Farmer's Mental Well-Being Project:
Statewide Survey Report

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About the Georgia Rural Health Innovation Center

In 2018, Georgia lawmakers dedicated special funds to establish a new Rural Health Innovation Center tasked with confronting the complex health care challenges and wellness disparities facing rural communities. Mercer University School of Medicine (MUSM) was awarded the grant funds in 2019 and formally established the Georgia Rural Health Innovation Center on its Macon campus. MUSM boasts a longstanding commitment to serving rural Georgia's health needs, with a mission to educate physicians dedicated to tackling the health challenges in rural Georgia. The Rural Health Innovation Center serves as a critical resource to rural communities to improve access and effectiveness of health care by offering research, collaboration, and training opportunities.

About the Georgia Foundation for Agriculture

The Georgia Foundation for Agriculture is a 501c3 non-profit organization. They are developing a pipeline for Georgia's next generation of farmers and agricultural leaders. Through early exposure to agriculture, classroom learning, higher education, farm-based mentorship, and professional learning, their programs provide a structured path that fosters growth and sparks passion in agriculture during one's educational journey.

Acknowledgments

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EXECUTIVE SUMMARY

Agriculture is Georgia's largest and oldest industry. With nearly $70 billion contributed annually, The Farm Bureau calls it the foundation of the state's economy. Georgia farmers lead the nation in the production of peanuts, chickens, pecans, blueberries, and spring onions. Farming is a stressful occupation that is associated with increased levels of anxiety and depression; it consistently ranks as having the highest death rate caused by stress-related and psychiatric conditions. Georgia farmers die by suicide at higher rates than non-farmers in the state.

In order to develop solutions to prevent mental health crises and address the mental health and overall well-being of Georgia's agricultural communities, there is a need for additional research on farm-related stressors. The Georgia Foundation for Agriculture partnered with the Georgia Rural Health Innovation Center at Mercer University School of Medicine to inventory the mental well-being, stressors, and coping mechanisms of farm owners, farm managers, farm workers, and spouses.

This report describes the stressors a Georgia farmer feels, how much time they spend worrying, how much stress, negative emotions, and anxiety they experience, health issues they have, and the coping mechanisms they use to alleviate stress. Here, the more general term "farmers" includes farm owners, farm managers, and farm workers.

Preventative measures to avoid increased levels of anxiety and depression are essential to overall well-being. Examples of such measures are the provision of mental health services, mental health educational programs, practical support, and screening for mental health concerns (Sanne et al., 2004). Educating farm communities on healthy coping mechanisms to alleviate stress could also prove crucial to counter mental health crises.

Based on the literature, we devised an inventory of the issues at hand in the agribusiness of Georgia by developing a survey of demographics, stressors, current health issues, coping mechanisms, mental health, and healthcare access.

Common stressors impacting the lives of farm owners and farm workers include unpredictable weather, the threat of physical injury, long working hours, crop diseases, isolation, and financial uncertainty (Ellis & Gordon, 1991). Additionally, research suggests stressors such as interpersonal conflict, health issues, and substance use contribute to the high suicide rate among farmworkers (Scheyett et al., 2019).

Exposure to high stress over long periods of time negatively impacts physical and mental health, which can lead to the development of stress-related diseases and disorders (Kubo et al., 2015). Farming is a stressful occupation that is associated with increased levels of anxiety and depression (Sanne et al., 2004). Farmers had a higher prevalence of depression when compared to non-farmers, with male farmers having higher levels of anxiety (Sanne et al., 2004).

Based on literature and feedback from farmers, we devised a list of 27 common, agricultural-oriented stressors. These stressors are events, environments, or experiences that a farmer may find demanding, challenging, or a threat to their livelihood, family or safety. To measure the impact of the stressors, we asked participants how much time they spend per day worrying about the items on the list.

The Perceived Stress Scale (PSS) is a self-report measure intended to capture the degree to which people perceive situations in their life as excessively stressful relative to their ability to cope (Taylor, 2015). It is one of the most commonly and widely used measures of perceived stress (Ingram et al., 2016). The PSS was intended to be adapted broadly to numerous uses because item content on the scale is not bound to any specific situation or event (2016). Based on these factors, we believe the PSS is the best scale to evaluate the stress measures of farmers.

Coping mechanisms are the outlets people use to deal with stress. We asked our participants what they enjoy doing when they are feeling stressed, anxious, or depressed. Using positive coping mechanisms can help improve mental well-being. Negative coping mechanisms, like alcohol or drug use, can have a long-term negative effect on mental well-being, even if the person feels better initially. To measure the use of coping mechanisms, we provided a list of commonly accepted positive and negative activities and asked

participants to choose all that they engage in to alleviate stress. Examples of positive coping mechanisms are exercising, talking with friends and family, and praying or engaging in religious activities. Examples of negative coping mechanisms are hit or kick things, over-the-counter drugs, and hit or injure myself.

In psychology the concept of affect refers to feelings and emotions, both positive and negative. Affect is an indicator of mental well-being. We measured affect with the **P**ositive **a**nd **N**egative **A**ffect **S**chedule or PANAS. The PANAS lists positive and negative words (e.g., interested, distressed, excited, upset) and asks participants how often they experience the feeling or emotion.

There is a connection between physical and mental health (Ohrnberger et al., 2017). To understand the full picture of health, we asked participants to report health conditions (e.g., hypertension, diabetes, anxiety, muscle or joint disease) and their ability to access healthcare providers.

This document reports on the online state-wide survey which ran between January and April 2022, after having been approved by the Mercer University IRB. The survey was enhanced after a successful pilot survey in 2021 and was created in Qualtrics. Our focus was on farmers, so the built-in logic of Qualtrics allowed us to set up a branching logic: if a farm owner indicated any other options, they were classified as farm owner. Farm managers were classified as such if they had farm manager or any combination without farm owner in it. Farm workers were categorized as farm workers if they indicated to be one, but not a manager or owner. In addition, spouses were categorized as spouses if they only indicated they were spouses. The data was analyzed in JMP Pro 16.0. The survey was anonymous, took an average of 16.8 minutes to complete, was available in English and Spanish, and had an incentive of a $10 gift card. The recruitment took place via ads in newspapers and printed media, requests via a state network of commodity and farming groups, and social media.

By closing day, 1651 farmers, their spouses, and other agricultural workers completed the survey. Of these 1651 participants, 12% were spouses, and 3% were other farming-based professions (e.g., accountants). We received responses from nearly every

county in the state. People who own farms in 148 counties, farm managers that oversee farms in 126 counties, and farm workers in 116 counties across the state completed the survey. Participants of this survey closely align with the most recent Georgia Agricultural Census (2017). Results of the survey are reported in detail by factors like, region, age of the farmer, generational status, farmer role, and various farm work descriptors.

Noteworthy highlights are

- **Suicidal Ideation and Negative Affect**
    - 29% of farmers report thinking of dying by suicide at least once per month. 42% of all farmers have thought about dying by suicide at least once in the past 12 months.
    - 47% of farmers report experiencing loneliness at least once per month.
    - 49% of farmers report being sad or depressed at least once per month.
    - 39% of farmers report feeling hopeless at least once per month.

NOTE: Throughout this survey, we provided the contact information for the National Suicide Prevention Lifeline (800-273- 8255) and the Georgia Crisis and Access Line (800-715-4225)

- **Generational Differences**
    - First-generation farmers reported experiencing suicidal ideation than generational farmers. 46% of first-generation farmers think about dying by suicide at least once per month, compared to 12% of generational farmers.
    - 61% of first-generation farmers thought about dying by suicide in the past 12 months. 10% of generational farmers thought about dying by suicide in the past 12 months.
    - 9% of first-generation farmers think about dying by suicide daily. 1% of generational farmers think about dying by suicide daily.
    - First-generation farmers report higher stress scores than generational farmers. They also reported lower use of coping mechanisms.
    - The Silent Generation (1928 - 1945) and Baby Boomers (1946-1964) are less likely than other generations to seek mental health care.

- **Stress**
    - The average PSS of all farmers is 18, indicating that the average farmer experiences moderate stress. 82% of participants reported scores in the moderate stress category. However, based on the literature, we expected a more even distribution between the three categories.
    - Farm owners report the lowest stress scores. Farm workers report the highest stress scores.
    - District 10, in the Southeast part of the state, reports the highest levels of farmer stress regardless of role. Please see the map on page 13.
    - Farmers who did not have access to healthcare services, food and groceries, recreational activities, or basic personal care all had significantly higher stress scores than those farmers who do have access.
- **Job Satisfaction**
    - 58% of the spouses of the farm workers are unhappy being a spouse of a farm worker at least once per month or more.
    - 55% of farm workers are unhappy being a farm worker at least once per month or more.
    - 44% of farm owners and farm managers are unhappy with their role on the farm at least once per month.
    - The spouses of farm owners and farm managers are the least unhappy in their role, with only 27% being unhappy at least once a month or more.
- **Stressors**
    - 61% of farmers were worried, at least moderately, about the weather and its effect on the farm and balancing home and work life.
    - Farm owners reported experiencing less stress than farm managers and farm workers. They were most stressed about succession planning and COVID-19.
    - Farm managers reported the most stress when thinking about saving for retirement, which is significantly higher than farm owners and farm workers. They were also concerned about unexpected financial burdens. Farm managers reported that possible changes to farming policies and laws more stressful than farm owners and farm workers. Over half of farm managers reported worrying about their alcohol use.

- Farm workers were more worried about obtaining certain operation certifications than farm owners and farm managers. They were also more concerned about catching COVID-19.
- First-generation farmers systematically reported worrying more intensely about almost all stressors than generational farmers.

- **Healthcare Access**
  - Most farmers reported not being able to access a psychologist (telephone, online, or in-person).
  - Farm managers and farm workers had significantly less access to healthcare than farm owners.
  - About 60% of farmers do not have access to basic medical care.
  - More than half of farmers do not have health insurance of any kind.

The Farmer Mental Well-Being study confirmed that farming is a stressful occupation; through this work, we could identify the stressors that most impact farm owners, farm managers, and farm workers in the state. Exposure to high stress over long periods of time negatively impacts physical and mental health, which can lead to the development of stress-related diseases and disorders (Kubo et al., 2015).

Many of Georgia's farmers often experience thoughts of dying by suicide, depression, sadness, hopelessness, and dissatisfaction with their role as a farmer. Role differences between farmers exist throughout the results. In addition, there are important generational differences that need to be better understood. Being a first-generation farmer came with not only higher stress than generational farmers, but also a markedly higher rate of suicidal ideation.

There is increased attention on mental health by policymakers both national and state. Our study illustrates a critical need for research and interventions related to farmers' mental health. Additional data from research studies like this would help target initiatives to maximize the impact of mental health services for farmers. We urge a community-level, family-oriented approach with additional emphasis on first-generation farmers.

BACKGROUND

Agricultural business is the leading industry in Georgia and includes over 41,000 farm operations within the state (USDA, 2021). Agribusiness impacts the lives of many Georgians, with one in seven working in agriculture, forestry, or related fields (GDA, 2021). Many agribusiness occupations are known for being strenuous and stressful (Ellis & Gordon, 1991). Research has proven that elevated levels of stress are associated with mental health issues (Yazd et al., 2019). Out of 130 different occupations in the US, farming had the highest rate of death caused by stress-related conditions and psychiatric disorders, as well as the third-highest suicide rate of all occupations (Yazd et al., 2019; CDC, 2018).

In the state of Georgia, the suicide rate among farm workers is 50.7 per 100,000 compared to 14.9 per 100,000 for the overall population of workers (USDA, 2020). Although there is published research on the mental and physical health of farmers and farmworkers in rural Georgia, it is limited because most of it is focused on farmer suicide. In order to develop solutions to address mental health and overall well-being to prevent mental health crises, there is a need for additional research on Georgia-specific farm-related stressors. Due to the potential exacerbation of farm-related mental health issues caused by the global pandemic and challenges associated with climate change, the need for this research is particularly urgent.

This project is based on the concept of farmer mental well-being. Farmer is a term used to refer to all types of agricultural workers, including ranchers. Mental well-being is a term that conveys a more holistic view of mental health and has been found to resonate with rural residents in the Southeastern United States (Crowe, 2019). In general, mental health is defined as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2020). More specifically, the term "good" mental health has been defined as "a state of well-being that allows an individual to cope with the normal stressors of everyday life and remain productive (Fusar-Poli et al., 2020). Coping mechanisms are defined as "deliberate, conscious efforts to control and adapt to stressors" (Gavin et al., 2015).

The lack of access to mental health services is a significant barrier to farmers and farmworkers seeking professional mental health support. Many farms are located in rural areas, where accessing a mental health facility can be especially difficult due to distances to the nearest facility or the lack of a facility altogether (Bjornestead et al., 2019). For many, traveling long distances to seek support may be inconvenient or impossible, ultimately deterring mental health support-seeking behaviors. Many rural Georgia counties are without mental health facilities and rely on distant facilities for care.

