"I Would Go if My Arm Were Hanging off": A Qualitative Study of Healthcare-Seeking Behaviors of Small Farm Owners in Central New York State

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ABSTRACT. *Compared to their rural non-farming peers, farmers are less likely to access preventive healthcare services; however, the reasons for this disparity are poorly understood. We conducted semi-structured interviews with a total of 30 farm household members in central New York. Interview topics included farming identity, perceptions of one's health, past experiences with acute and preventive healthcare, and attitudes toward seeking healthcare services. Grounded Theory analysis of the interview transcripts revealed that (1) utilizing healthcare services is felt to be in conflict with the farming identity, (2) the need to conserve time and money for farm applications poses a barrier to healthcare utilization, (3) farmers decide to seek healthcare when they believe it is necessary to ensure survival of the farm, and (4) the decision to seek healthcare is most strongly driven by the presence of intolerable symptoms, prompting from others, and the perception that treatment will yield clear benefits. Efforts to increase farmers' utilization of healthcare services must address these considerations.*

Keywords. *Agriculture, Farm identity, Healthcare access, Healthcare-seeking behaviors.*

In the U.S., rural populations experience disproportionately elevated mortality rates compared to urban populations, a phenomenon that has been termed the "rural mortality penalty" (Cosby et al., 2008). In recent decades, metropolitan areas have experienced a significant decline in all-cause mortality, a trend that has not been observed in rural areas (Cossman et al., 2010). This finding suggests that disparities in access to healthcare services may contribute to the rural mortality penalty, as rural populations become less likely to benefit from advancements in medical care (Cossman et al., 2010). For example, compared to their urban counterparts, rural men are more likely to present with late-stage prostate cancer and suffer increased prostate cancer mortality rates (Jemal et al., 2005). Similarly, statin prescription rates are lower in rural Australia than in urban centers (Stocks et al., 2009).

Within rural populations, the agricultural community experiences unique health risks (Earle-Richardson et al., 2015). The burden of injury and disease in farming populations

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has been explored in previous studies (Donham and Thelin, 2006; Rautiainen and Reynolds, 2002). These studies indicate that farming is a hazardous occupation, with an estimated 5% to 10% of farmers sustaining an agricultural injury each year (McCurdy and Carroll, 2000). Dairy farming in particular is associated with a high rate of animal-related injury; one study found that farmers who spend 30 hours per week milking cows have a 20-fold increase in the risk of animal-related injuries (Boyle et al., 1997). The influence of farming on chronic disease prevalence is mixed: while farming is associated with lower rates of asthma and cardiovascular disease (Jenkins et al., 2005), rates of chronic musculoskeletal diseases such as hip osteoarthritis are higher in agricultural populations (Thelin and Holmberg, 2007).

Improving the health of agricultural populations will require emphasis on modifiable risk factors that are specific to farmers. Previous studies have described the challenges in reducing sun exposure (Carley and Stratman, 2015), excessive noise (McCullagh and Robertson, 2009), and risk of traumatic injuries among farmers (Hagel et al., 2008; Hartling and Pickett, 1998). Access to healthcare is another crucial aspect of minimizing disease risk. One study in rural New York State found that when compared to the rural non-farming population, farmers are less likely to have a regular doctor and to receive preventive services, such as blood pressure measurements, colonoscopies, and Pap smears (Earle-Richardson et al., 2015). The reasons for this disparity are poorly understood, and qualitative studies exploring healthcare use by farmers could not be identified in the literature. Understanding how and why farmers access healthcare services is vital to ensuring timely and effective access to acute and preventive medical care for this vulnerable population.

This study aims to bridge the gap in understanding by characterizing the process that farmers use to decide whether or not to seek medical care. We describe barriers to accessing care, as reported by farmers, as well as the factors that motivate the decision to seek treatment. These insights are fundamentally important to the design of effective public health and medical outreach programming for farming communities.

