stressors in crop production in developing country like Nigeria. We are not aware of any study in Nigeria with focus on agricultural related stressors, especially in crop production. This present study intends to bridge this information gap by providing answers to the following research questions: (i) Can Nigerian crop farmers identify stressors in their workplace? (ii) What are the causes of stress in Nigerian farm workplaces? (iii) What are the ascribed effects of agricultural stressors among Nigerian crop farmers?

Materials and methods

Study area

The study was carried out in Ekiti State, Nigeria. The State has 16 Local Government Areas with coordinates 7° 40'N, 5°15'E/7.667°N, 5. 250° E. The total land area is 6353 km² with a population of 2,237,186 people. Agriculture provides income and employment for more than 75% of the population.^{34,35} Ekiti State is also categorized by the Ekiti State Agricultural Development Project EKADP into three zones—A, B and C—based on agronomic and ecological considerations. These zone headquarters are situated at Aramoko, Ikere, and Isan.³⁵

Study type and instrument

The study was a descriptive cross-sectional survey designed to elicit information on agricultural stressors among farmers in Ekiti State, Nigeria. Farmers who had farming as their primary occupation across the farming communities in the State

were approached for the study. Approximately 85 farmers were informed about the purpose of the study, and 74 gave their consent to participated via information letters. However, after data collection and cleaning, 70 of the questionnaires were found useful (N = 70). Information was collected with the aid of a structured questionnaire and semi-structured interview. The questionnaire was designed to elicit information on socio-economics, agricultural stressors and their causes, and perceived effects among the farming population as experienced by crop farmers. The instrument was administered through a test and retest method of 3week interval to ensure internal reliability of the instrument. The reliability index was found to be 0.73. The instrument was augmented with a semi-structured interview to elicit qualitative information on the stressors associated with their occupation. The research instrument was developed based on the information available empirically.^{14,15,36,37} Various components of the instrument include: section A, socio-economic characteristics of the respondents; Section B, stressor identification and causes of farm stress on a 4-point Likert scale (4 = strongly agree [SA], 3 = Agree [A], 2 = disagree [D], 1 = strongly disagree [SD]); Section C, the ascribed effects of farm stressors and intensity of effects on a -point Likert scale (type 2 = mostly affected [MA], 1 = occasionally affected [OC], and 0 = not affected [NA]). Authors sought consent of the respondents via an informed consent document with participants being informed of the purpose of the study and the confidentiality of the information provided. Respondents signed/thumb printed to show approval. The farmers were provided brief education on the concept of farm stress. This education included farm stress, sources and effects of farm stress using oral presentation. This was followed with a semi-structured interview using probing and prompting to elicit more information about farm stress related issues from farmers. Authors are aware of the limitation of this method, which includes biased results leading to overestimation of stressor prevalence and effects. However, this was corrected for by cross-checking responses from the structured questionnaire and interview with the use of probing and prompting responses to check for internal validity and consistency.

Data analysis

Collected data were analyzed using descriptive statistics such as frequency and percentage, means, standard deviation, and range. Stressors were ranked from the Likert scale mean as reflected in equation 1

$$X = \frac{\sum_{n=1}^1 Fx}{N} \quad (1)$$

Where X = the mean response to an item

Σ = the summation

F = number of respondents choosing a particular scale point

x = numerical value of a scale point

N = total number of respondents to an item

The mean response to a particular item was interpreted using the concept of real limit of numbers. The numerical values of the scale points and their respective real limits are as follows:

- SD = points with real limits of 0.50–1.49
- D = points with real limits of 1.50–2.49
- A = points with real limits of 2.50–3.49
- SA = points with real limits of 3.50–4.0

Values of mean calculated from the responses are interpreted accordingly e.g., a mean range of 0.5–1.49 is interpreted SD. The intensity of effects was also computed using the above model real limits as follows: Mostly affected = 1.5–2.0; Occasionally affected = 0.6–1.50, and Not affected = 0.00–0.50 accordingly.