According to a study in a rural area in North Carolina, the most reported barrier to accessing mental health services was the personal belief that "I should not need help" (Brenes et al., 2015). Additional barriers impacting individuals' access to mental health services include mistrust of providers, stigma, embarrassment, cost, and distance (Brenes et al., 2015). These beliefs may be exacerbated in agricultural communities where farmers and their families are valuing independence and self-reliance (Key, 2005).

Georgia, like other US states, relies heavily on immigrant farmers (USDA, 2018). Immigration status, especially for people who are undocumented, may be a barrier to seeking care. In 2016, the National Agricultural Workers Survey found that 50.1% of US farmworkers were foreign-born or undocumented immigrants (DOL, 2016). Moreover, the 2018 American Community Survey found that 57% of US farmworkers were Hispanic and of Mexican origin.

Nearly half (48%) of US farmworkers did not have a high school diploma or GED equivalent (Census Bureau, 2018). Those factors are associated with low health literacy, language barriers, and fear of deportation. When compounded it is challenging for farmers to seek professional mental health support.

DEMOGRAPHICS

The following section will describe the sample's demographics (roles, gender, age, education, household income, marital status, family size, and immigration status). We will then compare the key demographics with the latest demographics obtained from the

Agricultural Census (or Ag Census)(2017). Then, we will describe the demographics of farm owners, farm managers, and farm workers separately.

Demographics of the Sample

The sample consisted of 1,651 farmers and spouses of farmers. The largest proportions of the participants were farm owners (N=623; 38%) and farm workers (N=489; 30%). Spouses make up 12% of the entire sample, but our focus is on farm owners, farm managers, and farm workers as the largest groups for analysis. Survey participants were asked to select the role that best indicated their position on the farm. Some farmers chose multiple roles, for example, farm owner and farm worker. In these cases, the farmer was classified as a farm owner. The same went for spouses. Those who said they were both a farm worker and a spouse of a farm worker were classified as farm workers.

Role of the participants	Count	Percent
Farm owners	623	37.8%
Farm managers	312	18.9%
Farmworkers	489	29.6%
Spouses	194	11.8%
Other	32	1.9%
Total	1650	

There was a larger proportion of males (N=998; 61%) compared to females. Four participants identified as gender diverse. Farm owners had a larger proportion of men (70%) than farm workers (66%). The average age of the participants was 44.0 (± 12.2) years old. Farm owners (49.9 ± 13.7) were on average older than farm managers (41.7 ± 8.3). Farm managers were on average older than farm workers (38.7 ±7.8). The spouse of a farm owner or farm manager is on average older (48.4 ± 14.3) than the spouse of a farmworker (39.6 ± 11.8).

The most common educational category was "Some college, no degree" (27%), and 46% of participants had completed an education level of vocational certificate/trade school or higher.

Education level	Count	Percent
None	1	0.1%
Primary school: 1st - 6th grade	31	1.9%
Secondary school: 7th - 11th grade	86	5.2%
High school graduate	332	20.2%
Some college, no degree	438	26.6%
Vocational Certificate/Technical/ Trade School	207	12.6%
Associate degree	146	8.9%
Professional degree	102	6.2%
Bachelor's degree	205	12.5%
Master's degree	65	4.0%
Doctoral degree or equivalent	32	1.9%
Total	1645	

The majority (89%) of the sample was married or living with a partner.

Marriage status	Count	Percent
Single, never married	80	4.9%
Married	1376	83.6%
Divorced	70	4.3%
Widowed	30	1.8%
Living with partner	87	5.3%
Other	2	0.1%
Total	534	

Over two-thirds (69%) had children living in the household, with the majority having one or two children (85%).

Children in household	Count	Percent
1	632	56.2%
2	326	29.0%
3	145	12.9%
4	20	1.8%
5	0	0.0%
6	2	0.2%
Total	1125	

The median household income for Georgia in 2019 was $58,700 per year (Census, 2020). Less than half (45%) of the survey participants reported making less than the Georgia median, meaning that 55% of participants made more than the state average.

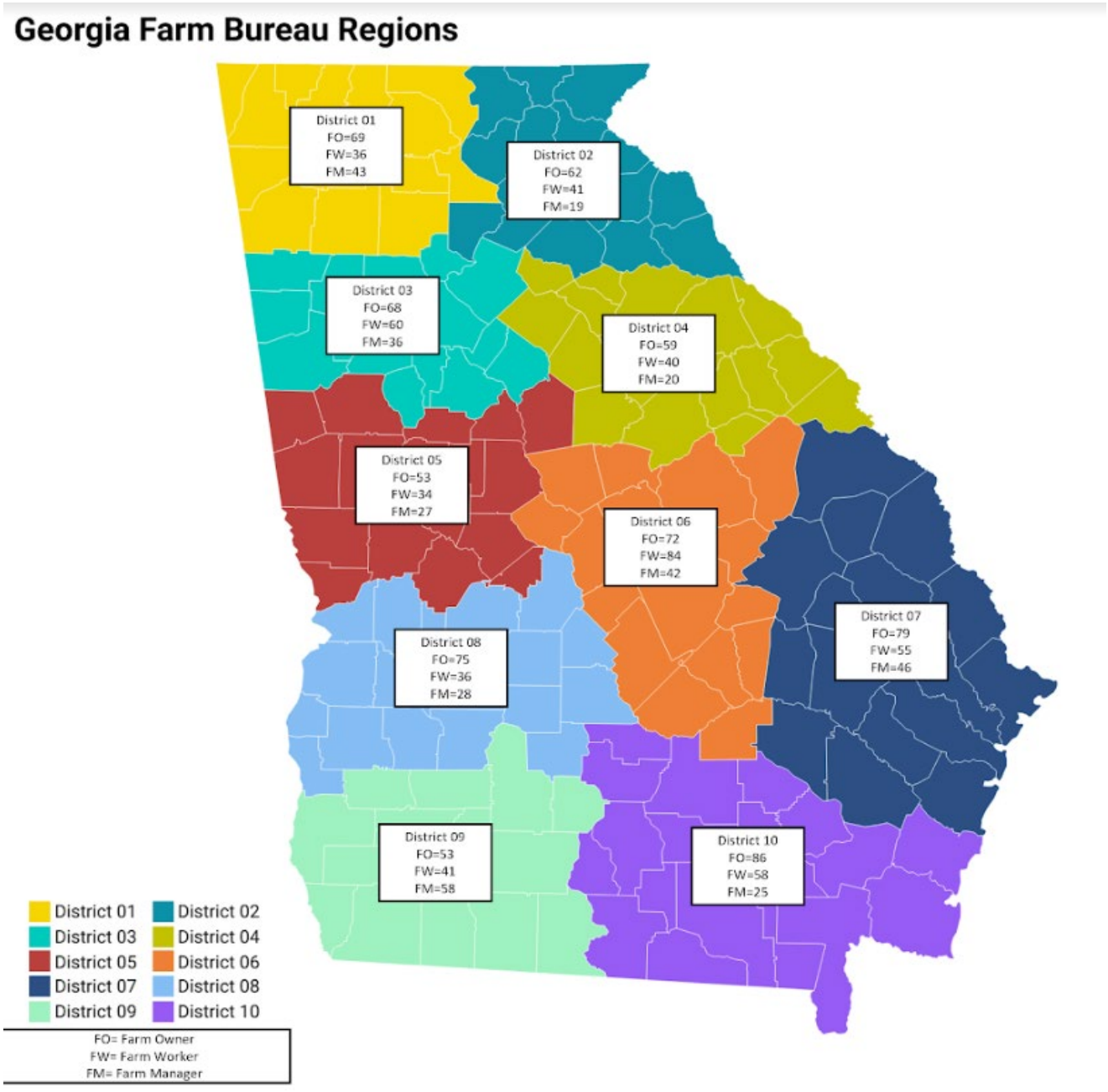
Household income per year	Count	Percent
<$15,000	54	3.3%
$15,000-$19,999	46	2.8%
$20,000-$24,999	70	4.3%
$25,000-$34,999	132	8.1%
$35,000-$44,999	224	13.8%
$45,000-$59,999	393	24.2%
$60,000-$79,999	247	15.2%
$80,000-$99,999	174	10.7%
$100,000-$149,999	155	9.6%
$150,000+	126	7.8%
Total	1621	

Most farmers were US citizens (72%), and another 18% were legal permanent residents.

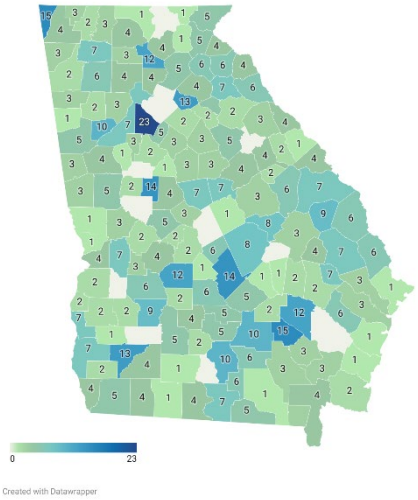
Immigration status	Count	Percent
US citizen	1179	71.5%
Legal permanent resident	290	17.6%
Temporary worker	21	1.3%
Temporary student or exchange visitor	12	0.7%
Refugee	44	2.7%
Undocumented resident	100	6.1%
Prefer not to answer	2	0.1%
Other	1	0.1%
Total	1649	

Geographic Location of Participants

The participants of our survey were spread out throughout Georgia across each Farm Bureau region. Future interventions will utilize the regional structure developed by Georgia Farm Bureau. By identifying and understanding regional differences, including demographics, stressors, and coping mechanisms, interventions to address mental health concerns can be more highly tailored.



Farm Owner by County

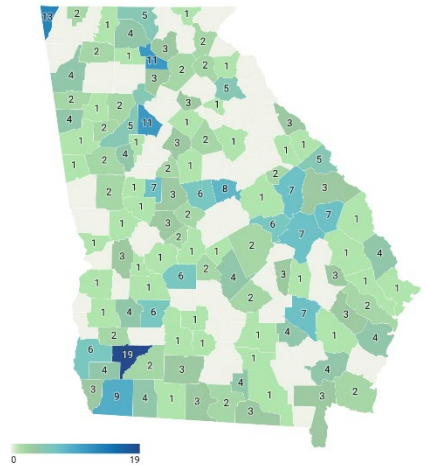


Farm owners in 148 counties responded to the survey. The most responses came from people who owned farms in DeKalb County (23), Dade County (15), Baker County (15), Dodge County (14), and Lamar County (14).

Farm managers in 126 counties responded to the survey. The most responses came from people who managed farms in Baker County (19), Dade County (13), DeKalb County (11), and Dawson County (11).

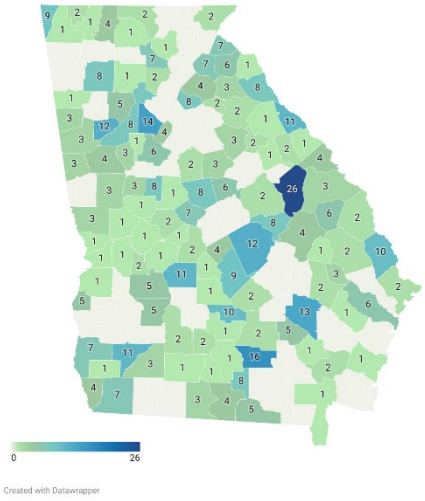
Farm workers in 116 counties responded to the survey. The most responses came from people who worked in Jefferson County (26), Atkinson County (16), and DeKalb County (14).

Farm Manager by County



A large number of farm owners in urban Dekalb County called for further exploration. Eight of the 23 respondents who own a farm in DeKalb County also owned farms in other counties. For example, one farmer owns a farm in Dekalb, Dawson, Dodge, Lamar, and Bacon Counties. We expected to see farmers with multiple farms operating in neighboring counties. Of the eight farm owners, only one farmer owned another operation within two counties of DeKalb (Douglas County separated by Fulton County).

Farmworker by County



The exploration of the DeKalb County farmers shows an opportunity to focus future research. This work did not collect information on the primary farm, the resources (time, money, energy) spent per year on each farm, farm-specific commodities, and if one farm causes more stress than others. Further exploration could be beneficial when developing commodity-specific mental health or stress reduction interventions.

Comparison with the Agricultural Census

The demographics of the surveyed farmers are slightly different from the farming population in Georgia according to the Ag Census. The average age of our sample is younger, and we had slightly more females than the Ag Census count. The percentage of Black and Hispanic farmers is also larger.

Demographic variable	Survey sample	Ag census
Age: AVG ± SD	44.0 ± 12.2	57.9
Gender: %Male	61.6%	65.9 %
Race: %Black	17.6%	8.1%
Ethnicity: %Hispanic	3.3%	1.4%

Demographics by Role

In the next section, we will compare demographics between farm owners, farm managers, and farm workers. The same is done for the two types of spouses (farmworker spouses and farm owner/manager spouses).

Farm owners, farm managers, and farm workers

There is a larger proportion of men (70%) being farm owners and farm workers than farm managers (59%).