Methods

Sample

Study participants were recruited from an eight-county region served by the Bassett Healthcare Network, an integrated network of hospitals, ambulatory clinics, and school-based health centers in central New York State. Small dairy farms and diversified farms comprise the majority of agricultural activity in this region and were therefore chosen as the target population of this study.

Convenience sampling was initially used to recruit participants, who were identified through referrals from other farmers, web searches, and past participation in New York Center for Agricultural Medicine and Health (NYCAMH) programming. Two participants were also recruited in person at local farmers' markets. Once several core categories emerged from initial interviews, theoretical sampling was used to recruit participants. For example, characteristics hypothesized to be associated with infrequent healthcare use included a lack of health insurance coverage and self-identification with an "older generation" of farmers; participants with these qualities were preferentially sought in later interviews.

Participants were initially contacted by telephone or in person on their farms and offered a brief description of the study and the role of NYCAMH, and interviews were scheduled

Table 1. Source of insurance for participants.[a]

Source of Insurance	Dairy Farmers 14 (25)	Diversified Farmers 3 (5)
Off-farm employer	5 (9)	1 (1)
Medicare or Medicaid	6 (10)	1 (1)
Individual insurance policy	3 (3)	1 (2)
Uninsured	2 (3)	1 (1)

[a] Counts shown as: number of households (number of individuals).

with those who indicated interest in participating. In total, 44 households were contacted directly, of which 18 were unable to be reached. Of the 26 households with whom contact was established, 17 agreed to participate and were subsequently interviewed, for a response rate of 65%.

Many interviews included more than one individual, as others were invited to join the discussion if interest was demonstrated. Inclusion of these additional participants brought the total number to 30 participants. Eleven married couples, two unmarried couples, three male farmers, and one farmer's wife were interviewed. Table 1 lists the insurance status and farm commodities of the interview participants.

Protection of Rights of Study Participants

The study was approved by the Bassett Healthcare Network Institutional Review Board. The subjects were briefed on the purpose of the study as well as their rights as research participants prior to initiating each interview. Permission was also obtained for audio recording of each interview. Signed informed consent was obtained from all participants including principal farm operators and family members. A small meal (valued up to $10) was provided to participants for their time.

Data Collection and Analysis

Semi-structured in-depth interviews were conducted using a moderator's guide designed to elicit discussions about farming identity, perceptions of one's health, past experiences with acute and preventive healthcare, and attitudes toward seeking healthcare services. All interviews took place on the participants' farms and were conducted by the lead author. Audio was recorded and transcribed verbatim for each interview in its entirety to ensure data accuracy. The interviews were transcribed and analyzed promptly so that themes emerging in these transcripts could be explored in subsequent interviews. Memos were also used to track primary themes arising in each interview. The moderator's guide was adapted to explore these emerging themes. For example, early interviews featured discussions of a perceived "generation gap" in which younger farmers were more likely to seek healthcare than "the older generation." Participants were subsequently asked to contrast their health behavior with that of their parents. Interviews continued until reaching a point of saturation, meaning that no new themes emerged from participants.

The purpose of this study was to develop an explanatory model of a farmer's healthcare decision-making process. To accomplish this, the researchers chose to use a Grounded Theory analytical framework, which allows qualitative researchers to move beyond descriptive analysis in order to develop theoretical models with explanatory power. Grounded Theory provides a structure for analyzing data and developing behavioral models by uncovering the major themes in a set of data and describing the relationships between these themes. It also permits researchers to explore both the manifest (i.e., the words as stated by the research subject) and latent (the subtext or implied messages that lie beneath the words

themselves) meaning in subject communications. This allows researchers to abstract the data and provide their personal interpretation of what is being discussed by the subjects.