Results

The findings from the study show that about 80% of farmers planted maize and cassava, 10% planted solely cassava, and 10% planted cassava and watermelon. About 85.7% had previous agriculture-related training, while 14.2% had no previous exposure to agricultural training.

Further findings from the study are shown in Table 1: the mean age was 34 years, with about 37.5% of the respondents in the age class of 31–35 years, and the age ranged between 20 and 50 years-of-age. Average years spent in school was 14 years, with about 43% and 33% having technical and degree qualifications, accordingly. Average

Table 1. Socio-economic characteristics of respondents (N = 70).

S/N	Characteristics	Value
1	Age (years)	
	Mean	33.57
	Standard deviation	2.34
2	Coefficient of variation	6.97%
	Years spent in school	
	Mean	13.97
3	Standard deviation	1.17
	Coefficient of variation	8.38%
	Farming experience(years)	
4	Mean	13.57
	Standard deviation	4.430
	Coefficient of variation	32.65%
5	Household size(persons)	
	Mean	3.62
	Standard deviation	1.17
6	Coefficient of variation	32.32%
	Farm size(ha)	
	Mean	9.30
7	Standard deviation	4.94
	Coefficient of variation	53.12%

Field Survey, 2015

farming experience was 14 years, with about 43% in the class of 11–15 years. Households had a median of five persons, and average farm size among respondents was 9.3 ha.

Findings revealed that about 98% of the respondents were able to identify occupational related stressors. These included poor harvest anxiety, labor scarcity, unfavorable government policies, poor transport infrastructure, untimely access to farm inputs, poor market proximity, long hours of farm labor, poor access to credit facilities, and poor access to market information, among others (see Table 2). The study showed that about 80% of respondents thought agricultural stressors had affected them in a number of ways including intense headache, excessive tiredness, forgetfulness, inability to sleep regularly, back pain, loss of temper, relaxation problems, and excessive worry (see Table 3).

Further findings from the study are displayed in Table 4, which shows that most of the farmers were affected by the stressors, and they were able to ascribe these effects accordingly. About 98% of these farmers were yet to develop any structured means of coping with these stressors (see Table 5).

Discussion

The age distribution of farmers in the study indicates that most of the respondents were under the

Table 2. Identified agricultural stressors by crop farmers.

S/N	Stress Items (stressors)	Frequency				Mean	Remark
		SA	A	D	SD		
1	I am usually on farm for long hours and I work myself out	25 (35.7)	25 (35.7)	18 (25.7)	2 (2.9)	3.04	A
2	I am usually disturbed about how to secure seeds, fertilizers, and chemical for my farm	30 (42.9)	20 (28.6)	10 (14.3)	10 (14.3)	3.00	A
3	I am usually frustrated on how to secure financial support for my farm	42 (60)	25 (35.7)	3 (4.3)	0 (0)	3.55	SA
4	I always get worried on where am going to sell my farm produce	32 (45.7)	20 (28.6)	11 (15.7)	7 (10)	3.10	A
5	I am always disturbed on how to transport my produce to the market	41 (58.6)	23 (35.7)	6 (8.6)	0 (0)	3.50	SA
6	I get worried because I don't have access to market information on my produce	28 (40)	24 (34.3)	8 (11.4)	10 (14.3)	3.00	A
7	I get disturbed about the poor prices in market for my farm produce	51 (72.9)	19 (27.1)	0 (0)	0 (0)	3.72	SA
8	I get disturbed about weather related issues as regards my crops: Rains, floods,	30 (42.9)	27 (38.6)	10 (14.3)	3 (4.3)	3.20	A
9	I get worried about my crops, I am not going to have good harvest	40 (57.1)	20 (28.6)	7 (10)	3 (4.3)	3.38	A
10	I get disturbed because I do not see extension agents regularly to help me	28 (40)	20 (28.6)	11 (15.7)	11 (15.7)	2.92	A
11	I get worried because I don't have labour regularly for my farming activities.	30 (42.9)	25 (35.7)	10 (14.3)	5 (7.1)	3.14	A
12	I am usually worried about my farm because this land does not belong to me	25 (35.7)	22 (31.4)	17 (24.3)	6 (8.6)	2.94	A
13	I am usually not happy because, I am a farmer	25 (35.7)	22 (31.4)	13 (18.6)	10 (14.3)	2.88	A
14	I am usually worried that government policies do not favour farmers.	35 (50)	15 (21.4)	17 (24.3)	3 (4.3)	3.17	A
15	I am usually worried about the future of my farming business	25 (35.7)	25 (35.7)	10 (14.3)	12 (17.1)	2.96	A
16	I am usually worried about the costs of inputs such as fertilizer, labour, chemicals	49 (70)	18 (25.7)	3 (4.3)	0 (0)	3.66	SA
17	I am worried about Fulani herdsmen intruding my farm	38 (54.3)	22 (31.4)	10 (14.3)	0 0	3.40	A