Gender N, (%)	Farm owners (N=617)	Farm managers (N=310)	Farm workers (N=467)
Male	438 (71.0%)	184 (59.4%)	322 (69.0%)
Female	179 (29.0%)	126 (40.7%)	145 (31.1%)

Farm owners are on average slightly older (49.9 ± 13.7) than farm managers (41.4 ± 8.3) and farm workers (8.7 ± 7.8). More first-generation farmers identify as farm managers (86%) than farm owners (55%) or farm workers (46%).

First-gen farmer? N, (%)	Farm owners (N=547)	Farm managers (N=297)	Farm workers (N=444)
Yes	302 (55.2%)	256 (86.2%)	202 (45.5%)
No	245 (44.8%)	41 (13.8%)	242 (54.5%)

Household composition was similar across the groups; between 86-90% of farmers are married or living together. Farm workers on average had more children (1.8 ± 0.7) than farm owners (1.6 ± 0.9), who in turn also had more children than farm managers (1.4 ± 0.6), all $p<0.003$.

Three-quarters of farm owners and farm workers are US citizens compared to half the farm managers. Farm managers have a larger share of legal permanent residents and undocumented residents than farm owners and farm workers. Throughout this survey, we reminded participants that the data collected was anonymous and would not be connected to them. We understand that some farmers may not disclose or may misrepresent their immigration status.

Immigration status N, (%)	Farm owners (N=247)	Farm managers (N=311)	Farm workers (N=220)
US citizen	475 (76.2%)	153 (49.2%)	353 (72.2%)
Legal permanent resident	109 (17.5%)	84 (27.0%)	75 (15.3%)
Temporary worker	2 (0.6%)	0 (0.0%)	15 (3.1%)
Temporary student or exchange visitor	1 (0.2%)	3 (1.0%)	7 (1.4%)
Refugee	2 (0.32%)	12 (3.9%)	30 (6.1%)
Undocumented	34 (5.5%)	57 (18.3%)	8 (1.6%)

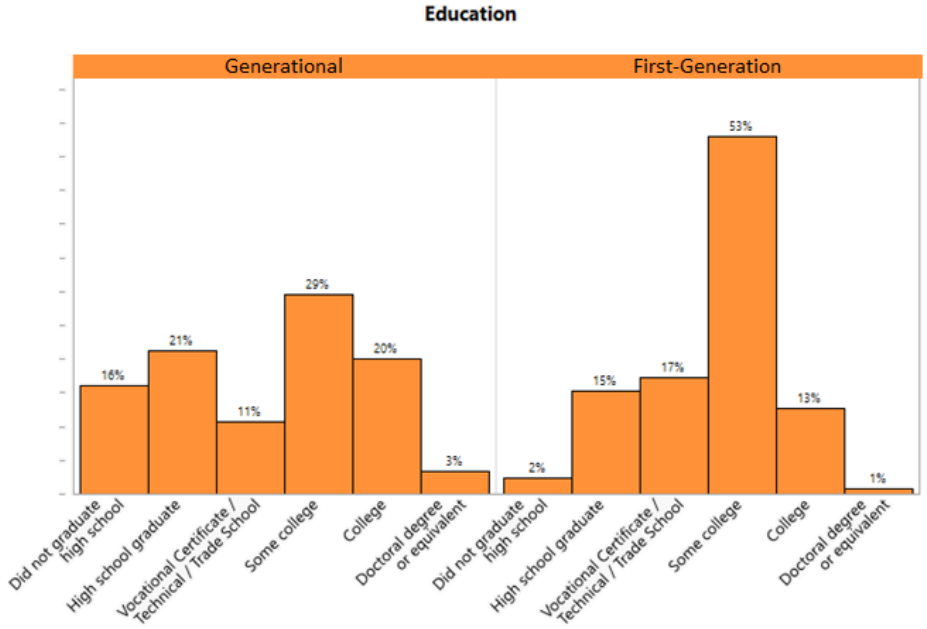
Farm owners have a higher annual household income (median=$60K-79K) than farm managers (median=$45K-59K), and farm workers (median=$35K-45K). This might be related to the fact that, in this sample, a person with a college degree is more likely to be a farm owner, a person with some college experience is more likely to be a farm manager, and a high school graduate is more likely to be a farm worker. There are some more extreme values for both education and income.

Demographics by generational status

First-generation farmers are significantly younger (42.6 ± 8.9) than generational farmers (45.5 ± 14.4). In addition, first-generation farmers are significantly more Generation X, and significantly less often Baby Boomers and Silent Generation.

First-gen farmer? N, (%)	Gen Z (1997-2012)	Gen Y (1981-1996)	Gen X (1965-1980)	Baby Boomers (1946-1964)	Silent Generation (1928-1945)
No	19 (4.1%)	194 (41.9%)	158 (34.1%)	73 (15.8%)	19 (4.1%)
Yes	16 (2.2%)	298 (41.2%)	387 (53.5%)	19 (2.6%)	4 (0.6%)

First-generation farmers have a significantly larger proportion of women (36.0%) than generational farmers do (24.0%).



First-generation farmers had a lower percentage (2.1%) not graduating high school than generational farmers (15.9%), and a higher percentage of farmers that have a vocational certificate (17.0% vs 10.6%), and some college (52.8% vs 29.4%).

First-generation farmers also have a larger proportion making slightly more than generational farmers, which may be explained by the higher number who had at least some college experience.

First-generation farmers were more likely to be married or living together (92.5%) than generational farmers (85.2%). This might explain the slightly higher household income as well. In addition, first-generation farmers had fewer children on average (1.4) than generational farmers (1.8).

Spouses of farm owners, farm managers, and farm workers

In our survey, many more women responded as a spouse of a farm owner/manager (76%) or farm worker (86%) than men. Spouses of farm owners/managers were older (48.4 ± 14.3) than spouses of farm workers (39.6 ± 11.8), $p<0.001$.

Unsurprisingly, spouses of farm owners/managers reported a higher income than spouses of farmworkers. In addition, spouses of farm owners/ managers had a higher degree than spouses of farm workers, which reflects their spouse's educational level. The average number of children for spouses of farmworkers was 1.6±0.7 while for spouses of farm owners or managers it was slightly higher at 2.0 ± 1.0.

Only 4% of spouses reported their farmer not living with them at the time of taking the survey. Only spouses of farm workers reported being separated from their spouse due to work, with a duration between 3 to 8 months per year on average. Spouses of farm owners/managers indicated that farm work was not the reason for the physical separation.

FARM WORK DESCRIPTORS

In the following section, we zoom into the work characteristics of farm owners, farm managers, and farm workers.

Farming Experience

Farm owners

Most farm owners (82%) have been farm owners longer than 5 years. More than half (55%) of the farm owners are first-generation farmers. The majority (83%) indicated they worked one to two farms in a typical year. For 57% of farm owner households, farming was the only source of income.

Farm managers

Most farm managers (51%) have been in that role between 1 to 5 years, and 47% have been farm managers longer than 5 years. This means farm managers have less experience on average than farm owners. Almost 9 out of 10 (86%) are first-generation farmers, which is much higher than the 6 out of 10 for farm owners. Similar to farm owners, the majority of farm managers (93%) indicated they worked one to three farms in a typical year. For 91% of farm manager households, farming was the only source of income, which is a higher reliance on farming income than farm owners.

Farm workers

Nearly half (44%) have been farm workers between 1 to 5 years, which is similar to farm managers. Less than half (46%) of farm workers were first-generation farmers, which is slightly less than farm owners, and slightly more than farm managers. Farm workers generally worked on the same farm the entire year (60%) and 30% indicated that they worked two and three farms in a typical year. The remaining farm workers (10%) indicated they worked four or more farms a year. For 90% of farm worker households, farming was the only source of income, which is a similar percentage to farm managers, and much higher than farm owners.

Years of experience	Farm owners		Farm managers		Farm workers	
	Count	Percent	Count	Percent	Count	Percent
< 1 year	2	0.4%	7	2.3%	7	1.5%
1 to 5 years	99	17.8%	155	50.8%	206	44.0%
5 to 10 years	164	29.5%	80	26.2%	182	38.9%
10 to 20 years	135	24.3%	59	19.3%	67	14.3%
21 years+	155	27.9%	4	1.3%	6	1.3%
Total	555		305		468	

Farming Operation Characteristics

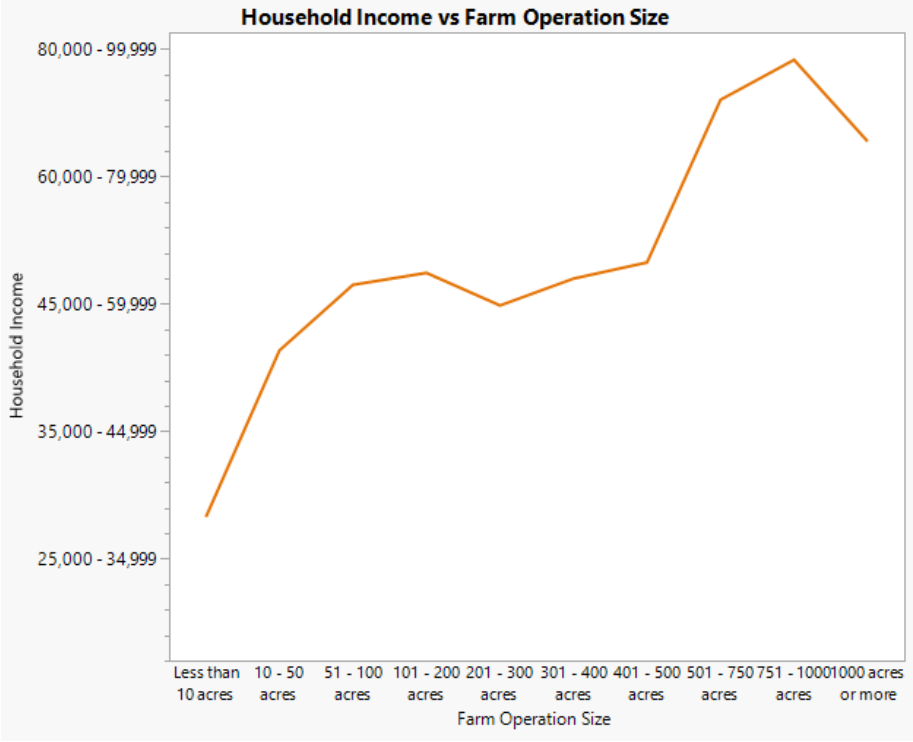
When asked how many diverse commodities/farm operations they oversee, most farmers said they work one (32%) or two farms (34%), while another third work three or more farms. Of farm workers, most work either on one farm (38%) or three farms (31%). Farm managers mostly work on two diverse farms (43%), as do farm owners (42%).

There is no difference between the average diverse farms of farm owners (2.2 ± 1.2), farm managers (2.3 ± 1.0), and farm workers (2.3 ± 1.2).

Diverse farms	All farmers		Farm owners		Farm managers		Farm workers	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
1	416	32.2%	171	31.3%	70	24.7%	175	38.0%
2	436	33.8%	232	42.4%	121	42.6%	83	18.0%
3	260	20.1%	69	12.6%	50	17.6%	141	30.7%
4	118	9.1%	45	8.2%	36	12.7%	37	8.0%
5	48	3.7%	22	4.0%	7	2.5%	19	4.1%
6	11	0.9%	6	1.1%	0	0.0%	5	1.1%
7	2	0.2%	2	0.4%	0	0.0%	0	0.0%

Almost half of the farmers (42.4%) had a farming operation of more than 300 acres. A similar number of farm workers (42.8%) worked on a farm of more than 300 acres. Slightly more farm managers (50.5%) oversaw farms of more than 300 acres, while fewer farm owners (37.6%) worked farms of more than 300 acres.

Farm Size	All farmers		Farm owners		Farm managers		Farm workers	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
< 10 acres	61	4.6%	55	10.0%	1	0.3%	5	1.1%
10 - 50	126	9.5%	61	11.0%	12	3.9%	53	11.3%
51 - 100	160	12.1%	75	13.6%	40	13.1%	45	9.6%
101 - 200	179	13.5%	83	15.0%	46	15.1%	50	10.7%
201 - 300	238	17.9%	71	12.8%	52	17.1%	115	24.5%
301 - 400	223	16.8%	62	11.2%	58	19.0%	103	22.0%
401 - 500	121	9.1%	30	5.4%	28	9.2%	63	13.4%
501 - 750	128	9.7%	59	10.7%	54	17.7%	15	3.2%
751 - 1000	48	3.6%	31	5.6%	6	2.0%	11	2.4%
1000 acres+	43	3.2%	26	4.7%	8	2.6%	9	1.9%



Household income generally went up as the farming operation size increased.

Farm Descriptors by Generational Status

The number of farms worked was significantly higher for first-generation farmers (1.9 ± 1.2) than for generational farmers (1.7 ± 1.0). First-generation farmers are more likely to farm the same farms throughout the year (55.8%) than generational farmers

(44.2%). The type of commodity they farmed was not related to being a generational or first-generation farmer.

First-gen farmer? N, (%)	Cotton & Wool	Arable	Pastoral
No	99 (21.9%)	364 (69.6%)	353 (67.5%)
Yes	138 (21.1%)	501 (68.7%)	480 (65.8%)
Total	237 (21.4%)	865 (69.1%)	833 (66.5%)

Totals in the table may add up to more than 100% as multiple commodities can be farmed by the same person.

