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Agricultural Producers' Perceptions of Stressors: A Study on Controllability and Persistency

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Abstract

Background: Farm stress negatively impacts agricultural producers' (APs) physical and mental health. The average age of agricultural producers has increased in every United States Department of Agriculture agricultural census since 1945, and the stressors may be either or both caused or exacerbated by increasing age. The Cooperative Extension Service is well known for working with APs and is well equipped to address these concerns for this aging population.

Purpose: To better understand farm-related stressors, this study examines APs' and extension agents' perceptions of major stressors faced by APs.

Methods: Focus groups were held to identify stressors and determine the controllability and persistency of those stressors. The mean age of the APs in the study was 56.3 years, reflecting the mean age of APs nationally.

Results: Results determined perceived controllability and persistency of stressors were similar among both groups.

Conclusions: This data provides a foundation for continued education and programming on farm stress and may promote a more directed focus on farm and resource management among extension agents as they work with APs.

Keywords: agricultural producers, aging, stress, extension service

Agricultural producers (APs) have extraordinary and unique challenges related to their occupation. Furthermore, the average age of APs has been steadily increasing since 1945, and aging may interact with these challenges in a way that requires special attention.

Stress and Mental Health

Stress is a non-specific reaction to the demands placed on the body by stimuli (Selye, 1978). These stimuli are known as stressors. The way in which people perceive and respond to stressors can vary greatly due to various personal factors. For example, while one person may not produce a large response to a stressor, that same stressor may be detrimental to another person's physical and mental well-being (Shutske, 2017). Stress can cause physiological effects such as an increased risk of chronic illnesses, including cardiovascular disease, and an increase in occupational risks (Larzelere & Jones, 2008). Stress may also lead to mental health challenges like anxiety and depression. These subsequent mental health challenges may contribute to habits of maladaptive coping mechanisms including substance use disorder (Avison & Gotlib, 1994).

The negative effects of stress are particularly harmful within rural, agriculturally engaged populations. When juxtaposed with the general population, farming and agriculturally based occupations see higher instances of suicide, depression, anxiety, and emotional distress as a result of farm stress (Cuthbertson et al., 2021).

Aging Agricultural Producers

Since 1945, the average age of APs has been increasing. The average age of farmers has increased by nearly ten years since 1945, with the average age of farmers in 1945 being 48.7 years and in 2022 being 58.1 years. As reported in Buys, Robertson, and Green (2023), an example of why this is troubling can be found in the reality that among the leading causes of death for APs are transportation incidents, such as tractor overturns and roadway crashes; interpersonal or animal violence; and slips, trips, and falls (U.S. Bureau of Labor Statistics, 2023). Furthermore, 65% of these deaths in 2021 were among workers 55 and older (U.S. Bureau of Labor Statistics, 2023). Also, these physical issues are compounded by the mental challenges associated with the uncertainty of working as an AP.

Partnerships to Address AP Challenges

Recent investigations have led to partnerships among organizations, including the United States Department of Agriculture's (USDA's) Cooperative Extension System, Farm Credit, American Farm Bureau Federation, and the National Farmers Union, to offer online programming aimed at building resiliency among APs. These programs aim to equip APs with the tools and resources necessary to recognize and combat the stress associated with farming to emphasize the prevention of harmful conditions initiated by stress (Karbowski et al., 2020).

Previous literature has identified key stressors faced by APs. This list includes government regulations, weather, labor shortages, and financing availability (Keeney et al., 2021). Another study credited these stressors with prompting farmers to exhibit more intense feelings of fear and worry (Garland & Niewolny, 2020). Moreover, the COVID-19 pandemic has exacerbated the feeling of stress in agricultural communities, increasing concerns regarding individual and labor health and a loss of available industry infrastructure (Chitra & Gopinath, 2021). While farmers face both persistent and temporary stressors, temporary stressors such as COVID-19 have put

intense strain on farmers and farm families and have affected their access to proper medical care (Becot et al., 2020).