To do this, interview transcripts were analyzed by two of the authors (Droullard and Tinc) using NVivo 10 data analysis software (QSR, 2012). Open coding was used to analyze the initial transcripts, followed by selective coding once consistent themes had emerged. Initial open codes were audited by author Sorensen. As codes were developed, they were grouped into categories that represented the central idea common to each group of codes. Core categories were identified as those that captured the major themes that were relevant to the original research question. Relationships between these core categories across interviews were also examined and compared to existing explanatory behavioral models that could shed light on the thought and behavioral processes emerging from the data. During this analysis, the researchers moved back and forth between the transcripts, the derived categories, and existing explanatory models, refining them until the major factors involved in the healthcare-seeking process had emerged. This article presents the core categories that were generated in this process, with direct quotations from participants to illustrate how these categories or themes emerged from participant discourse.

Results

Our interviews with farm household members revealed several key factors that influence a farmer's decision to access healthcare. First, we found that farmers endorsed a "farming identity" characterized by resilience, work ethic, and self-reliance that was felt to be in conflict with healthcare-seeking behavior. In addition, our participants described an overriding need to conserve the resources of time and money to preserve the farm's survival. In this context, farm survival is defined as one's ability to continuing operating the farm and providing for one's family, for as long as the operator is able. Despite these barriers, the farmers in our study reported accessing healthcare with varying degrees of regularity. This suggests that farmers could be led to believe that seeking care was both congruent with their core beliefs and necessary for farm survival. This belief was likely to occur when farmers were experiencing severe symptoms (e.g., pain or bleeding), were influenced by their spouse or another social contact, or when seeking care had clear advantages that could otherwise not be attained. In the following sections, we describe each of these factors individually and discuss how they interact to determine a farmer's healthcare-seeking behavior.

The Farm Environment Cultivates the Farming Identity

When asked to describe their farm operations, our participants were quick to detail the many pressures of farming and the ways in which a farmer must constantly adapt to them. As one farmer noted, "The farm, weather, and the equipment pretty much dictate what you're actually going to do on any given day." Factors outside the farmer's control strongly influence the survival of the family farm, as described by another participant:

> *"No, it's like you're steering this really big ship, and you hope it goes straight. There's so much that's out of your control. Obviously, there are certain factors that you're in control, but that's basically on, like, the input side, which you don't have control over your price, you don't have control over what you're paying, you don't have control over the weather, you don't have control over animals dying, you know, it's all those kinda things that you just kinda have to*

deal with." (Dairy farmer)

In this highly uncertain environment, farmers only have control over their own actions, yet they also bear the ultimate responsibility for the survival of the farm. Operating without outside support, farmers must adapt to overcome the challenges of farming on their own:

> *"Yeah, if something breaks it doesn't matter what you had planned, you've got to get that fixed, especially if you're in a haying situation. You can wait for somebody to come out here. You're lucky if you can call somebody that can come over and help you. Usually that doesn't happen because if you're haying everybody else is haying, and they're busy, too. So you have to get down there, fix it, take it off, get the part, get it back on, get it running." (Diversified farmer)*

The adaptive response to this situation is to develop a strong sense of self-reliance, as indicated by our participants' responses when asked to describe the attributes of a successful farmer:

> *"You've got to be ambitious, self-starting. You can't be one who wants to sleep until ten because that's not going to happen. You won't be successful as a dairy farmer because there's stuff to do all the time. The animals depend on you being there to feed them and to take care of them." (Dairy farmer)*

> *"You've got to have basically a jack of all trades. You've got to be able to do a little bit of everything and know a little bit of everything. I would say and be able to work regardless, not be afraid to work." (Dairy farmer)*

Not only is this identity of self-reliance necessary to ensure farm survival, it is seen by our participants as a quality that distinguishes them from non-farmers:

> ***Woman**: "His fear has always been that he will end up in a nursing home in a room next to that sort of person who didn't work through his life, who screwed up his whole life, and they'll be side by side in the nursing home."*
>
> ***Dairy farmer**: "Eating the same gray meat."*
>
> ***Woman**: "After working like a dog forever."*

By drawing this explicit contrast with "that sort of person," who is cast in a negative light, this participant highlights the importance of this quality to a farmer's sense of self. Indeed, farmers in this study were quick to describe their work ethic in contrast with non-farmers:

> *"This past February was the first time I've taken a vacation in eight and a half years. I want to see doctors and those guys do that. Work seven days a week, 12 to 16 hour days." (Dairy farmer)*

The underlying message is clear: self-reliance is a unique and necessary component of the farmer's identity.