About a quarter of first-generation farmers (25.8%) work year-round on the farm, compared to more than half (57.2%) of the generational farmers. Not many first-generation farmers typically work more than 50 hours a week (24.9%), while generational farmers are more likely to do so (43.8%). During the busy season, more generational farmers work every day of the month (38.5%) compared to first-generation farmers (17.6%). However, when we asked about the stressor work-life balance, there was no difference between first-generation farmers and generational farmers, p=0.150.

Generational (age) Differences

When we split up the sample into age generations, it becomes clear that the older generations (Silent Generation and Baby Boomers) mostly work year-round (94% and 96%), compared to Gen X (26%), Gen Y (29%), and Gen Z (36%), p<0.001. While 32% of the entire sample worked 50 hours per week or more, when we split it up into age generations, we see the same pattern. The proportion of those working 50 hours or more in Gen X and Gen Z are respectively 25% and 20%. Gen Y seems to be the odd one out with 36% working more than 50 hours per week, as do Baby Boomers (38%) and the Silent Generation (33%). The difference between Gen X, Gen Z, and the other three generations is significant, p=0.002.

There were significant differences in stressors and stress experienced in balancing home and work life. The Silent Generation was the least concerned about their work-life

balance (3% was moderately to highly concerned), with Baby Boomers following at 28%. Gen X, Gen Y, and Gen Z are more concerned (63%, 69%, and 63%, p<0.001.)

Concerned about work-life balance	Gen Z (1997-2012) (N=43)	Gen Y (1981-1996) (N=642)	Gen X (1965-1980) (N=639)	Baby Boomers (1946-1964) (N=144)	Silent Generation (1928-1945) (N=36)
None to a little bit	37.5%	31.3%	37.1%	72.3%	96.6%
Moderately to a lot	62.5%	68.8%	62.9%	27.7%	3.5%

Commodities

Commodity type means the type of goods produced on a farm. We have split commodities into three groups: arable, pastoral, and cotton & wool. For this report, arable farms include fruits and vegetables; nursery, sod, & floriculture; peanuts, pecans & other nuts; timber & pulpwood; sugar & sweeteners; and wheat, corn, & other grains. Pastoral farms include aquaculture; cattle & beef; dairy; pigs; and poultry & eggs. Cotton & wool farms include cotton and wool farms.

Looking at the commodity differences between farmers, farm owners and farm managers work more on arable farms than farm workers. Farm managers and farm workers work more often on pastoral farms than farm owners do. Farm workers have a higher proportion of workers on cotton and wool farms, followed by farm owners and then farm managers. Nearly half (47.8%) of the farmers report working with more than one commodity.

Commodity type N, (%)	Total Sample (N=1291)	Farm owners (N=547)	Farm managers (N=284)	Farm workers (N=460)	p-value
Arable	894 (61.5%)	408 (74.6%)	203 (71.5%)	283 (61.5%)	**<0.001**
Pastoral	861 (66.7%)	336 (61.4%)	199 (70.1%)	326 (70.9%)	**0.003**
Cotton & Wool	241 (21.2%)	100 (20.0%)	40 (16.1%)	101 (25.8%)	**0.009**

When asked about the type(s) of the farm they own, supervise, or work on, the farmers most often reported cattle & beef (460 times), fruits & vegetables and (388 times), wheat, corn, & other grains (303 times). For all farmers, cattle and beef and fruits and

vegetables were the top commodities. Farm owners work most with cattle and beef (186 times), fruits and vegetables (150 times), and peanuts and other nuts (145 times). Farm managers work most on fruit & vegetable farms (93 times), cattle & beef (85 times), and peanuts, pecans, & other nuts (77 times). When asked about the type of farm they work on, most farm workers indicated cattle & beef (189), fruits & vegetables (145 times), and wheat, corn, & other grains (126 times).

Entire sample		Farm owners		Farm managers		Farm workers	
Commodity	Count	Commodity	Count	Commodity	Count	Commodity	Count
Cattle & beef	460	Cattle & beef	186	Fruits & vegetables	93	Cattle & beef	189
Fruits & vegetables	388	Fruits & vegetables	150	Cattle & beef	85	Fruits & vegetables	145
Wheat	303	Peanuts	145	Peanuts	77	Wheat	126
Peanuts	295	Wheat	103	Wheat	74	Poultry & eggs	120
Poultry & eggs	258	Cotton & wool	100	Dairy	58	Cotton & wool	101
Cotton & wool	241	Poultry & eggs	97	Aquaculture	43	Nursery	74
Dairy	194	Timber/pulpwood	81	Nursery	43	Peanuts	73
Aquaculture	175	Dairy	64	Poultry & eggs	41	Dairy	72
Nursery	175	Aquaculture	60	Cotton & wool	40	Aquaculture	72
Pigs	125	Nursery	58	Pigs	37	Pigs	38
Timber/pulpwood	108	Pigs	50	Sugar & sweeteners	32	Timber/pulpwood	14
Sugar & sweeteners	74	Other livestock:	35	Timber/pulpwood	13	Sugar & sweeteners	10
Other livestock:	40	Sugar & sweeteners	32	Other produce:	3	Other livestock:	3
Other produce:	24	Other produce:	21	Other livestock:	2	Other produce:	0

Demographics by commodities

There were no significant differences in farmer demographics when looking across commodities.

Insurance

Less than half (48.9%) of farmers had health insurance of some kind, with farm owners being the most likely to have it (58.7%) and farm managers the least likely (39.1%). Workers' compensation insurance was the least frequent insurance farmers had (5.6%).

	All Farmers (N=1424)		Farm owner (N=623)		Farm manager (N=312)		Farmworker (N=489)	
Insurance type	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Health insurance	697	48.9%	366	58.7%	122	39.1%	209	42.7%
Car insurance	685	48.1%	418	67.1%	110	35.3%	157	32.1%
Employee healthcare insurance	524	36.8%	187	30.0%	91	29.2%	246	50.3%
Life insurance	491	34.5%	296	47.5%	68	21.8%	127	26.0%
Farm equipment and tractor insurance	449	31.5%	282	45.3%	71	22.8%	96	19.6%
Crop insurance	403	28.3%	191	30.7%	81	26.0%	131	26.8%
Home/renters insurance	389	27.3%	282	45.3%	46	14.7%	61	12.5%
Disability insurance	350	24.6%	127	20.4%	56	17.9%	167	34.2%
Workers' compensation insurance	80	5.6%	68	10.9%	27	8.7%	85	17.4%
Other:	12	0.8%	10	1.6%	0	0.0%	2	0.4%

HEALTHCARE ACCESS

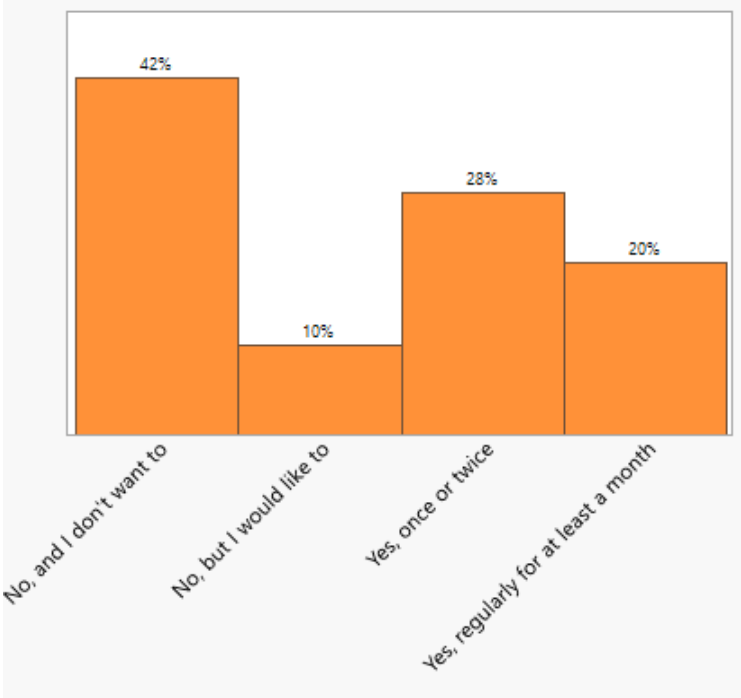
The goal of this section was to measure which health-related services the participants had access to. The least accessible healthcare option in the sample was access

to a psychologist. Farmers of this sample did not have telephone access (82%) online access (75%), or in-office access (78%) to a psychologist. Farm owners had significantly more access to all health-related services and goods than farm managers and farm workers, except for basic personal care, where only farm managers had significantly less access. Only a little over a third (43%) had access to in-office routine medical care.

Does **NOT** have access to … N,(%)	Entire Sample: **No access**	Farm owners	Farm managers	Farm workers	p-value
Online access to routine medical care	1001 (60.7%)	352 (56.5%)	252 (80.8%)	265 (54.2%)	**<0.001**
Telephone access for routine medical care	1116 (67.6%)	353 (56.7%)	265 (84.9%)	400 (81.8%)	**<.0001**
In-office visit to a psychologist	1166 (70.7%)	414 (66.5%)	236 (75.6%)	371 (75.9%)	**<0.001**
Online access to a psychologist	1244 (75.4%)	455 (73.0%)	247 (79.2%)	391 (80.0%)	**0.013**
Telephone access to a psychologist	1355 (82.1%)	457 (73.4%)	289 (92.6%)	437 (89.4%)	**<0.001**
Recreational activities	968 (58.7%)	291 (46.7%)	235 (75.3%)	318 (65.0%)	**<0.001**
Emergency medical care	969 (58.7%)	270 (43.3%)	242 (77.6%)	356 (72.8%)	**<0.001**
In-office routine medical care	940 (57.0%)	293 (47.0%)	234 (75.0%)	312 (63.8%)	**<0.001**
Basic personal care	707 (42.8%)	242 (38.8%)	187 (59.9%)	190 (38.9%)	**<0.001**
Food/groceries	687 (41.6%)	218 (35.0%)	209 (67.0%)	203 (41.5%)	**<0.001**

To the question “Have you ever visited a mental health professional or counselor?”, about half (48%) said yes, with 20% visiting one regularly for a month or longer. Another 10% would like to visit a mental health professional but have not done so yet, and more than a third (42%) of the farmers do not want to visit a healthcare professional and have not done so in the past.

When comparing visiting a mental health professional across age generations, we can see that the generations that are most likely to not want to see a professional are the Silent Generation (83%) and Baby Boomers (68%). Farmers with the highest proportion of visiting a mental health professional regularly, is Gen X (26%) followed by Gen Y (20%). They are also the highest proportion that has visited a health professional at some point in time: Gen X (27%) and Gen Y (37%). Gen Z hovers around the middle between Gen X and Gen Y, and Boomers and the Silent Generation on the other side.



Visited a mental health professional? N, (%)	Gen Z (N=43)	Gen Y (N=641)	Gen X (N=632)	Baby Boomers (N=143)	Silent Generation (N=35)
No, and don't want to	20 (46.5%)	260 (40.6%)	170 (26.9%)	97 (67.8%)	29 (82.9%)
No, but I would like to	7 (16.3%)	84 (13.1%)	62 (9.8%)	7 (4.9%)	2 (5.7%)
Yes, once or twice	9 (20.9%)	171 (26.7%)	235 (37.2%)	24 (16.8%)	4 (11.4%)
Yes, regularly for at least a month	7 (16.3%)	126 (19.7%)	165 (26.1%)	15 (10.5%)	0 (0.0%)

In addition, there are also some differences in healthcare access between those who are first-generation farmers and those who are generational farmers. In general, first-generation farmers have less access to all items, except for in-office visits to a psychologist and online access to a psychologist.

Does NOT have access to …	Entire sample (N=1288)	First generation farmers (N=760)	Generational farmers (N=528)	p-value
Telephone access to a psychologist	1086 (84.3%)	681 (89.6%)	405 (76.7%)	**<0.001**
Online access to a psychologist	998 (77.5%)	596 (78.4%)	402 (76.1%)	**0.334**
Telephone access for routine medical care	939 (72.9%)	600 (79.0%)	339 (64.2%)	**<0.001**
In-office visit to a psychologist	934 (72.5%)	562 (74.0%)	372 (70.5%)	**0.167**
Online access to routine medical care	806 (62.6%)	554 (72.9%)	252 (47.3%)	<0.001
Emergency medical care	805 (62.5%)	540 (71.1%)	265 (50.2%)	**<0.001**
Recreational activities	781 (60.6%)	509 (67.0%)	272 (51.5%)	<0.001
In-office routine medical care	777 (60.3%)	508 (66.8%)	269 (51.0%)	**<0.001**
Food/groceries	575 (44.6%)	421 (55.4%)	154 (29.2%)	**<0.001**
Basic personal care	567 (44.0%)	455 (59.9%)	112 (21.2%)	**<0.001**

Health Issues

Participants were asked to indicate whether they had any of a list of possible health issues and were reminded once again about the anonymity of the survey. Farm owners report a much higher percentage of diabetes, hypertension, and heart disease when compared to farm managers and farm workers. Farm managers report a higher percentage of anorexia when compared to farm owners and farm workers.