The Cooperative Extension Service (CES) has a long history of education, outreach, and innovation with over 100 years of experience helping American farmers in their industry (USDA, n.d.). CES provides community-based resources to serve as an aid for problems unique to rural communities. CES works to prevent, mitigate, and solve complex issues in rural populations, such as mental health challenges (Coward et al., 1986). Furthermore, locally-focused organizations, such as Mississippi State University Extension Service (MSU-ES), play a role in building resiliency among APs in Mississippi regarding stress coping mechanisms and mental health education. These organizations seek to educate rural populations on mental health and promote positive mental health. Social support programs utilized by Extension Service aimed at reducing farm stress may be useful in providing APs with the tools to manage stress (Schulman & Armstrong, 1990).

Study Purpose

This study aims to identify the perceived controllability and persistency of stressors identified by APs to provide a baseline for informed extension programming. Upon analyzing APs' and extension agents' perceptions of farm stress, improvements may be made to update current farm stress management trainings and curricula utilized by Extension Service. This study aims to generate a more comprehensive list of stressors affecting APs in rural Mississippi. It is reported that APs are at higher risk of suffering from long-term stressors, often outside the purview of their control (Thelin & Donham, 2016). However, the data of this study may enable Extension Service to more accurately implement programming to increase education regarding appropriate coping mechanisms that would allow APs to best manage stress faced in the agricultural industry.

Methods

This interpretive qualitative study used focus groups to gain a deeper understanding of perceived controllability of farm stressors among APs and MSU-ES agents. Qualitative study designs are widely used to better understand topics that quantitative designs are not sensitive enough to tackle (Hampshire et al., 2014; Silverio et al., 2022; Wahab, 2003). A total of eight focus groups were conducted (n = 48). Four focus groups consisted of only APs (n = 21), and four of the focus groups consisted of only MSU-ES agents (n = 27). APs were recruited by MSU-ES agents, letters, emails, and telephone calls. MSU-ES regional coordinators recruited MSU-ES agents to participate in focus groups. The focus groups were held between November 2020 and February 2021 at a place and time convenient for most participants. Each focus group lasted approximately 90 minutes. Participants were provided with one meal and an insulated tumbler for participating in the focus group. The moderator and co-moderator used a focus group guide developed by researchers to lead the focus groups. Also, basic demographic information (i.e., race, birth year, sex, ethnicity, education, and annual household income) was collected from focus group participants. This guide followed Kruger's *Moderating Focus Groups* and provided detailed notes and scripts for the moderator and co-moderator (Kruger, 1998).

The focus group guide included 10 questions to explore agricultural producers' and MSU-ES agents' perceptions of the current farming situation, farm stressors, the opioid epidemic in farming communities, and farm financial management training. Written consent was obtained from all participants before starting each focus group. Focus groups were digitally recorded and sent to Same Day Transcriptions to be transcribed for data analysis. Using a general thematic analysis approach, four team members met regularly to identify common themes and synthesize participant responses to focus group guide questions. Braun and Clarke's "Phases of Thematic Analysis" were used as a guide for data analysis (Braun & Clarke, 2006). The researchers used QSR International's NVivo and Microsoft Excel to manage the data and assist with data analysis. Focus groups were conducted until saturation was met. Additional details about the methodology of these focus groups can be found in Meadowcroft et al. (2023). The Institutional Review Board at Mississippi State University deemed this study Not Human Subjects Research.

Results

Among the APs, the mean age was 56.3 years, which approximated that of APs across the nation in the latest USDA Agricultural Census (2024; Zuluf, 2024). Figure 1 displays the stressors identified by both APs and MSU-ES agents. Most perceived stressors identified by both APs and MSU-ES agents were identical. However, three stressors were not shared among groups. MSU-ES agents identified technology and broadband access as a stressor, whereas APs did not. On the other hand, APs noted farm operations and loss of small farms as significant additives to stress, while MSU-ES agents did not identify these stressors during the focus groups.

