

Characteristics and Contextual Stressors in Farmers and Agricultural Worker Suicides in Georgia, 2008-2017

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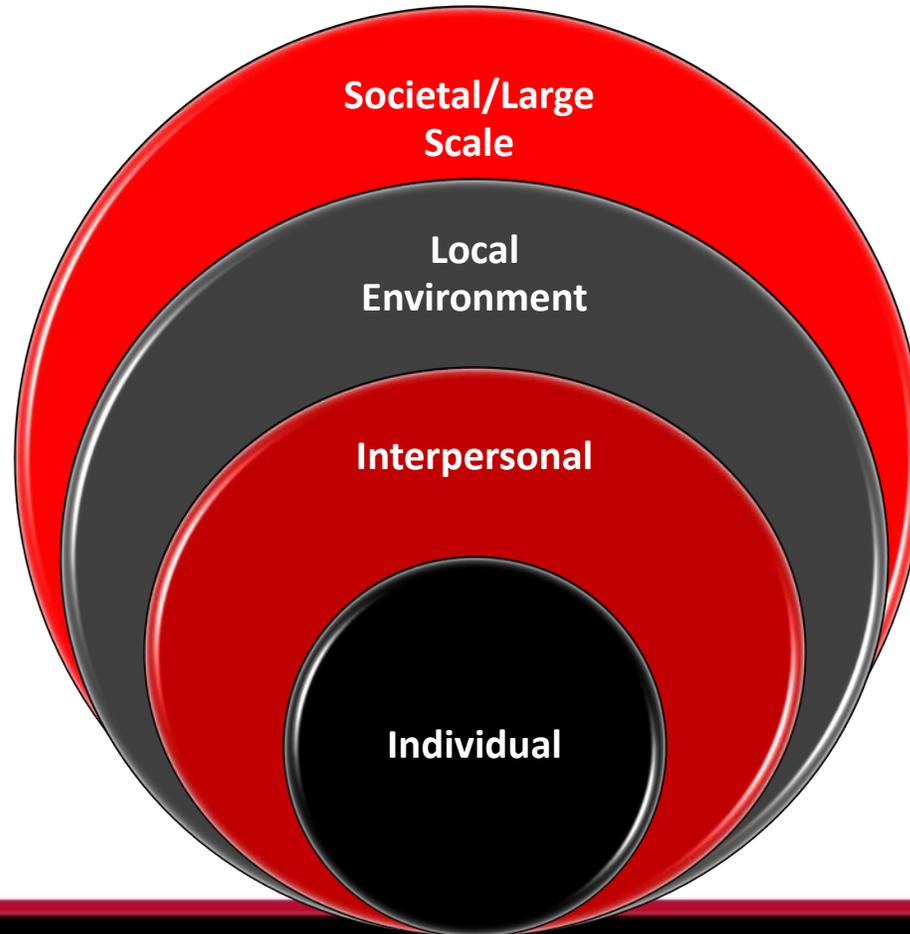
A Crisis in Farmer Well-Being

- CDC study revealed Farming, Fishing, Forestry had 3rd highest suicide rate of any occupation (CDC, 2018)
- In Georgia, rate was nearly 51 per 100,000, compared with 14.9 per 100,000 for overall population of workers (Lavender et al., 2016)



How do we Conceptualize This?

Social Ecological Framework



Individual Factors Identified in the Literature

- Depression and mental illness may be elevated in farmers (Arnautovska, et al., 2016)
- Health challenges and injuries (Kunde, et al., 2017)
- Stress (Kutek, Turnbull & Fairweather-Schmidt, 2011)
- Demographic risk factors: age and gender (Garnham & Bryant, 2014)
- Challenges to identity (Roy, Tremblay, Robertson & Houle, 2017)



Interpersonal Factors

- **Social isolation** (Kennedy, Maple, McKay & Brumby, 2014)
- **Increased dependence on smaller network of relationships** (McLaren & Challis, 2009)
- **Stress impacts in couple relationships** (Rayens & Reed, 2014)



Local Environmental Factors

- **Cultural** (Broffman, et al., 2017; Judd, et al., 2006)
 - Pride in independence
 - Stigma in help-seeking
 - Lack of awareness of mental health issues
- **Physical**
 - Ease of access to firearms (Kunde, et al., 2017)
 - Link between depression and pesticide exposure (Onwuameze, Paradiso, Peek-Asa, Donham, & Rautiainen, 2013)
 - Lack of adequate health/behavioral health services (Byrne, Happell, & Reid-Searl, 2017)

Societal/Large Scale Factors (Perceval, Kolves, Ross, Reddy, & De Leo, 2018)



- Weather
- Fluctuation in crop prices
- Changing regulations
- Changes in policy and legislation