The Farming Identity Regulates Farmers' Healthcare-Seeking Behaviors

This farming identity has significant implications for farmers' use of healthcare resources. When asked to describe their use of healthcare, most participants in this study

offered some variation of the statement "If I think I can get by without going [to the doctor], I don't go." Just as participants described a farming identity that distinguishes them from "other people," they defined their use of healthcare by contrasting their typical behavior with that of non-farmers:

> *"I'm kind of one I don't go unless I absolutely have to. When I go, there's something wrong. Other than that, I don't. If I smash a thumb, I don't call an ambulance. There's people that do, but I do not." (Dairy farmer)*

> *"We're not your run of the mill people. We're independent as a farmer. We feel resilient enough we don't have to run to the doctor just because we've got the sniffles or something like that. A lot of people do." (Dairy farmer)*

Seeking treatment for symptoms that are seen as "minor" to the farmer can compromise this identity and remove the source of pride that allows farmers to distinguish themselves from "other people." Instead, farmers prefer to prove their self-reliance by self-treating, whenever possible:

> ***Interviewer**: "For you what does that look like when you absolutely need to [seek treatment]?"*

> ***Dairy farmer**: "When it's something I know I can't handle myself basically."*

> ***Interviewer**: "What are the sorts of things that you have handled yourself?"*

> ***Dairy farmer**: "I cut my thumb open with the table saw. I just wrapped it up and kept on going."*

Furthermore, to seek healthcare is to take on the role of the patient, which is defined by illness and dependence, in contrast to the vigor and independence necessary to sustain a farm. In one farmer's words, "I'm just not a big fan of hospitals and all that. It's for sick people."

The Need to Conserve Resources Regulates Farmers' Healthcare-Seeking Behaviors

In addition to cultivating the farming identity, the many pressures of farming demand a firm commitment to protecting farm survival above all other priorities. Conservative use of resources, mainly time and money, is critical to protecting the farm:

> *"At one point in time, we got $50 a month to spend any way we wanted to. That was a pretty big joke around the neighborhood when that got out. She's right, that's how we did it. We've never had a new pickup truck, ever. We have bought used and maybe we bought two new tractors over 40 years. We've bought used stuff and fixed, tried to live cheap again." (Dairy farmer)*

> *"Farmers are up at 4:00 and out the door, and a lot of them don't have time for anything else but the farm." (Dairy farmer)*

For the farmers in this study, healthcare was seen to have high costs in terms of both time and money and was thus at odds with the need to safeguard resources for the sake of the farm.

Conserving Time

For participants, taking time away from the farm is considered a significant barrier to seeing a healthcare provider or, realistically, any outside activities. Principal farm operators were felt to be irreplaceable on the farm due to their specific knowledge of farm operations and the lack of adequate hired help. Participants described the time pressures of dairy farming as prohibitive to healthcare use:

> *"And the farmer's biggest thing is time. I haven't got time to go to the doctor. How often have I told you that? I have work to do." (Dairy farmer)*

The cost of a farmer's time was felt to be especially prohibitive for types of care that were potentially time-consuming, such as hospital admissions or extended recovery periods associated with surgery:

> *"That was one of my biggest things was being laid up. I was going to have my hip replaced. They talked six to eight weeks [of recovery]. I can't take off. My brother can't handle that for that amount of time." (Dairy farmer)*

Time away from the farm is, in and of itself, a barrier. The timing of health needs with respect to farm tasks was a major determinant of the ease or difficulty of seeking healthcare, as one farmer's wife stated: "He won't go to the doctor if it's a sunny day and he's got to make hay." Acute health needs, such as traumatic injuries, often arose in the setting of a critical farm task that could not be delayed. For example, one injured dairy farmer described needing to finish feeding his cows instead of seeking treatment:

> *"That bone right there just poked out like that. It didn't come through the skin but it broke right in two. I said I've got cows to milk. I can't milk with one hand, so I taped those two fingers together and kept going." (Dairy farmer)*

Conserving Money

Farmers in this study also reported a tendency to abstain from seeking healthcare in order to avoid incurring financial costs. Under the many financial pressures of a family farm with one owner-operator, healthcare expenditures pose a significant threat to farm survival, and farmers employ coping mechanisms such as delaying and avoiding medical care in order to mitigate this risk. An uninsured participant described avoiding preventive visits in order to avoid out-of-pocket costs:

> *"With no healthcare, I don't know what it costs to go in and have a routine physical. If you can't afford healthcare, you can't afford to go see a doctor every year either." (Dairy farmer)*

Another uninsured participant described not seeking treatment for an injury because of her concerns about the cost of doing so:

> *"A goat bit me, and it really needed stitches. You know I put band-aids upon band-aids and it kept bleeding and opening up, and I actually don't have any feeling in it right now, because I think I might have hurt a nerve, but I stayed home. I'm not going to go to [the hospital] and impose on them and have them treat me and then not be able to pay them promptly or pay them at all, because it's not cheap." (Diversified farmer)*

One insured participant reported that prior to obtaining health insurance, he delayed repair of a symptomatic hernia for three years because "We didn't have the money to go." Even with insurance coverage, out of pocket costs could be prohibitive for participants with health issues requiring frequent expenditures or requiring extensive procedures:

> *"I was supposed to have an electrocardiogram, and I said no because I can't do it. I didn't do it. I just can't afford it anymore. I'm supposed to go back with blood. They like it a certain number, and if I'm not there you go back and recheck. Nope, I won't recheck it. I can't. I try to go once a month, and it does vary at times, but I said I just can't do it. I can't afford it. Even our groceries, we have to cut our groceries to come up with the bills." (Diversified farmer)*

When Do Farmers Access Healthcare?

Despite the nearly unanimous endorsement of the idea that the typical farmer never goes to the doctor, most participants in this study actually described regular use of preventive services, and all participants described at least one instance in which they or a family member sought treatment for an acute issue. This behavior was in clear conflict with their stated beliefs about the farming identity. However, as described above, the farmer's first priority is to ensure survival of the farm. The interviews in this study shed light on the ways in which seeking healthcare can be viewed as consistent with this aim.

First, as discussed above, farm survival is a farmer's first priority. Because of the physical labor involved in running a farm, some farmers in this study described the importance of the farmer's health as a key factor in farm survival:

> *"It's when everything's on your shoulders and you don't have a checkbook and you don't have health, you might just as well get out of farming. You're not going to make it." (Diversified farmer)*

> *"But I think a farm to a certain degree forces you to be healthy. Otherwise you're not going to have a farm, which means that you try to take care of yourself, and even if you hurt some place you still have to do what has to be done. So you become, as in my case, more and more cautious about what you do that could put you down. So in a way I think that helps you stay healthy. Being conscience of the consequences." (Diversified farmer)*

> *"Well, I want to keep myself healthy because you have to stay healthy or you can't withstand this kind of work. And just because I want to be healthy. I don't want to be sick." (Vegetable farmer)*

For these farmers, accessing healthcare could be seen as congruent with the goal of protecting the farm, rather than in conflict with that goal. In our interviews, we identified three major factors that led farmers to develop this belief: the severity of their symptoms, influence from others, and the anticipated benefits of seeking care.