When asked about the current situation of stress on the farm, one participant said,

> … I've always said farmers are the biggest gamblers in the world; they're gambling everything now every year. But I don't think they've ever had to deal with this many things in the same year – they've always had two or three, something would blow up, but this year is just like one deck was stacked against them …

It is clear that APs face multiple stressors with variable controllability and persistency, many of which have large implications for their livelihood. Identifying specific stressors, their controllability, and their persistency may provide actionable steps for utilizing programming aimed at decreasing maladaptive behaviors and increasing resiliency among APs.

Figure 1
Perceived Stressors Identified by Both APs and MSU-ES Agents

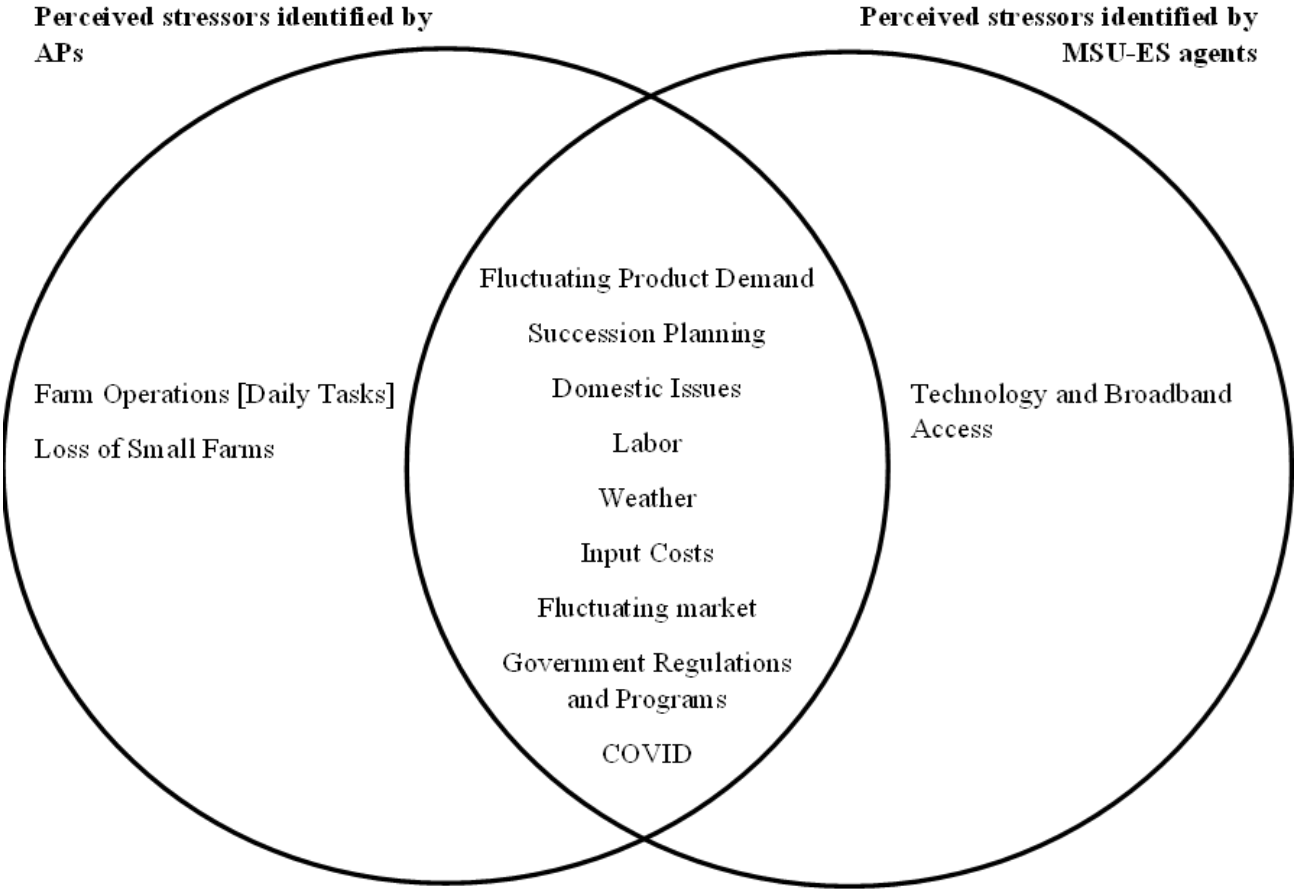

Table 1 outlines participants' reported controllability and persistency of each identified stressor. APs and MSU-ES agents responded similarly when asked about perceived controllability and persistency. Of the stressors identified by both groups, three discrepancies presented among controllability ratings while the rest remained the same. APs rated succession planning as somewhat controllable, while MSU-ES agents rated succession planning as controllable. This issue is of particular concern for aging farmers who may wish to retire but have limited options for leaving their farming operation. APs rated government regulations and programs as uncontrollable, and MSU-ES agents rated the same stressor as somewhat controllable. APs did not identify technology and broadband access as a stressor, so they did not rate that stressor. However, MSU-ES agents rated technology and broadband access as uncontrollable. Notably, APs only perceived farm operations as controllable and all other stressors as somewhat controllable or uncontrollable. APs perceived succession planning as somewhat controllable, although one participant noted,

> And you know, being a business, a lot of time people bring in their kids—I know this firsthand—your child coming home wanting to farm and the farm is not in great shape, the stress. That is tremendous stress on the father. His child wanting to farm on the family farm and not knowing if they are going to make it …

This experience highlights the stress placed on farmers when considering passing the farm to the next generation and continuing the family farm.

MSU-ES agents also only perceived one stressor to be controllable, succession planning, while perceiving the rest as either somewhat controllable or uncontrollable. One participant noted,