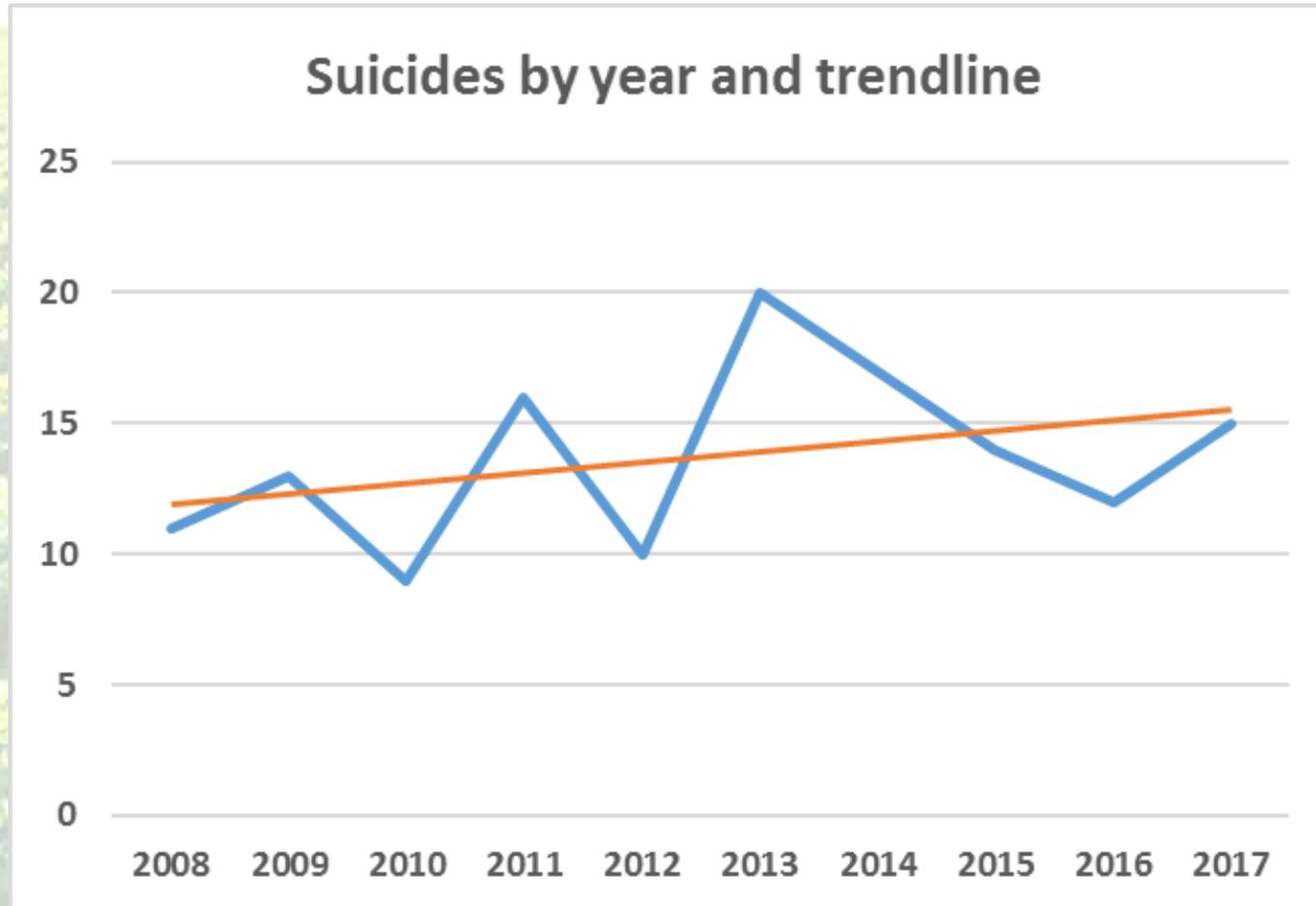
This Study: What is happening in Georgia?

- Bulk of research done outside the US
- Patterns vary geographically
- Findings are statistical, or interviewing those with suicidal ideation
- *What are the characteristics of farmers and agricultural workers who have died by suicide in Georgia, and what factors are associated with these deaths?*