Source: Field Survey, 2015: (Figures in brackets are the percentages of responses)

Table 3. Ascribed effects of stressors on farmers.

If yes, in what ways have you been affected by these stressors?		
Ascribed Stressor effects	Frequency	Percentage
Intense headache	66	94.0
Excessive tiredness	56	80.0
Forgetfulness	54	77.1
Inability to sleep regularly	50	71.4
Back pain	48	68.6
Loss of temper	47	67.1
Relaxation problem	45	64.3
Excessive worry	43	61.3

Field Survey, 2015

age of 40-years. This implies they are still very active, reflecting strength, vigor, and the likelihood to take risks and adopt innovation. Education has been seen as a tool for change, and the level of education has been linked to innovativeness of an individual. This study shows that the average number of educational years of the respondents was 14 years. With the 9–3–4 educational system in Nigeria, 9 years of education in the basic class, 3 years in the senior secondary, and 4 years in tertiary, totaling 16 years. The 14 year average of schooling years reported in this study shows that most of the respondents possessed tertiary education. The educational status of respondents shows they are literate and could easily engage information technology for improving themselves on stress related issues. Farming experience was expected to influence the acquisition of skills and

capability to adopt technological innovation in the production of crops. The study showed that the average farming experience was about 14 years, ranging from 4 to 20 years. The study shows that the average household size is four persons per household. The mean farm size among respondents was 9.3 ha. This demonstrates that most of the farmers are small holders.

Table 2 show that about 98% had been able to identify occupational stressors such as poor harvest anxiety, labor scarcity, poor transport infrastructure, poor access to credits facilities, unfavorable government policies, uncertain future for Nigerian agriculture, poor market proximity, insufficient funds, and poor access to market information among others. The study also shows that many of the stressors are linked to lack of resources.

This study identified long hours of labor as a stressor in the agricultural workplace. This study corroborated earlier study in England and Wales by Simkin et al., which reported 70% of farmers worked more than 10 hours a day, a practice that is unhealthy.³⁸ Study conducted by Katalin in Europe identified physical exhaustion leading to severe tiredness as major stressors. The respondents further admitted that this has affected their health adversely.³⁹ From the findings in this present study, it could be inferred that working long

Table 4. The intensity of the ascribed effects.

Stressor effects	Intensity of Effects			Mean	Remark
	Mostly affected(MA)	Occasionally affected(OA)	Not affected(NA)		
Intense headache	45	21	4	1.68	MA
Excessive tiredness	50	6	14	1.89	MA
Forgetfulness	42	12	16	1.78	MA
Inability to sleep regularly	40	10	10	1.80	MA
Back pain	47	1	22	1.93	MA
Loss of temper	20	27	23	1.43	OA
Relaxation problem	30	15	25	1.67	MA
Excessive worry	37	6	27	1.86	MA

Field Survey, 2015

Table 5. Response to stressors coping strategies.