With health issues	Entire sample	Farm owner	Farm manager	Farm worker
Arthritis	16.4%	23.8%	12.8%	7.6%
Anxiety	18.4%	23.0%	19.9%	13.5%
Hypertension	14.0%	23.0%	2.6%	8.2%
Depression	8.6%	8.0%	4.8%	10.0%
Diabetes	6.5%	10.0%	2.6%	3.5%
Anorexia	5.8%	6.3%	12.8%	2.2%
Heart disease	4.2%	6.7%	0.6%	1.8%
Stomach ulcers	3.6%	5.3%	2.2%	3.5%
Bipolar disorder	3.5%	3.2%	3.2%	3.3%
Other joint or muscle disease	2.9%	5.5%	0.0%	1.0%
Prefer not to answer	2.9%	1.6%	0.6%	1.8%
Cancer	2.6%	5.1%	0.0%	0.6%
OCD	2.1%	1.8%	1.0%	2.7%
Other eating disorders	2.1%	1.9%	1.3%	3.1%
Other medical disorders	2.1%	3.0%	1.0%	1.0%
Lung disease	1..8%	2.7%	0.6%	1.0%
Panic disorder	1.7%	1.6%	0.6%	2.2%
PTSD	1.5%	2.6%	0.3%	1.6%
Bulimia	1.3%	1.3%	0.6%	1.8%
Other anxiety disorders	1.3%	1.4%	0.3%	1.0%
Other mood disorders	0.9%	1.3%	0.3%	1.0%
Other psychiatric disorders	0.7%	0.6%	0.6%	0.6%
Schizophrenia	0.4%	0.6%	0.3%	0.0%
Substance use disorder/addiction	0.2%	0.5%	0.0%	0.2%

MENTAL WELL-BEING OUTCOMES

The following section presents initial outcomes about mental well-being: its stressors, health issues, anxiety, negative emotions, perceived stress, time spent worrying, stressors, and coping mechanisms.

Job Satisfaction

We asked each group if they feel unhappy about being a farmer, or spouse of a farmer. Most farm owners and managers (54%) indicated that they hardly ever (never to a few times a year) feel unhappy about being a farm owner. For farm workers, this was 45%. About half of the participants are unhappy at least once per month with their role as a farmer.

For spouses of farm owners and managers, this was 73% for the spouses of farm workers, it was 42%. Keep in mind, that spouses are underrepresented (12%) so these figures may not be representative of farming spouses in Georgia.

Frequency of feeling unhappy with own role	Farm owner/manager		Farm owner/manager spouse		Farm worker		Farm worker spouse	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Never	273	29.5%	57	52.8%	79	16.2%	12	14.0%
One to four times per year	248	26.8%	22	20.4%	139	28.5%	24	27.9%
At least once per month	200	21.6%	11	10.2%	170	34.95	45	52.3%
At least once per week	126	13.6%	17	15.7%	79	16.2%	2	2.3%
Daily	78	8.4%	1	0.9%	20	4.1%	3	3.5%
Total	925		108		487		86	

Anxiety

We collected information about anxiety by asking how often farmers fear something will happen, with options not at all, a little bit, moderately, a lot, and extremely. We combined the options, not at all, and a little bit ("L" for Low in the table), and Moderately, a Lot, and Extremely got combined to ("M-H" for Medium-High in the table).

Survey participants were asked to rate different stressors and to which extent they worried about the stressor (not at all, a little, moderately, a lot, extremely). We combined the four categories into two categories: "not at all/a little" and "moderately to a lot/extremely." The most common stressors across the entire sample were balancing home and work life (61% worry at least moderately), the weather and its effects on the farm work (61% worry at least moderately), COVID-19's effects on income (59% worry at least

moderately), saving for retirement (59% worry at least moderately), and unexpected financial burdens (59% worry at least moderately).

In addition to the common stressors, farm workers worry about obtaining operation certificates, experiencing microaggressions, the lack of opportunities for "people like you," health issues, problems with their partner/spouse, and problems parenting. Top stressors for farm managers include problems with friends, saving for retirement, succession planning, working environment, problems with their partner, spouse, or children, microaggressions, and the lack of a role model. Farm owners reported experiencing less stress that they categorized as "moderate to a lot/extremely." In addition to the common stressors, farm owners were also stressed thinking about succession planning, catching COVID-19, and possible changes to farming/agricultural laws or policies.

	Total Sample		Farm owners		Farm managers		Farm workers		
Worry about…	L	M-H	L	M-H	L	M-H	L	M-H	P-VALUE
Balancing home and work life	38.6	61.4 %	51.1%	**49.9%**	27.9%	72.1%	29.3%	70.7%	**<.001**
The weather and its effect on the farm	38.8%	61.2 %	47.2%	**52.8%**	33.7%	66.3%	31.3%	68.7%	**<.001**
COVID-19s impact on farm income	41%	59.0 %	51.3%	**48.7%**	28.6%	71.4%	35.3%	64.7%	**<.001**
Saving for retirement	41.1%	58.9%	48.8%	51.2%	27.1%	**73.0%**	40.1%	59.9%	**<.001**
Unexpected financial burdens	41.4%	58.6%	52.0%	**48.0%**	27.9%	72.1%	35.9%	64.1%	**<.001**
Thinking about who will take over the farm when you retire	44.4%	55.6%	57.3%	**42.7%**	28.2%	71.8%	37.7%	62.3%	**<.001**
Fear of Catching COVID-19	45.9%	54.1%	52.8%	47.2%	43.8%	56.3%	38.3%	**61.7%**	**<.001**
Health issue or illness	46.3%	53.7%	56.2%	**43.8%**	38.6%	61.4%	38.3%	61.7%	**<.001**
Possible changes to farming laws & policies	47.2%	52.8%	55.1%	45.0%	34.7%	**65.3%**	45.1%	54.9%	**<.001**
Microaggressions	47.2%	52.8%	63.8%	**36.2%**	32.4%	67.6%	35.8%	64.2%	**<.001**
Obtaining training or employment certificates	47.6%	52.4%	61.6%	**38.5%**	36.4%	63.6%	36.3%	63.7%	**<.001**
Obtaining certain operation certifications	47.6%	52.4%	64.2%	**35.8%**	39.5%	60.6%	32.3%	**67.7%**	**<.001**
Problems with partner	48.5%	51.5%	64%	**36.0%**	31.1%	68.9%	40.0%	60.0%	**<.001**
Problems parenting	48.9%	51.1%	66.3%	**33.8%**	32.2%	67.8%	38.0%	62.0%	**<.001**
Difficulty in hiring or managing employees	49.2%	50.8%	59.4%	**40.6%**	40.1%	59.9%	42.6%	57.4%	**<.001**
Problems managing debt/debt of a family member	49.4%	50.6%	59.5%	**40.5%**	39.9%	60.1%	42.4%	57.6%	**<.001**
Lack of opportunities for "people like you"	49.9%	50.1%	62.0%	**38.1%**	44.0%	56.0%	38.0%	62.0%	**<.001**
Non-farmer neighbors	50.1	49.9%	63.7	**36.3%**	37.8%	62.2%	40.1%	60.0%	**<.001**
Lack of role models sharing your background	51.6%	48.4%	65.5	**34.5%**	36.2%	63.8%	43.8%	56.2%	**<.001**
Providing for family or community	51.7%	48.3%	61.6%	38.4%	45.5%	**54.6%**	43.0%	47.0%	**<.001**
Community discrimination	51.8%	48.2%	62.6%	**37.4%**	41.3%	58.7%	44.2%	55.9%	**<.001**
Problems with friends	51.8%	48.2%	67.1%	**32.9%**	38.0%	62.0%	39.8%	60.2%	**<.001**
Racism in my community	52.3%	47.7%	64.1%	**35.9%**	41.6%	58.4%	43.9%	56.1%	**<.001**
Directly experienced racism	52.9%	47.1%	63.8%	**36.2%**	45.6%	54.4%	43.6%	56.4%	**<.001**
Sexual issues	53.1%	47.0%	59.9%	**40.1%**	45.7%	54.3%	49.0%	51.0 %	**<.001**
Working environment or job injuries	53.2%	46.8%	67.1%	**32.9%**	31.4%	**68.6%**	49.3%	50.8%	**<.001**
Your Alcohol use	54.4%	45.6%	62.9%	**37.1%**	41.7 %	**58.3%**	52.2	47.8%	**<.001**

***Note**: "L" stands for Low: options "Not at all worried" and "A little bit worried". "M-H" stands for Medium-High: options "Moderately worried", "worried a lot", and "Extremely worried"*

Stressors by generational status

First-generation farmers systematically worry more intensely than generational farmers about all the topics we provided, except for health issues, weather effects on the farm, and balancing home and work life.

Worry about … N,(%)	Generational farmer (N=528)		First Generation farmer (N=760)		p-value
	L	M-H	L	M-H	
Health issue or illness	217 (44.3%)	273 (55.7%)	352 (47.7%)	386 (52.3%)	0.240
Alcohol use	328 (69.8%)	142 (30.2%)	316 (44.4%)	395 (55.6%)	**<0.001**
Problems parenting	260 (58.8%)	182 (41.2%)	313 (42.5%)	423 (57.5%)	**<0.001**
Sexual issues	279 (60.4%)	183 (39.6%)	353 (48.3%)	378 (51.7%)	**<0.001**
Problems with Partner	272 (56.0%)	214 (44.0%)	309 (42.1%)	425 (57.9%)	**<0.001**
Problems with Friends	288 (61.7%)	179 (38.3%)	310 (43.4%)	404 (56.6%)	**<0.001**
Fear of Catching COVID-19	266 (54.4%)	223 (45.6%)	293 (39.5%)	449 (60.5%)	**<0.001**
COVID-19s impact on farm income	255 (51.9%)	236 (48.1%)	247 (33.2%)	498 (66.9%)	**<0.001**
Community discrimination	275 (58.4%)	196 (41.6%)	341 (47.4%)	379 (52.6%)	**<0.001**
Possible changes to farming laws & policies	271 (54.9%)	223 (45.1%)	318 (43.0%)	421 (57.0%)	**<0.001**
Obtaining training or employment certificates	249 (56.0%)	196 (44.0%)	310 (42.3%)	423 (57.7%)	**<0.001**
Directly experienced racism	295 (61.2%)	187 (38.8%)	346 (46.8%)	393 (53.2%)	**<0.001**
Working environment or job injuries	312 (64.5%)	172 (35.5%)	336 (45.5%)	402 (54.5%)	**<0.001**
Thinking about who will take over the farm	259 (55.5%)	208 (44.5%)	269 (36.2%)	474 (63.8%)	**<0.001**
Obtaining certain operation certifications	281 (58.4%)	200 (41.6%)	284 (38.9%)	447 (61.2%)	**<0.001**
Problems managing debt/debt of a family member	298 (61.3%)	188 (38.7%)	307 (41.6%)	431 (58.4%)	**<0.001**
Racism in my community	297 (61.8%)	184 (38.3%)	335 (45.2%)	407 (54.9%)	**<0.001**
Lack of role models sharing your background	305 (62.6%)	182 (37.4%)	323 (43.7%)	416 (56.3%)	**<0.001**
Microaggressions	273 (57.1%)	205 (42.9%)	285 (38.6%)	453 (61.4%)	**<0.001**
Providing for family or community	272 (55.2%)	221 (44.8%)	359 (49.2%)	371 (50.8%)	**0.040**
The weather and its effect on the farm	198 (40.2%)	295 (59.8%)	278 (37.9%)	456 (62.1%)	**0.420**
Saving for retirement	237 (48.3%)	254 (51.7%)	261 (35.4%)	476 (64.6%)	**<0.001**
Balancing home and work life	201 (41.0%)	289 (59.0%)	273 (36.9%)	466 (63.1%)	0.150
Non-farmer neighbors	284 (58.4%)	202 (41.6%)	306 (42.7%)	410 (57.3%)	**<0.001**
Lack of opportunities for “people like you”	262 (54.6%)	218 (45.4%)	328 (45.9%)	387 (54.1%)	**0.003**
Unexpected financial burdens	233 (49.5%)	238 (40.5%)	270 (36.6%)	467 (63.4%)	**<0.001**
Difficulty in hiring or managing employees	263 (54.7%)	218 (45.3%)	328 (45.0%)	401 (55.0%)	**0.001**

Stressors by commodities

We hypothesized that stressors could be different across commodities. However, as one farmer could indicate they worked with two commodities, no statistical inferences could be made. When looking at only those who worry a lot, we can see the following trends: Arable had more worries about saving for retirement (41%), and balancing work and home life (34%). Pastoral farmers had more worries about problems with partners (26%), community discrimination (22%), providing for family or community (30%), and unexpected financial burdens (35%). Cotton and wool farmers were more worried about health issues or illnesses (31%), problems with friends (29%), fear of catching COVID-19 (43%), possible changes to farming laws and policies (44%), obtaining training or employment certificates (37%), the weather effects on the farm income (52%), and difficulty in hiring employees (38%). Pastoral and cotton and wool farmers were more worried compared to arable farmers when it comes to a lack of role models sharing their background (29-30%), and microaggressions (21-22%).