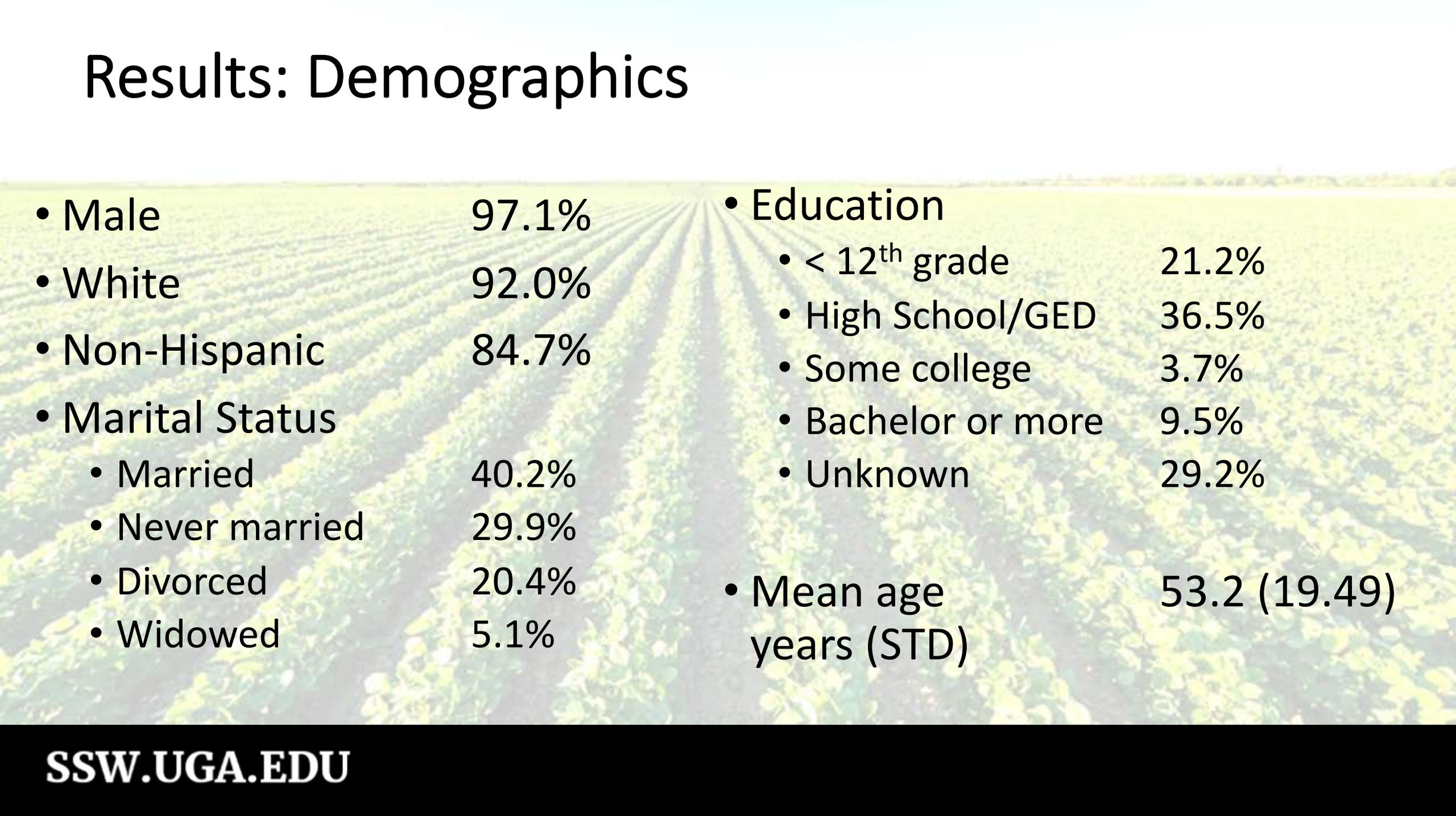
Method

- Used GA VDRS data from 2008-2017
- Extracted all cases positive for variable Cause of death: Suicide
- Reviewed all cases containing the terms “farm,” “farmer,” “agricult” “poultry,” or “cattle” and extracted all case with indication that the individual was an agricultural worker or farmer. N=137 out of 12,453
- Quantitative: Death per year, demographics, means of death, presence of substances
- Qualitative: thematic analysis of coroner/ME report and law enforcement report summaries

Results: Numbers and Trend



Results: Demographics



• Male	97.1%	• Education	
• White	92.0%	• < 12 th grade	21.2%
• Non-Hispanic	84.7%	• High School/GED	36.5%
• Marital Status		• Some college	3.7%
• Married	40.2%	• Bachelor or more	9.5%
• Never married	29.9%	• Unknown	29.2%
• Divorced	20.4%	• Mean age	53.2 (19.49)
• Widowed	5.1%	• years (STD)	

Results: Presence of Substances

- Was toxicology report available?
 - Yes 46.0%
 - No 32.1%
 - Not documented 21.9%
- Were substances present or an issue? (Toxicology or noted in reports)
 - Toxicology: 13 alcohol 6 other substance
 - From reports: additional 7 alcohol 2 polysubstance
 - TOTAL: 28 (20.4%)

Results: Means of Suicide

	n	%
Gunshot wound	106	77.37%
Head	80	58.39%
Chest	19	13.87%
Other	7	5.11%
Carbon monoxide	1	0.73%
Hanging	23	16.79%
Stabbing	2	1.46%
Poison	2	1.46%
Jump in front of car	1	0.73%
Disconnect medical device	1	0.73%
Jump out window	1	0.73%