Severity of Symptoms

Most instances of acute care described by the participants were primarily motivated by the presence of intolerable symptoms. Most commonly, these symptoms were either severe pain or uncontrollable bleeding provoked by a farm injury. Inability to continue working was the primary threshold for determining that a symptom justified seeking treatment:

> ***Interviewer**: "What's the threshold for if it's serious?"*

***Dairy farmer**: "Whether you can walk or not."*

"Your tolerance of pain has a lot to do with it. How much you can put up with and keep working." (Dairy farmer)

One farmer sought evaluation for shortness of breath when she found herself needing to take frequent breaks from her work:

"That's what got me [to go to the doctor] because as a farmer—if you know a farmer—we just go. We do work until we can't stand up, and when you can't you wonder why you can't do this anymore." (Dairy farmer)

The farmer with the untreated hernia stated that he finally underwent surgery when "in the end it got so bad that I couldn't stand it." When a farmer's symptoms become severe enough to impair the ability to work, seeking treatment becomes justified.

Input from Others

Although some participants reported making the decision to go to the doctor on their own, many cited input from another individual in making this determination. In most cases, the farmers indicated that a close family member, such as a spouse or child, was likely to be the most influential person in determining whether or not to seek care. In other cases, influential "others" were described as off-duty medical personnel, such as a friend or acquaintance working as a healthcare provider:

"So my wife and daughter looked at it and said you're going to the hospital." (Dairy farmer)

"All of a sudden, I just got sweating. I couldn't stop sweating. I felt a little nauseated. I set down and said I must be catching the flu or something. So my boss wanted to take me to the hospital. I said no, take me home. I just don't feel good. She wouldn't let me drive home. She brought me home. Then he had a friend that has a son that's a nurse at Bassett. They came over and took a look at me and said no, you better take her to the hospital." (Dairy farmer)

Allowing another person to make the decision to seek care may ease the conflict with the farmer's self-identity of resilience and self-reliance. Instead of actively taking action that is in conflict with this identity, farmers may passively acquiesce to the insistence of their spouses. As one farmer stated with regard to primary care visits, "I go when my wife tells me to go."

Anticipated Benefits of Seeking Care

Seeing a doctor could be justified if doing so would yield clear benefits to a farmer's health and therefore to farm survival. Participants who made statements such as "I'm not a guy that's fond of hospitals" still reported accessing preventive services, especially when the benefits of doing so were clear. Blood pressure readings, cholesterol and blood sugar measurements, and cancer screenings were all cited as beneficial services that justified going to the doctor:

"I kind of keep close tabs, know what's going on with my cholesterol, my blood pressure, and all that." (Dairy farmer)

The cited benefits of these diagnostic services were twofold: to have "peace of mind,"

know that "nothing is out of kilter," and to be able to intervene early in the event that a problem is uncovered. In addition, preventive care was described as analogous to "preventive maintenance," a metaphor well understood by farmers as operators of heavy equipment:

> *"We know what preventive maintenance is, and we know what being a little proactive is, and I'm not really the one to talk, but I'm not really opposed to going, if I have to." (Dairy farmer)*
>
> *"I think the younger generation realize they've had it drilled in about healthcare and that kind of stuff and things that are important to keep you going. Maintenance and things like that. It's like changing the oil on your car and stuff like that. Take care of them things or they're not going to be around." (Dairy farmer)*
>
> ***Interviewer**: "Where would you say you fit into that?"*
>
> ***Dairy farmer**: "I do, as far as the maintenance part, I get a physical every year, which I didn't use to do, but I'm older now so it's a good thing to do on an annual basis. At this point, anything can happen."*

These statements illustrate how accessing preventive care can be seen as necessary for ensuring the long-term survival of the farm, a belief that is consistent with the farmer's identity. However, the participants varied significantly in their reported use of preventive care. Increased age appeared to be the most significant determinant of this disparity, as older farmers were both more likely to report seeing a doctor recently and to identify their age as a significant factor in deciding to do so:

> *"As you get a little older, you kind of think about it more. When you're young, you don't worry about it." (Dairy farmer)*
>
> *"Once you get to a certain age and start the aches the pains, then you realize it's time we started doing something fairly regular for checkups and stuff. You always hear this should be done after the age of 50. We're pushing 50. Let's start. Before, we're young, we're healthy, why worry about it." (Dairy farmer)*