Worry about … N, (%)	Arable			Pastoral			Cotton & Wool		
	Not at all	Mod.	A lot	Not at all	Mod.	A lot	Not at all	Mod.	A lot
Health issue or illness	59.0%	19.0%	22.1%	57.3%	19.5%	23.2%	45.2%	23.8%	31.0%
Alcohol use	61.2%	22.3%	16.5%	49.4%	33.6%	17.0%	51.6%	32.0%	16.4%
Problems parenting	42.7%	31.3%	26.0%	32.2%	40.7%	27.1%	35.0%	35.8%	29.3%
Sexual issues	55.9%	21.3%	22.7%	43.9%	27.0%	29.1%	64.0%	27.8%	26.2%
Problems with partner	62.2%	19.2%	18.5%	45.3%	28.8%	25.9%	1.2%	27.6%	21.1%
Problems with friends	60.2%	19.4%	20.4%	43.3%	31.1%	25.6%	44.4%	26.6%	29.0%
Fear of catching COVID-19	33.8%	27.5%	38.7%	30.2%	32.6%	37.2%	24.6%	32.5%	42.9%
COVID-19's impact on farm income	31.2%	30.1%	38.7%	40.2%	25.1%	34.7%	32.0%	29.6%	38.4%

Feelings and Emotions

Feelings of loneliness were experienced at least once per month by about half of the farmers (47%), sadness or depression by 49%, and feelings of hopelessness by 38.8%.

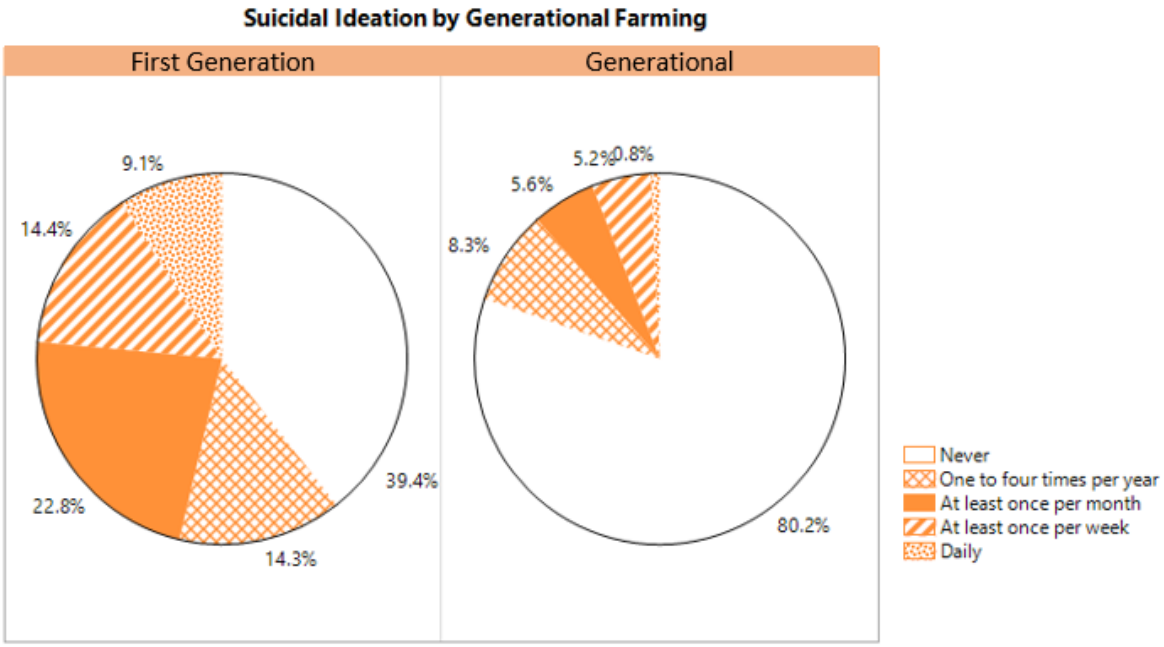
Frequency of feelings about	Lonely		Sad or depressed		Hopeless	
	Count	Percent	Count	Percent	Count	Percent
Never	384	23.6%	314	19.3%	494	30.4%
One to four times per year	474	29.2%	512	31.5%	500	30.8%
At least once per month	380	23.4%	468	28.8%	347	21.3%
At least once per week	237	14.6%	214	13.2%	182	11.2%
Daily	151	9.3%	119	7.3%	103	6.3%

When asked if they had suicidal ideation, 42% of farmers thought about it at least once in the past year, with 13% of farmers thinking about it more than once a month, 9.4% at least weekly, and 5% daily.

Thoughts of wanting to die by suicide	Count	Percent
Never	947	58.0%
One to four times per year	210	12.9%
At least once per month	244	15.0%
At least once per week	154	9.4%
Daily	77	4.7%

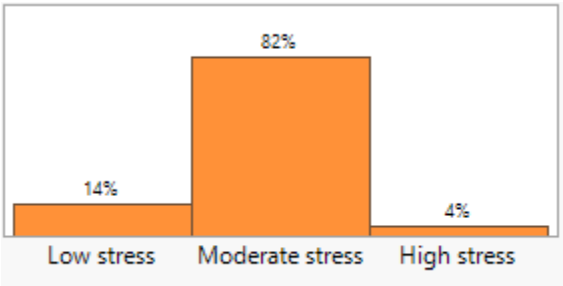
When we split up suicidal ideation into first-generation and generational farmers, it becomes clear that first-generation farmers more often have suicidal ideation than generational farmers, with 46.3% thinking about it at least once per month or more.

	Entire sample		First-generation		Generational	
Thoughts of wanting to die by suicide	Count	Percent	Count	Percent	Count	Percent
Never	947	58.0%	298	39.4%	418	80.2%
One to four times per year	210	12.9%	108	14.3%	43	8.3%
At least once per month	244	15.0%	172	22.8%	29	5.6%
At least once per week	154	9.4%	109	14.4%	27	5.2%
Daily	77	4.7%	69	9.1%	4	0.8%

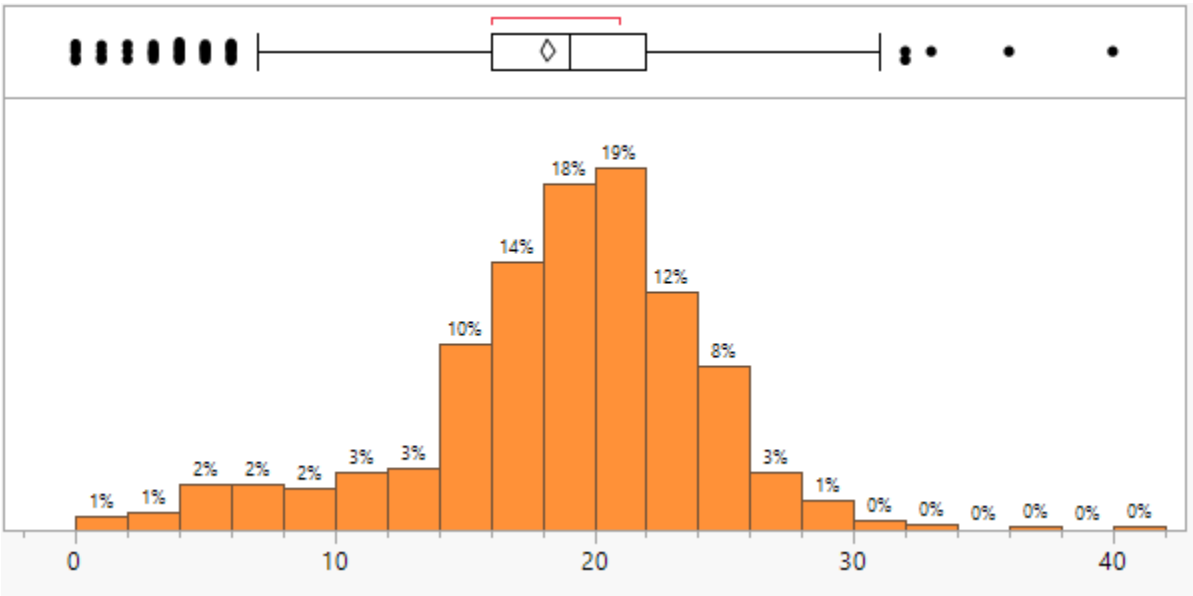


Perceived Stress

The theoretical maximum of the PSS score is 40, with 0-13 being low stress, 14-26 moderate stress, and 27-40 high stress. Based on the literature, we would expect one-third of the sample in each category. When we divide the PSS scores up into the three categories, we get the histogram below, showing that only 14% of farmers experienced low stress, 82% experienced moderately high stress, and 4% experienced high stress. The uneven representation in the stress-based categories indicates that farmers experience more stress than the general population.



The average PSS score of the entire sample is 18.2±5.4, indicating that the average farmer experiences moderate stress. There are more participants with a score around the peak of 20 and barely anyone below 10 or above 30.



PSS by role

The average PSS scores for each role show that there is a significant difference, $p<0.001$, with the spouses of farm owners/managers the least stressed, followed by farm owners. Farm workers and their spouses experience the highest stress. However, when we split up the PSS scores into low, moderate, and high-stress categories, we can see farm owners are most represented in not only low stress, but also high-stress categories. And although fewer spouses of farm workers are in the low-stress category, they are dominant in the moderate stress category.

Role N, (%)	N	PSS AVG ± SD	PSS low stress	PSS mod stress	PSS high stress
Farm workers	488	19.3 ± 3.9	24 (4.9%)	452 (92.6%)	12 (2.5%)
Farm managers	309	18.6 ± 4.9	29 (9.4%)	267 (86.4%)	13 (4.2%)
Farm owners	618	17.4 ± 6.2	143 (23.1%)	446 (72.2%)	29 (4.7%)
Spouses FWs	86	19.4 ± 5.1	2 (2.3%)	83 (96.5%)	1 (1.2%)
Spouses of FO/FMs	108	17.1 ± 5.5	18 (16.7%)	86 (79.6%)	4 (3.7%)

Below, we list the average PSS scores for farm owners, farm managers, and farm workers per district in Georgia (based on Georgia Farm Bureau regions). Refer to the map on page 11 of this report for a list of the counties in the districts. The PSS average is highest for district 10, and lowest for district 2. For farm owners, the same districts represent the highest and lowest. For farm managers, district 4 has the lowest PSS score, and districts 3 and 9 have the highest. For farm workers, districts 5 and 10 are the most stressed, and district 9 is the least stressed.

Farm Bureau District	AVG PSS score ± SD	# of farm owners in district	Farm owners AVG ± SD	# of farm managers in district	Farm managers AVG ± SD	# of farm workers in district	Farm workers AVG ± SD
District 1	18.1 ± 5.1	65	18.3 ± 5.3	42	17.4 ± 5.5	35	18.7 ± 4.3
District 2	17.7 ± 6.1	57	16.3 ± 6.4	23	18.7 ± 6.2	37	19.2 ± 5.2
District 3	18.7 ± 5.3	70	18.1 ± 6.3	40	19.6 ± 4.7	62	19.0 ± 4.2
District 4	18.5 ± 5.2	54	18.5 ± 6.3	24	16.9 ± 3.5	39	19.4 ± 4.1
District 5	17.8 ± 6.0	52	16.7 ± 6.4	28	17.2 ± 5.9	35	19.9 ± 5.1
District 6	18.4 ± 4.8	66	17.8 ± 5.9	46	18.2 ± 4.8	81	19.0 ± 3.7
District 7	18.0 ± 5.7	78	17.3 ± 5.9	48	18.1 ± 5.7	53	19.1 ± 5.3
District 8	18.1 ± 6.3	67	16.6 ± 7.4	30	19.4 ± 5.0	34	19.8 ± 3.9
District 9	18.5 ± 5.4	53	17.3 ± 5.9	59	19.6 ± 5.0	47	18.5 ± 5.1
District 10	19.6 ± 5.1	79	19.6 ± 5.3	27	18.6 ± 7.0	57	19.9 ± 3.5

PSS by gender

There was no gender difference in PSS scores.

PSS by healthcare access

Participants who did not have access to emergency medical care, telephone or in-office routine medical care, or telephone access to a psychologist, all had significantly higher PSS scores.