Results: Factors Associated with Suicide (C/ME or LE)

- So much missing data from reports

Unknown	48	35.04%
missing	23	16.79%
no factors noted	25	18.25%

Results: Factors Associated with Suicide (C/ME or LE)

		Of total (n=137)	Of data (n=89)
Relationships	34	24.82%	38.20%
conflict	20	14.60%	22.47%
loss	14	10.22%	15.73%
Health	31	22.63%	34.83%
Finances	11	8.03%	12.36%
Mental Health Problems	26	18.98%	29.21%
current	13	9.49%	14.61%
history	13	9.49%	14.61%
Prior S attempts/threats	18	13.14%	20.22%
Current S threats/ideation	18	13.14%	20.22%
MH Tx current/recent	7	5.11%	7.87%
Suicide signs	19	13.87%	21.35%
words and behaviors	9	6.57%	10.11%
"been depressed"	10	7.30%	11.24%
CJ	5	3.65%	5.62%

Relationship Issues

- Conflicts with wife/girlfriend

“Victim and his [primary relationship] were fighting about Victim’s heavy drinking, [with the primary relationship] wanting Victim to get help for his drinking...[primary relationship]stated that they cooked dinner and they were still fighting about his drinking and the Victim stated he would just kill himself...then she heard the gun go off.”

- Conflict with other family

- Loss

“The Victim was upset because his [relationship] was placed in an out-of-state assisted living home”



Health Struggles

- Chronic health problems and lost of functioning

Victim with a history of diabetes and cardiac problems reported told his family he was “tired of being a burden to them” because of his need for personal care assistance.

- New diagnosis

“[the] Victim was agitated about his condition and started talking suicide after his lung surgery [which revealed cancer].”

- Chronic pain

“The Victim’s [close relative] advised that the decedent was depressed and voiced suicidal ideation in the past month because he was ‘hurting so badly and did not want to live anymore’...The Victim’s medical history included cardiovascular issues, chronic pain, degenerative arthritis, knee replacement, shoulder surgery, and ostomy due to colitis.”

Suicidal Threats and Signs

- Prior suicidal threats

“Law enforcement had been called to the residence numerous times for past suicide attempts by the Victim.”

- Behavioral signs

“[the] Victim showed [a close family member] where he kept all his important papers and will the night prior to the incident.”

- Family dismissal

“He threatened to kill himself but none of his family took it seriously because he had made similar threats in the past.”

In 18 cases family was aware of threats; in only 3 of these was it noted the individual was taken for mental health services in response.

Financial Stress

- Loss of job

“Victim was out of work and couldn’t support his family.”

- Financial problems linked with health problems

“Victim was depressed because of financial problems & declining health. Victim had a heart attack 3 months prior. V[ictim]’s [primary relationship] had lost her job and there were hospital bills.”

In over a third of the cases multiple factors, such as health and finances, were present.



Farm foreclosure sale, ca. 1933. National Archives.

Discussion and Implications

- Health and the inability to work as a precipitant
- Financial stress less frequent than expected (but must remember financial stress could underlie other issues such as health concerns)
- Suicidal threats (20%) and family (in)action
- Suicidal signs (21.4%)and lack of recognition
- Mental health problems noted in only 29% of cases

Future Directions

- Need to know much more
 - National data
 - MISSING DATA, esp. related to substances and C/ME reports
- Targets for intervention
 - Health: primary MD and rural health clinics
 - Relationships and loss: faith leaders, divorce lawyers, assisted living facilities, funeral homes
 - Financial stress: banks, extension agents



Extension Agents (Holt, Crosby, Lamm, Borron, Lamm, 2019)

- Survey of Georgia extension agents (N=281) in early 2019
- *What is your comfort level addressing rural stress/mental health issues in your county?*
 - 1=low, 5=high level of comfort
 - **Mean= 2.79**



Extension Agents (Holt, Crosby, Lamm, Borron, Lamm, 2019)

- What is your level of concern about these stressors in your county? (1=low, 5=high level of concern)

	Mean Score
Concern to make ends meet	3.76
Concern for weather-related issues	3.73
Concern for cash-flow in the operation	3.63
Concern about stress among families	3.54
Concern for crop/livestock prices	3.54
Concern to get needed financing to continue	3.53
Concern for market and trade issues	3.5
Concern for mental health or suicide risk	2.9

Conclusion

- Farmers and agricultural workers demonstrate strength and resilience in the face of many challenges and hardships.
- Recent events—weather, tariffs, trade issues—exacerbate the stress this population feels.
- There are multiple points of leverage in rural communities that can be used to prevent death by suicide among farmers and agricultural workers.
- Extension agents are a promising point of intervention, but need education and support to be comfortable and effective in promoting suicide prevention strategies.

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