Have you developed any planned coping strategies against these stressors?		
Response	Frequency	Percentage
Yes	1	1.4
No	68	97.1
Don't know	1	1.4
Total	70	100

Field Survey, 2015

hours leads to physical exhaustion leading to excessive tiredness, which respondents were able to identify as one of the effects of exposure to occupational stress. A study by Phelps in North Yorkshires showed that farmers' main stressors were government policy and legislation, financial problems, and time pressures.⁴⁰ This present study corroborated these findings, as unfavorable government policies and poor credit access in regard to financial concerns were identified as stressors. Other studies had suggested that financial issues are the greatest stressor for farmers, but that hazardous working conditions and geographical isolation are also significant concerns.^{41,42}

A study in London by Hawton et al. found that the majority of respondents worried about money. The authors further suggested that the blurred boundaries between farmers' home and working lives made it difficult to escape from occupational problems.⁴³ Research conducted in North Yorkshire by Raine, found that farmers perceived the occupation as becoming ever more stressful, and that key factors in this were paperwork and finances.⁴⁴ The main stressors for farmers identified in Booth and Lloyd's study were new legislation, paperwork and media criticism of agricultural communities.⁴⁵ Findings from a study by Deary et al., one of the larger-scale surveys of UK farmers, found that stress was linked to government

legislation and increased bureaucracy.⁴⁶ Workload intensity, the uncontrollable nature of certain aspects of farming (such as disease and seasonality), and insecure futures and finances were identified as major farm stress factors by HSE.¹³ The present study corroborated these findings by identifying poor harvest anxiety, unfavorable government policies, and unpredictable weather conditions as stressors to crop farmers. Unpredictable weather conditions are attributed to climate change impact, to which Nigeria has been identified as being vulnerable, since its economy is largely based on weather-sensitive agricultural productions systems.⁴⁷ Empirical evidence has shown that climate change is already affecting crop yields in many countries.^{44,48-50} This climate change effect will affect farmers' holistic well-being.

Furthermore, other agricultural stressors identified in this study that may be common to developing nations because of their developmental status include labor scarcity, uncertain future for the agricultural sector, poor agricultural extension services/contact, poor land availability, poor road infrastructure, unfavorable market prices, poor access to market information, poor access to credit facilities, high cost of farm inputs, poor market for farm produce (in this case farmers produced but do not have buyers leading to post harvest losses), and poor public perception for the agricultural occupation (farmers are perceived to be poor and uneducated in the Nigeria, since most farmers are peasants).

Poor labor availability or labor scarcity as a stressor to Nigerian crop farmers has been attributed to various "push factors" such as poverty and unemployment, poor infrastructures, crop failures, lack of farmland, famine, insurgence, and long work hours in farm work with lower wage

compared to other employment opportunities such as the motorcycle riding business, all leading to massive rural-urban drift of menial laborers in the rural areas.

Respondents identified the uncertain future of Nigerian agriculture as a stressor. This could be due to the neglect that the agricultural sector has suffered in recent times as a result of the nation's overdependence on oil, the major source of the nation's gross domestic product since its discovery some decades ago.

Poor access to agricultural extension service was also identified as a stressor to the Nigerian farming population, as studies in Nigeria have revealed that not providing sufficient agricultural information to farmers is a key factor limiting farmers' productivity and efficiency.⁵¹ This has been attributed to an insufficient number of extension agents. As revealed through agricultural development programs in 27 states of Nigeria, Gombe State has the highest ratio of extension agents to farm family of 1:826, while the ratio of extension agents to farm families in the Niger, Lagos, and Ebonyi States is in the neighborhood of 1:5000.⁵² With the prevailing statistics, information dissemination will be ineffective and poor agricultural extension contact will be a stressor to farmers.

Poor land availability for farmers in Nigeria could be a stressor due to land grabbing challenges, the land use act of the nation, and the land tenure-related challenges that farmers encounter in their farm operations. Poor road infrastructure is a major stressor for farmers, as the road networks are bad, which has led to high transportation costs. The poor road network has led to post-harvest losses for farmers, as such products attract unfavorable market prices. Poor market for agricultural produce was also identified as a stressor for farmers, because they are unable to add value to this product and, as such, are skeptical about where and how to sell their farm produce.