> Uncontrollable [commodity prices]. We can change our crop mix; if soybean prices are low, you might want to plant more rice, but you really don't have an option; eventually, you need a rotation. So, you cannot control it.

MSU-ES agents perceive fluctuating product demand and fluctuating markets as uncontrollable, which influence commodity pricing.

APs only identified weather and COVID-19 as temporary stressors and identified the 10 other stressors discussed in the focus group as persistent. MSU-ES agents identified COVID-19 and technology and broadband access as temporary stressors. A participant shared, "With me, with the pandemic, I work a lot of social events and by not having these events I couldn't move a lot of my goods. Like festivals and even the farmers markets." This example sheds light on the stress of closure of events due to the worldwide COVID-19 pandemic. Another participant stated,

> What else? Well, it comes out of the pandemic there were some supply issues with chemicals—and even parts. I know someone, a tractor broke down, they couldn't get a part because the company shut down for a little while. And mentioning chemicals, let's just go and throw the bullet in there, the dicamba [selective herbicide] issue.

Identified as a temporary stressor, COVID-19 has caused considerable impacts to the supply chain of necessary chemicals and equipment needed for farm operations, adding stress to farmers and ranchers. It is important to note that while this stressor was identified as temporary, the effects were no less impactful for APs.

Table 1

The Perceived Controllability and Perceived Persistency of Stressors Experienced by APs as Identified by MSU-ES Agents.

Perceived Stressors	Perceived Controllability		Perceived Persistency	
	APs	**MSU-ES agents**	**APs**	**MSU-ES agents**
Fluctuating product demand	U	U	P	P
Public perception of agriculture	SC	SC	P	P
Succession planning	SC	C	P	P
Domestic issues	SC	SC	P	P
Labor	SC	SC	P	P
Weather	U	U	T	P
Input costs	SC	SC	P	P
Fluctuating market	U	U	P	P
Government regulations and programs	U	SC	P	P
COVID-19	U	U	T	T
*Farm operations	C	N/A	P	N/A
*Loss of small farm	U	N/A	P	N/A
**Technology and broadband access	N/A	U	N/A	T

Note. *Stressor was identified by APs only; ** Stressor was identified by MSU-ES agents only; Uncontrollable (U); Somewhat Controllable (SC); Controllable (C); Persistent (P); Temporary (T)

During the focus group, Extension agents reported confidence in the ability of available extension resources to relieve stress from APs dealing with some of the identified stressors. One participant noted, "The Extension Service is a resource because we can educate the farmers on the resources that we know are available to them."