Although many participants disregarded healthcare for acute injuries and noted that the younger generation is more likely to visit a physician, further discussions, including the examples above, revealed that their relationship with healthcare is somewhat complex. Contradictions between actions and the explanations of those actions are not uncommon in qualitative studies, and at times those contradictions can be quite informative. In the case of the farmers in this study, it is possible to conclude that seeking healthcare is a challenging endeavor that requires navigating financial challenges, busy schedules, and their sense of identity. However, as this research indicates, when various factors are advantageously aligned, i.e., sufficient time, money, and social influence, there are opportunities for encouraging farmers to be proactive about their health.

Discussion

Previous studies have described the difficulties in promoting measures to reduce noise-induced hearing loss (McCullagh and Robertson, 2009), skin cancer (Carley and Stratman,

2015), and traumatic injuries (Hagel et al., 2008; Hartling and Pickett, 1998) among farmers. Inadequate use of preventive healthcare services is another component of behavioral health that may yield significant health gains if addressed in the farming population. Earle-Richardson et al. (2015) found that compared to the rural non-farming population, farmers are less likely to have a regular doctor, receive blood pressure measurements, and undergo screening for cervical and colorectal cancer. Our study sought to characterize the process by which farmers decide to access healthcare in order to identify barriers and motivators that may be unique to the farming population.

The principal finding in this study is that healthcare use conflicts with the farming identity. This is consistent with past studies that described associations between an identity of self-reliance and reduced help-seeking behavior in agricultural populations (Staniford et al., 2009; Stayner and Barclay, 2002). We describe a core belief of farming: in order to ensure survival of the farm, a farmer must be self-reliant; taking on the role of the patient conflicts with this belief. According to cognitive dissonance theory (Festinger, 1962), individuals who are forced to act in ways that conflict with their core beliefs must change their way of thinking in response to the situation (Fointiat and Pelt, 2015). In this case, the option of healthcare must be presented in a way that shows farmers how to connect the act of "going to the doctor" to the values they hold dear, such as independence and resilience. In addition, when provided with a metaphor that they can relate to, such as comparing health maintenance checks to equipment maintenance, farmers may be more likely to understand the value of being proactive about their health. These beliefs are formed by weighing the costs of seeking healthcare against its anticipated benefits to conclude that seeking care is necessary for farm survival.

Accessing healthcare can be seen as a threat to farm survival because of its high costs; for a farmer, these costs include time away from the farm in addition to money. Our participants described being unable to leave the farm to seek care, unable to take time off for recovery from elective surgery, and in some cases delaying treatment for an acute injury until critical farm tasks were completed. Participants also described decreased use of healthcare resources due to financial concerns; the quality of an individual's health insurance plan was a strong modifier of this factor, which is consistent with the literature on insurance coverage and access to care (Reed et al., 2008).

In the health behavior model outlined by Shaw (1999), symptom appraisal is a significant step in the process of health behavior change. Our results suggest that farmers evaluate their symptoms chiefly in terms of their threat to farm survival. Participants in this study described seeking treatment for an acute health issue only when it prevented them from being able to continue working. This is consistent with the finding of Reed et al. (2012) that farmers primarily define health as the ability to work. This definition holds true for chronic and preventive health concerns as well; farmers in this study who accessed preventive services cited the importance of good health to the continued survival of the farm.

Finally, our participants cited the influence of another person as an important factor in their decision to seek care. We hypothesize that this eases the cognitive dissonance involved in seeking care, as the farmers are able to offload the responsibility for the decision onto their spouse or neighbor. This finding is in keeping with other studies of men's healthcare-seeking behavior, which have found the influence of spouses to be a major motivating factor (Addis and Mahalik, 2003; Mansfield et al., 2003; Seymour-Smith et al., 2002). The influence of social networks (i.e., family and friends) on healthcare use may partially explain the detrimental impact of social isolation on health outcomes (Berkman

et al., 2004; Cherry et al., 2013; Ryan and Willits, 2007).