The public perception of an average farmer in Nigeria is one of poverty and rejection, even though the small-scale farmers produce the bulk of the food consumed in the country. Farmers are not respected and, as such, a poor public perception of the agricultural occupation was identified as a stressor to Nigerian crop farmers.

The rate of intrusion of herdsmen onto farm land is becoming alarming in Nigeria in recent times. This has contributed to farm stressors among Nigerian crop farmers. Studies have shown that intrusion of herdsmen onto farmland has contributed to crop yield reduction, decline in crop farmers' income, and displacement of farmers.^{5,53}

Farm stress has been identified as affecting a farmer's physical, social, and mental well-being. Further findings from this study show that about 80% of respondents believed agricultural stressors have affected them in a number of ways including inability to sleep regularly, relaxation problems, excessive tiredness, back problems, loss of temper, excessive worry, and intense headaches. These findings are in line with previous studies. The UK-HSE had earlier found that the most common effects of farm stressors on farmers were a lack of sleep, back problems, worrying about work, irritability, and feeling down.¹³ Smith *et al.*¹³ found that one in five of its respondents were suffering from high levels of occupational stress, the effects of which were manifest in terms of health complaints, disrupted family life, and elevated levels of sick leave and workplace accidents. Corroborating this, a Canadian survey by Walker and Walker found that farmers scored higher than non-farmers on a range of stress-related symptoms, including chronic tiredness, difficulty relaxing, forgetfulness, loss of temper, problems concentrating, back pain, and sleep disruption.⁵⁴

Sadly, with the effects of farm stress on well-being, most of the respondents (about 98%) are yet to adopt or develop any formal means of coping with the stressors. This finding could be due to poor access to stress management information by crop farmers in Nigeria.

Conclusions and recommendations

Work-related stress is a common health hazard in Nigerian agricultural work-places. This is probably due to the complex nature of the work involved and the way agriculture is practiced and perceived in the country. Agricultural stressors affect farmers' total well-being. Removal of stressors eliminates stress; however, stressor identification is the first step in designing stress management strategies. Some of

the stressors identified by respondents were development, economic, environmental, governmental, socio-cultural, and educational/information based, among others. Most of these stressors may be due to failure on the part of major stakeholders of the industry in carrying out their various responsibilities. Farmers have been able to identify these stressors: engaging a stress management oriented attitude is the best agricultural health practice that will help them in managing agricultural stress. This study makes the following recommendations:

- a. At present in Nigeria, the government, foreign development partners, and the private sector have been the major stakeholders partnering to support agricultural productive activities. On this basis, the government and the private sector should embark on a massive stress management campaign and surveillance among farmers to improve mental health.
- b. These stakeholders should help crop farmers in their challenged areas including favorable agri-policies, infrastructure provision, credit facilities, input access, and stock grazing reserves for herders and prompt extension services.
- c. Due to the intensity of the ascribed stressor effects, there should be a functional integration of mental health focused agricultural health in primary health care by the Nigerian government.
- d. Farmers should engage in good time management strategies, as good time management practices and planning can reduce workplace stress.

Limitations

Conceptualizations of stress and the stress response have varied in form and context throughout the centuries. Workplace stress and stressors are quite difficult to measure; therefore, this study is limited by the mono-method approach (cross-sectional design) engaged in the study. Small sample size with perceived causes of stress and ascribed effects of stress among farming respondents that are self-reported also constituted a

limitation. We also understand linking stressors to health effects could be a limitation in the study. Better approaches, like an experimental method of randomized control trials with larger sample size collecting longitudinal data, could provide robust findings on the subject matter. This is suggested for further studies on farm workplace stress in developing nations.

Conflicts of interest

All authors have no conflicts of interest to declare.

Acknowledgments

The authors wish to acknowledge the support received from the research assistants and farmers who participated in the study.

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