Access to ...	No access N	PSS score for no access, AVG ± SD	Has access N	PSS score for has access, AVG ± SD	p-value
Emergency medical care	959	19.1 ± 4.6	679	17.0 ± 6.2	<.001
In-office routine medical care	931	19.2 ± 4.7	707	16.9 ± 6.0	<.001
Basic personal care	698	19.6 ± 4.1	940	17.2 ± 6.0	<.001
Food/groceries	680	18.9 ± 4.6	958	17.7 ± 5.9	<.001
In-office visit to a psychologist	1158	18.7 ± 5.3	480	16.8 ± 5.5	<.001
Online access to routine medical care	991	18.5 ± 5.1	647	17.7 ± 5.9	.004
Online access to a psychologist	1234	18.5 ± 5.2	404	17.3 ± 6.0	<.001
Recreational activities	960	19.1 ± 4.8	678	16.9 ± 6.0	<.001
Telephone access for routine medical care	1106	19.0 ± 4.6	532	16.6 ± 6.5	<.001
Telephone access to a psychologist	1345	18.6 ± 5.1	293	16.5 ± 6.3	<.001

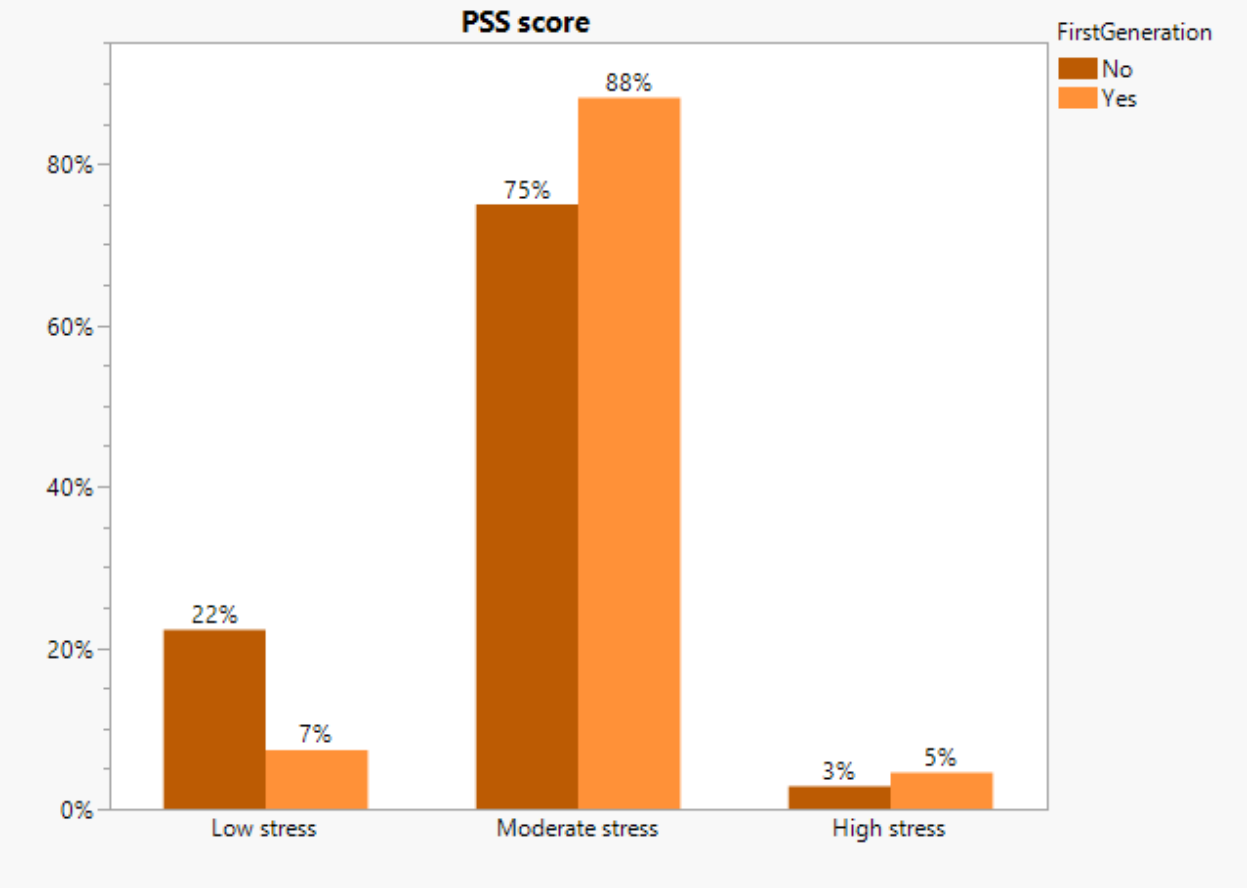
PSS by immigration status

The PSS score of the participants with US citizenship had significantly lower PSS scores than the other categories. The category of undocumented residents had the most stress, followed by refugees.

Immigration Status	N	AVG PSS score ± SD
Undocumented resident	98	19.7 ± 4.4
Refugee	44	19.5 ± 3.9
Legal permanent resident	288	18.8 ± 4.9
Temporary worker	21	18.6 ± 4.0
Temporary students or exchange visitor	12	18.2 ± 6.0
US citizen	1173	17.9 ± 5.6
Other	1	18.0 ± 0.0
Prefer not to answer	1	19.0 ± 0.0

PSS by generational status

The PSS score was significantly higher for first-generation farmers (19.1 ± 4.4) than for generational farmers (17.3 ± 6.2), p<0.001.



PSS by generation (age)

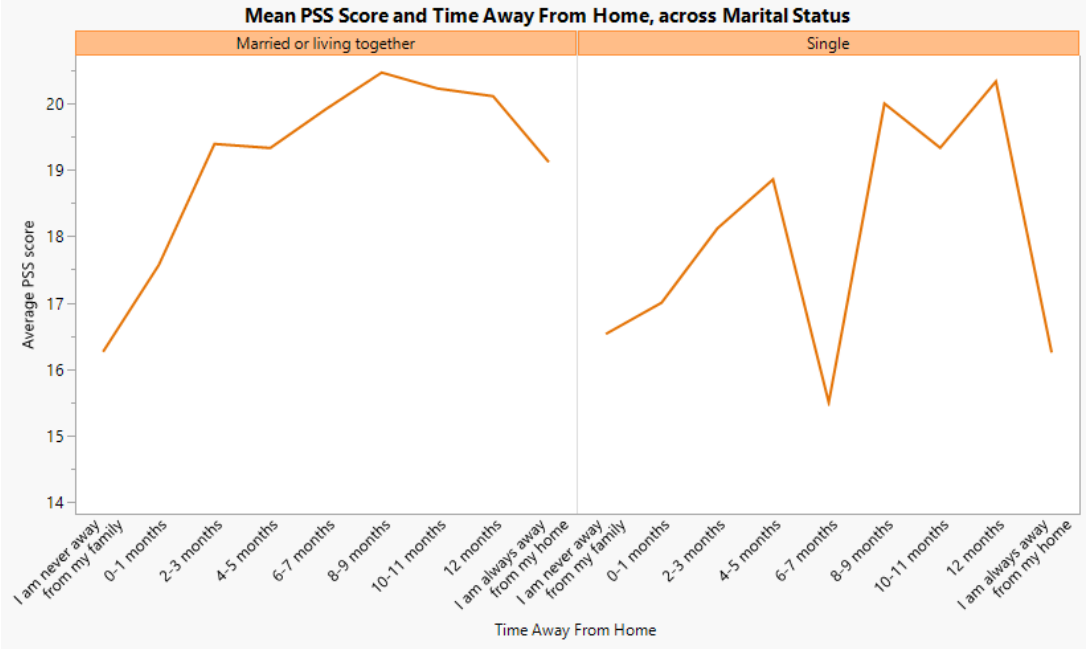
PSS was compared across generations. The silent generation had the lowest PSS scores of all (11.8), and Gen X had the highest PSS scores (19.5).

Generation	N	PSS score AVG ± SD
Gen Z	43	17.0 ± 5.9
Gen Y	642	18.7 ± 4.6
Gen X	633	19.5 ± 4.1
Baby Boomers	143	15.1 ± 7.3
Silent Generation	35	11.8 ± 6.9

PSS by time away from home and marital status

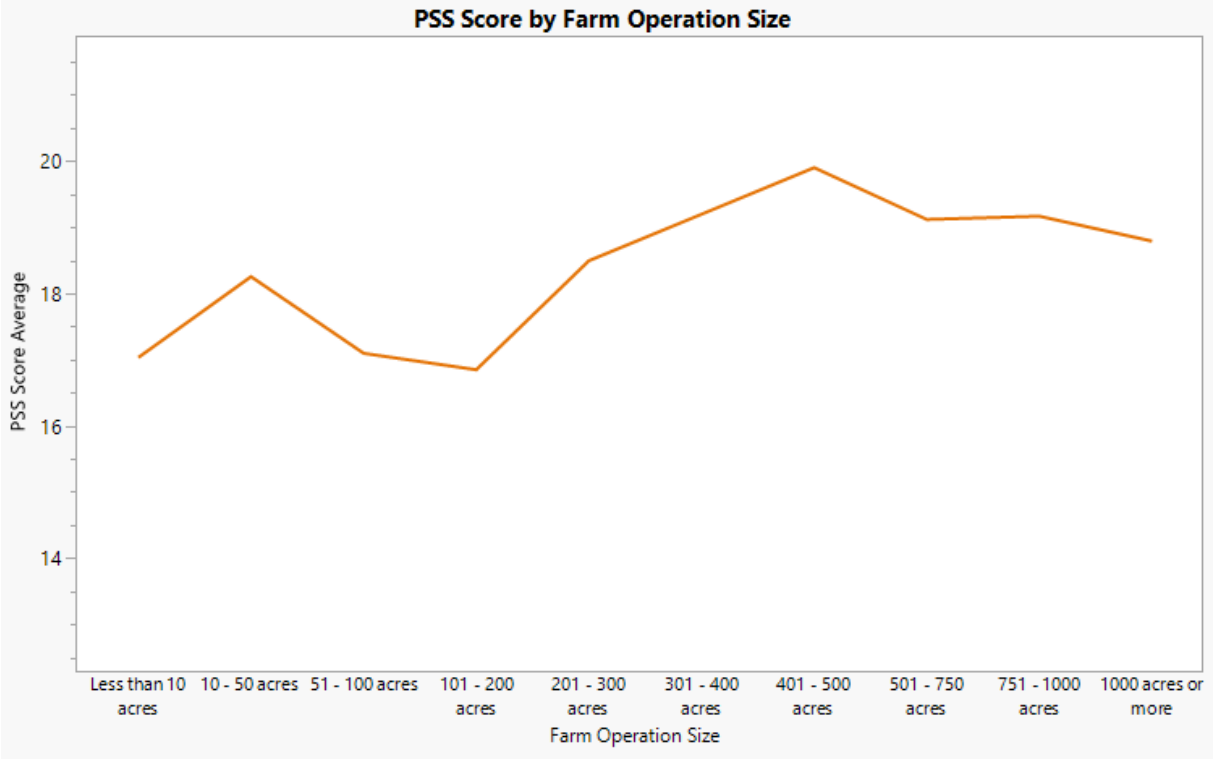
About 2% are always away from their family, and more than a quarter (28%) are never gone from their family, which means that 70% of all farmers are away from their family at least a few weeks a year. Expecting this to be stressful, we graphed the relationship between average PSS scores and time away from home.

The average PSS scores for time away from home were plotted in the graph below and split based on marital status (married/living together or single). The graphs indicate that as time away from home increases, so does the average PSS score. And the PSS scores are higher on average for those married or living together.

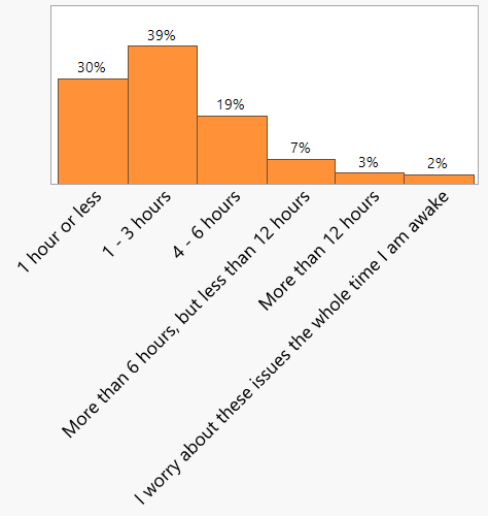


PSS by farm size

When plotting the average PSS score across farm operation size an incline can be seen as farm size goes up. However, the range in PSS averages is only 3 points. While there is not a large change in score, it does indicate that stress is higher for farmers working in larger operations.



Time Spent Worrying



Most people (39%) spent one to three hours of their day worrying about a multitude of things. About a tenth (12%) of the participants spent more than six hours worrying a day.

Time spent worrying	N	%
1 hour or less	158	30.8
1 - 3 hours	208	39.2
4 - 6 hours	102	19.2
More than 6 hours, but less than 12 hours	36	6.8
More than 12 hours	15	2.8
I worry about these issues the whole time I am awake	11	2.1
Total	530	

Time spent worrying by role

Farm owners worry the least of all roles (39% worries <1 hour a day). Farm workers worry mostly up to 3 hours per day. Spouses worry mostly 1-3 hours each day. A fifth (20%) of farm managers spend more than 12 hours worrying (10.5% + 9.4%).