Limitations

Our study had the following limitations. First, the initial phase of participant recruitment in this project relied on convenience sampling by contacting farmers who had previously participated in NYCAMH projects or who were otherwise known to the Center. It is likely that this sampling methodology preferentially recruited participants who had more contact with the healthcare system; for example, of the first five interviews, three farm spouses had worked for the Bassett Healthcare Network. We attempted to correct for this using theoretical sampling to identify farmers who may be more isolated from the healthcare system. However, our response rate of 65% suggests that the farmers who were most resistant to seeking care may be underrepresented in our sample. Additionally, it is likely that individuals who are more trusting of scientifically based institutions, such as hospitals, would be more likely to participate in research studies than those who have differing beliefs.

Another limitation of this study is that it sought to describe the decision to seek any kind of healthcare, rather than specific services. Because the implications and considerations vary widely for seeking care for the whole range of acute and chronic conditions, this may have limited the specificity of our study. Nevertheless, we were able to derive several important principles that were commonly described by our participants.

Finally, the generalizability of our study to all agricultural populations may be limited. We focused on principal farm operators, whose access to healthcare is significantly different from that of farm workers. In addition, the study population was contained within the catchment region of the Bassett Healthcare Network, an integrated network of primary and specialty healthcare services that may provide better access to care than the options available to farmers elsewhere. Most importantly, the majority of the participants in this study identified as single-owner dairy farmers. Dairy farming, especially in situations where a sole operator manages the farm, involves specific challenges that other commodities do not face. In particular, these challenges result from the need for farmers to be available for their animals at multiple times each day, in addition to the plethora of additional farm chores. As a result, farmers specializing in other commodities or even dairy farmers on multi-manager operations likely cope with different barriers to healthcare access.

Next Steps

This study lays the groundwork for a more detailed understanding of farmer's access to healthcare. We identified several next steps for future work in this area. First, access to and use of mental health services have been shown to be lacking in agricultural populations (Boyd et al., 2007; Staniford et al., 2009). While several participants made oblique references to "shrinks" and "happy pills," these interviews did not generate enough data to adequately explore this issue.

Similarly, this study did not explicitly address gender disparities in healthcare use, which have been demonstrated for other populations. As the principal farm operators in this region tend to be older men, this will be an important factor to consider in future work.

In order to fully explain the disparity in healthcare use between farmers and non-farmers described by Earle-Richardson et al. (2015), it will be necessary to include the perspectives of non-farmers. Interviewing non-farmers who have similarly demanding professions may

be useful in further elucidating the influence of identity and resource constraints on healthcare-seeking behavior.

Additionally, this study was conducted prior to the full implementation of the Affordable Care Act, which has likely had significant impacts on the health insurance marketplace and the insurance status of farmers in the region. While most of the farmers in this study were insured, it will be important to assess the impact of these changes on farmers' perception of healthcare costs and the extent to which this impacts their decision process.

The knowledge gained through this study provides a more in-depth understanding of farm culture and the environment in which health and safety decisions are made on the farm. With this understanding and the excellent work that has been conducted by other qualitative researchers on this topic (Green, 1999; Sprung and Britton, 2016), researchers will be able to more appropriately tailor health and safety programs and informational materials to the values, beliefs, and priorities of farm populations (Sorensen et al., 2008; Tovar-Aquilar et al., 2014; Weil et al., 2014).

Conclusions

This study describes how the "farming identity" may conflict with the action of seeking healthcare. In addition, farmers face resource constraints that may limit their healthcare use. Attempts to increase use of acute and preventive healthcare services by farmers must address these barriers. For example, we describe how farmers may come to view preventive care as necessary to ensure survival of the farm. Health promotion efforts that seek to increase healthcare use among farmers should emphasize this message, in addition to mitigating costs to farmers in terms of time and money.

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