Discussion

Farm stress is a complex issue that requires a complex solution. APs believe they have the power to somewhat control stressors, but they find it difficult with the lack of mental health resources available in rural Mississippi. These resources are increasingly important as the average age of farmers increases and mental health demands both compound and are compounded by the physical demands of farming.

Overall, MSU-ES agents and APs perceive the controllability and persistency of stressors similarly. This provides insight into MSU-ES agents' ability to identify controllable factors and continue offering services, training, and other resources for APs to deal with farm stress. Consequently, stressors identified by both groups as uncontrollable highlight a need for enhancements to access to mental health services and healthy coping mechanisms to decrease maladaptive behaviors. This data can be used to establish an action plan that promotes partnership between MSU-ES agents and APs to temper the effects of uncontrollable or persistent stressors most effectively.

While stress is widely evident in the agricultural industry, there are actionable steps that can be taken to mitigate the effects of farm stress on the physical and mental well-being of APs. Identifying and categorizing the perceived controllability and persistency of the stressors faced by APs can promote specific programming that is effective at building resiliency and healthy coping mechanisms according to the particular context of the issue. APs disproportionately suffer from chronic stressors, some completely out of their individual control (Thelin & Donham, 2016). With farmer suicide rates double that of the general population (Peterson et al., 2020), it is crucial to provide coping mechanisms and stress management tools to APs in rural Mississippi. Professionals working hand in hand with APs, such as MSU-ES agents, can create safeguards to foster mental health, increasing their mental health literacy through informed programming (Cuthbertson et al., 2022). It is essential, as well, for health care providers to understand these challenges and incorporate approaches in their practices that address these needs, mindful of the aging nature of APs.

The data analyzed in this study might be useful in guiding the design, implementation, and evaluation of resiliency-based stress management programs executed by extension professionals. However, this study is limited by the scope of the study design. This study does not address stressor prevalence and its associated controllability and persistency. Nor does this study analyze the specific effects each stressor induces among APs. Social factors encountered during focus groups, such as recognizing other participants, may have contributed to participants being less likely to share opinions within the focus group. Furthermore, this study was conducted during a presidential election year, which may have contributed to social factors limiting transparency during the study.

Further research is needed in similar rural populations to better understand the multifaceted issue of farm stress, including how aging challenges function as an intersectional factor with the other issues. Different commodity groups should also be explored for a more holistic view of stressors dealt with by APs across the agriculture industry. One-on-one interviews could lead to a deeper understanding of the mental health challenges farmers face daily due to farm stress. Future studies are needed to assess the severity of individual stressors to provide a clearer picture of the stress farmers and ranchers face within rural populations across Mississippi.

Conclusion

APs and MSU-ES agents have similar perceptions of farm-related stressors and the level of control over these stressors. Since the perceptions of APs and Extension agents are aligned, it is essential for Extension agents and APs to collaborate further in addressing farm stress and to incorporate an understanding of the unique needs of this aging population. While Extension agents may not be able to address uncontrollable stressors like weather and changing markets, they do have the tools to tackle controllable stressors such as succession planning, farm financial management, and daily farm operations, each of which can alleviate some of the stress of this aging population. Thus, Extension agents can refocus their efforts on addressing controllable stressors and integrating coping skills for APs into their programs to help mitigate the impact of uncontrollable stressors on APs.

Disclosure
David R. Buys is an editor of the *Journal of Public Health in the Deep South*.

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