Role	<1 hour	1-3 hour	4-6 hours	7-11 hours	12+ hours	"I worry about these issues the whole time I'm awake"
Farm owner	239 (39.1%)	153 (25.0%)	98 (16.0)	63 (10.3%)	30 (10.5%)	26 (4.3%)
Farm manager	62 (21.6%)	93 (32.4%)	45 (15.7%)	30 (10.5%)	30 (10.5%)	27 (9.4%)
Farm worker	153 (31.5%)	153 (31.5%)	126 (25.9%)	24 (4.9%)	12 (2.5%)	18 (3.7%)
Spouses	60 (31.3%)	82 (42.7%)	40 (20.8%)	6 (3.1%)	0 (0.0%)	4 (2.1%)

Time spent worrying by PSS

Those who spent more time worrying, have a higher PSS score, p<.0001. Those who spend 1 hour or less worrying about issues had the lowest PSS score compared to all others, p<.0001.

Time spent worrying	N	AVG PSS score ± SD
1 hour or less	534	15.3 ± 5.8
1 - 3 hours	486	18.6 ± 4.6
4 - 6 hours	309	20.6 ± 4.0
More than 6 hours, but less than 12 hours	123	20.8 ± 3.9
More than 12 hours	74	21.1 ± 3.9
I worry about these issues the whole time I am awake	76	21.0 ± 5.2

Stressors

The participants were asked to rate different stressors and to which extent they worried about the stressor (not at all, a little, moderately, a lot, extremely). We condensed the original four categories into two categories: "not at all/a little" and "moderately to a lot/extremely." The most common stressors across the entire sample were balancing home and work life (61.4% worry at least moderately), the weather and its effects on the farm work (61.2% worry at least moderately), COVID-19's effects on income (59% worry at least moderately), saving for retirement (58.9% worry at least moderately), and unexpected financial burdens (58.6% worry at least moderately).

In addition to the common stressors, farm workers worry about obtaining operation certificates, experiencing microaggressions, the lack of opportunities for "people like you," health issues, problems with their partner/spouse, and problems parenting. Top stressors for farm managers include problems with friends, saving for retirement, succession planning, working environment, problems with their partner, spouse or children, microaggressions, and the lack of a role model. Farm owners experienced less stress that they categorized as "moderate to a lot/extremely." In addition to the common stressors, farm owners were also stressed thinking about succession planning, catching COVID-19, and possible changes to farming/agricultural laws or policies.

The top three stressors impacting farmers differ across commodities. The top stressor for all commodities, is the weather and its effect on the farm. For arable farmers, saving for retirement and balancing home and work life complete the top three. For pastoral products, unexpected financial burdens and difficulty in hiring or managing employees are the two other top stressors. Cotton and wool farmers are also worrying about difficulty in hiring or managing employees, in addition to possible changes to farming laws and policies.

Worry about …	Arable, %			Pastoral, %			Cotton/Wool, %		
	Not at all	Mod.	A lot	Not at all	Mod.	A lot	Not at all	Mod.	A lot
Community discrimination	61.8%	21.5%	16.7%	49.2%	29.2%	21.7%	51.2%	33.9%	15.0%
Possible changes to farming laws & policies	45.8%	26.0%	28.1%	35.3%	34.0%	30.7%	31.0%	25.4%	43.7%
Obtaining training or employment certificates	46.9%	27.6%	25.5%	39.9%	27.7%	32.4%	38.9%	24.6%	36.5%
Directly experienced racism	59.4%	18.8%	21.9%	45.2%	27.6%	27.2%	54.0%	22.2%	23.8%
Working environment or job injuries	56.6%	27.1%	16.3%	44.4%	32.4%	23.2%	41.7%	37.0%	21.3%
Thinking about who will take over the farm when you retire	59.0%	20.0%	21.1%	42.8%	28.4%	28.8%	46.0%	26.2%	27.8%
Obtaining certain operation certifications	47.6%	24.5%	27.9%	47.9%	26.7%	25.4%	34.1%	30.2%	35.7%
Problems managing debt or the debt of a family member	54.1%	29.0%	16.9%	46.3%	31.8%	21.9%	46.1%	32.0%	21.9%
Racism in my community	56.2%	19.3%	24.5%	41.4%	31.4%	27.2%	44.9%	30.7%	24.4%
Lack of role models sharing your background	57.2%	20.5%	19.9%	39.8%	29.5%	29.1%	39.2%	28.5%	30.0%
Microaggressions	60.3%	23.5%	16.2%	52.9%	25.2%	21.9%	49.6%	29.9%	20.5%
Providing for family or community	51.0%	24.3%	24.7%	37.9%	32.1%	30.0%	44.9%	31.5%	23.6%
The weather and its effect on the farm	23.7%	32.8%	43.6%	27.7%	34.0%	38.3%	23.0%	24.6%	52.4%
Saving for retirement	33.6%	25.6%	40.8%	39.9%	30.9%	29.2%	33.3%	31.0%	35.7%
Balancing home and work life	42.6%	23.5%	33.9%	34.6%	36.3%	29.2%	41.7%	35.4%	22.8%
Non-farmer neighbors	50.2%	24.8%	25.1%	43.0%	29.1%	27.9%	46.8%	28.6%	24.6%
Lack of opportunities for “people like you”	54.6%	18.0%	27.5%	39.5%	32.4%	28.2%	35.7%	31.8%	32.5%
Unexpected financial burdens	44.9%	27.0%	28.0%	34.6%	30.9%	34.6%	37.2%	34.1%	28.7%
Difficulty in hiring or managing employees	50.4%	22.6%	27.1%	39.9%	27.3%	32.8%	35.2%	26.4%	38.4%

Coping Mechanisms

Coping mechanisms are the outlets people use to deal with stress. We asked our participants what they enjoy doing when they are feeling stressed, anxious, or depressed. The top answers were drinking alcohol (42%), exercising (38%), and engaging in a hobby (33%). The least popular choices were over-the- counter drugs, other illicit drugs, and writing in a journal. Farm owners are more likely to drink alcohol and to write in a journal to cope with stress than farm workers. Farm workers tend to hit or injure themselves more often than farm owners, as well as hit or kick things and use cannabis.

Coping Mechanism	Entire sample (N=1291)	Farm owners (N=547)	Farm managers (N=284)	Farm workers (N=460)	p-value
Drink alcohol	397 (27.9%)	164 (26.3%)	54 (17.3%)	179 (36.6%)	**<0.001**
Exercise/walk	570 (40.0%)	232 (37.2%)	122 (39.1%)	216 (44.17%)	0.06
Engage in a hobby	409 (28.7%)	184 (29.5%)	58 (18.6%)	167 (34.2%)	**<0.001**
Sleep	328 (23.0%)	167 (26.8%)	50 (16.0%)	111 (22.7%)	**0.001**
Talk to family or friends	450 (31.6%)	224 (36.0%)	69 (22.1%)	157 (21.1%)	0.123
Watch TV	384 (27.0%)	200 (32.1%)	57 (18.3%)	127 (26.0%)	**<0.001**
Spend time with pets	237 (16.7%)	165 (26.5%)	24 (7.7%)	48 (9.8%)	**<0.001**
Pray or other religious act.	281 (19.7%)	214 (34.4%)	26 (8.3%)	41 (8.4%)	**<0.001**
Draw or paint	171 (12.0%)	52 (8.4%)	67 (21.5%)	52 (10.6%)	**<0.001**
Spend time alone	254 (17.8%)	127 (20.4%)	20 (6.4%)	107 (21.9%)	**<0.001**
Hit or injure myself	75 (5.3%)	33 (5.3%)	18 (5.8%)	24 (4.91%)	0.86
Meditate	152 (10.7%)	92 (14.8%)	18 (5.8%)	42 (8.6%)	**<0.001**
Hit or kick things	89 (6.3%)	37 (5.9%)	21 (6.7%)	31 (6.3%)	0.89
Talk to counselor	60 (4.2%)	32 (5.1%)	9 (2.9%)	19 (3.9%)	0.235
Cannabis	81 (5.7%)	37 (5.9%)	16 (5.1%)	28 (5.7%)	0.877
Write in Journal	73 (5.1%)	27 (4.3%)	24 (7.7%)	22 (4.5%)	0.084
Other Illicit drugs	54 (3.79%)	25 (4.0%)	14 (4.5%)	15 (3.1%)	0.542
OTC drugs	31 (2.2%)	18 (2.9%)	3 (1.0%)	10 (2.0%)	0.127

Coping mechanisms by generational status

On average, generational farmers (3.4 ± 1.8) use more different coping mechanisms than first-generational farmers do (2.4 ± 1.8), which may explain why first-generation farmers are feeling more stressed on average. In the below table, we see that first-generation farmers and generational farmers use different coping mechanisms.

Coping mechanism	Entire sample (N=1288)	First-generation farmers (N=760)	Generational farmers (N=528)	p-value
Exercise/walk	504 (39.1%)	239 (31.5%)	265 (50.2%)	**<0.001**
Talk to family or friends	401 (31.1%)	195 (25.7%)	206 (39.0%)	**<0.001**
Engage in a hobby	365 (28.3%)	149 (19.6%)	216 (40.9%)	**<0.001**
Drink alcohol	350 (27.2%)	182 (24.0%)	168 (31.8%)	**0.002**
Watch TV or read	341 (26.5%)	150 (19.7%)	191 (36.2%)	**<0.001**
Sleep	283 (22.0%)	134 (17.6%)	149 (28.2%)	**<0.001**
Pray or other religious	235 (18.3%)	85 (11.2%)	150 (28.4%)	**<0.001**
Spend time alone	214 (16.6%)	79 (10.4%)	135 (25.6%)	**<0.001**
Spend time with pets	193 (15.0%)	83 (10.9%)	110 (20.8%)	**<0.001**
Draw or paint	158 (12.3%)	129 (17.0%)	29 (5.5%)	**<0.001**
Meditate	137 (10.6%)	93 (12.2%)	44 (8.3%)	**0.025**
Hit or kick things	82 (6.4%)	62 (8.2%)	20 (3.8%)	**0.002**
Cannabis	70 (5.4%)	21 (4.0%)	49 (6.5%)	0.051
Hit or injure myself	69 (5.4%)	55 (7.2%)	14 (2.7%)	**<0.001**
Write in Journal	62 (4.8%)	41 (5.4%)	21 (4.0%)	0.243
Other Illicit drugs	48 (3.7%)	37 (4.9%)	11 (2.1%)	**0.010**
Talk to counselor	47 (3.7%)	25 (3.3%)	22 (4.2%)	0.409
OTC drugs	23 (1.8%)	9 (1.2%)	14 (2.7%)	0.051

PSS by coping mechanisms

The highest PSS scores are seen in those who hit or kick things, talk to a counselor and use cannabis. Orange PSS scores are significantly higher than those who DO NOT use the coping mechanism. Blue PSS scores are significantly higher than those who DO use the coping mechanism.

Coping Mechanism (AVG Score ± SD)	PSS score of those who **use** coping mechanism	PSS score of those who **do not use** coping mechanism	p-value
Hit or kick things	21.3 ± 4.4	18.0 ± 5.4	**<0.001**
Talk to counselor	20.4 ± 4.4	18.1 ± 5.4	**<0.001**
Cannabis	20.2 ± 4.0	18.1 ± 5.5	**<0.001**
Over-the-counter drugs	19.7 ± 4.6	18.2 ± 5.4	0.057
Hit or injure myself	19.7 ± 3.7	18.1 ± 5.5	**<0.001**
Other Illicit drugs	19.6 ± 3.3	18.1 ± 5.5	**0.002**
Drink alcohol	19.5 ± 4.8	17.7 ± 5.6	**<0.001**
Draw or paint	19.1 ± 3.5	18.1 ± 5.6	**<0.001**
Spend time alone	19.0 ± 5.4	18.0 ± 5.4	**0.005**
Meditate	18.1 ± 4.7	18.2 ± 5.5	0.658
Sleep	17.9 ± 5.8	18.3 ± 5.3	0.268
Engage in a hobby	17.7 ± 5.3	18.4 ± 5.5	**0.022**
Spend time with pets	17.6 ± 6.2	18.3 ± 5.2	0.059
Talk to family or friends	17.4 ± 5.7	18.6 ± 5.2	**<0.001**
Write in Journal	17.3 ±5.5	18.2 ± 5.4	0.137
Exercise/walk	17.3 ± 5.6	18.9 ± 5.2	**<0.001**
Watch TV/read	16.8 ± 5.8	18.8 ± 5.1	**<0.001**

DISCUSSION

Throughout this study, we were able to confirm that farming is indeed a stressful occupation. Exposure to high stress over long periods of time negatively impacts physical and mental health, which can lead to the development of stress-related diseases and disorders (Kubo et al., 2015).

Around half the farmers were not happy about being a farmer once a month or more often. Our sample experienced high levels of stress from both common stressors (e.g., work-life balance, COVID-19) and agricultural stressors (e.g., weather effects, succession planning). The farmers also reported stress from lack of access to healthcare and basic care, with about 60% not having access to routine medical care. About half the farmers do not have healthcare insurance. Role differences between farm workers, farm managers, and farm owners existed throughout the results. In addition, being a first-generation farmer came with not only higher stress than generational farmers, but also had a markedly higher rate of suicidal ideation.

Our study illustrates a critical need for research and interventions related to farmer mental health. There is increased attention on mental health by policymakers both national and state. Additional data from research studies like this would help target initiatives to maximize the impact of mental health services for farmers. We urge for a community-based, family-oriented approach with additional emphasis on first-generation farmers.

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