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PERCEPTIONS AND BEHAVIORAL INTENTIONS OF UTAH 4-H EQUINE PROGRAM
LEADERS IN TEACHING EQUINE SAFETY TO YOUTH

by

Katelyn M. Huffman

A thesis proposal submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Agricultural Extension & Education

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2020

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ABSTRACT

Perceptions and Behavioral Intentions of Utah 4-H Equine Program Leaders
in Teaching Equine Safety to Youth

by

Katelyn M. Huffman, Master of Science

Utah State University, 2020

Major Professor: Dr. Tyson J. Sorensen
Department: Agricultural Systems and Technology Education

The purpose of this study was to explore the perceptions and behavioral intentions of Utah 4-H Equine Program leaders in regard to teaching equine safety, including attitudes, perceived behavioral controls and subjective norms. A brief portion of the survey instrument also examined the demographics of the population including age, gender, personal equine experience and experience as a 4-H leader. Data for this study was collected via electronic survey. The survey was distributed to individuals registered as Utah 4-H Equine Program leaders through the 4-H Online website.

The survey instrument consisted of multiple choice, fill in the blank, and six-point Likert scale questions regarding personal demographics, experience teaching equine safety, attitudes towards safety, perceived behavioral controls, and overcoming challenges associated with teaching equine safety. Data were analyzed using descriptive statistics.

The majority of respondents were females over the age of 40 with an average of 9.3 years of experience as a 4-H leader. The majority of respondents also reported having some type of

personal equine experience outside of being a Utah 4-H Equine Program leader. Respondents were asked to indicate what types of resources they typically use when teaching equine safety with the top two answers being “4-H curriculum” and “personal knowledge.”

Respondents indicated having positive attitudes towards the topic of teaching equine safety. Data collected also indicated that the subjective norms of parents, stakeholders, and personal sense of responsibility have a high influence on respondents’ intentions to teach equine safety. Finally, data gathered on respondents perceived behavioral controls included questions on common challenges faced by leaders and their ability to overcome those challenges. Based on responses, it was unclear what specific challenges leaders have in teaching equine safety to youth, however, respondents indicated that they are comfortable seeking guidance from others when challenges do arise.

According to the theory of planned behavior, the positive attitude, high influence of subjective norms and high ability to overcome challenges indicates that Utah 4-H Equine Program leaders have positive intentions regarding teaching equine safety to youth. The implications of these findings and recommendations for future research and program development are also discussed.

(78 pages)

PUBLIC ABSTRACT

Perceptions and Behavioral Intentions of Utah 4-H Equine Program Leaders
in Teaching Equine Safety to Youth

Katelyn M. Huffman

There is an inherent risk associated with working with youth and large equine. The Utah 4-H Equine program is a volunteer-based program that seeks to properly educate youth on equine husbandry, this includes the topic of safe equine handling practices. The purpose of this study was to explore the perceptions and behavioral intentions of Utah 4-H Equine Program leaders about teaching equine safety, including attitudes, perceived behavioral controls and subjective norms. The survey instrument consisted of multiple choice, fill in the blank, and six-point Likert scale questions regarding personal demographics, experience teaching equine safety, attitudes towards safety, perceived behavioral controls, and overcoming challenges associated with teaching equine safety.

The majority of respondents were females over the age of 40 with an average of 9.3 years of experience as a 4-H leader. All respondents also reported having some type of personal equine experience outside of being a Utah 4-H Equine Program leader. Respondents were asked to indicate what types of resources they typically use when teaching equine safety with the top two answers being “4-H curriculum” and “personal knowledge.”

Overall, respondents indicated having positive attitudes towards teaching equine safety, a high influence of subjective norms on teaching equine safety, and a positive ability to overcome challenges (perceived behavioral controls) associated with teaching equine safety. According to the theory of planned behavior, the positive attitude, high influence of subjective norms and

positive perceptions of perceived behavioral controls indicates that Utah 4-H Equine Program leaders have positive intentions regarding teaching equine safety to youth. The implications of these findings and recommendations for future research and program development are also discussed.

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Thank you to Utah State University Extension and the Utah 4-H program for providing opportunities for rural and urban youth alike. I owe the Utah 4-H program and all of those associated with it my sincere appreciation for instilling in me a passion and desire to give back to future generations the way that the program did for me. I would specifically like to offer my appreciation for Peggy Marshall, my childhood 4-H Coordinator who changed my life for the better by supporting me, encouraging me, and continually challenging me to “make my best, better.”

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Katelyn M. Huffman

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CHAPTER I

INTRODUCTION

Engaging in equine-related activities is considered inherently dangerous (Jagodzinski & Gregory, 2005). The dangers associated with equine activities have driven legislative measures including a 2006 Utah Code 78-27b-102, stating “An equine activity sponsor, equine professional, livestock activity sponsor, or livestock professional is not liable for an injury to or the death of a participant due to the inherent risks associated with these activities” (p. 4). The level of risk associated with equine activities has resulted in research and development of safety equipment, such as vests and helmets. The implementation of these safety items has been particularly relevant for use with children involved in equine-related activities.

Injury occurrence by participation in equine activities is often provoked by multiple factors in a situation. These factors include the unpredictability and size of the animal. However, some amount of unpredictability may be lessened with proper understanding of equine ethology and proper training on equine behavior for those participating in equine activities (Hawson, McLean, & McGreevy, 2010). In order to improve training for equine professionals and youth involved with equine activities, researchers first must understand the current practices in use and the opinions and attitudes toward teaching those safety practices. The varying degrees of equine experience and teaching styles of Utah 4-H Equine Program leaders may lead to varying levels of safety being taught to youth throughout the state. In an attempt to create a more uniform approach to teaching equine safety to youth, researchers will need to first gather information regarding the varying attitudes, subjective norms, and perceived behavioral controls of Utah 4-H Equine Program leaders in the state of Utah.

Statement of the Problem

Equine are large unpredictable animals, which pose some amount of risk even to seasoned professionals within the equine industry. The addition of inexperienced youth exacerbates an already dangerous situation. In 4-H programs it is the responsibility of the adult equine educator to ensure safe handling practices by youth especially when working with youth who have inadequate equine experience. However, in private lessons, paid professionals who have several years of experience with horses are able to offer safe consistent training for their students. This is not always true in volunteer based organizations, such as the Utah 4-H Program.

The Utah 4-H Program, under the direction of the Utah State University Extension Service, is a program that relies heavily on volunteers. These volunteers, often parents of 4-H youth, may be specialists in one area but provide instruction in multiple disciplines for their club. The variety of disciplines may vary from equine activities, livestock nutrition, sewing and cooking skills, home arts or others (Utah 4-H, 2019). This variety of knowledge can lead to situations in which leaders are experts in some areas but may be limited in others, such as equine. This lack of experience in handling equine may lead to a lack of adequate knowledge of safety when working with equine as well.

Most 4-H instructors are participating on a volunteer basis, therefore there is little that can be done to ensure that every 4-H club has a leader with the same amount of experience as another. This can lead to an inadequate understanding of equine behavior and safety practices, particularly in regards to working with youth and horses. While the goal of these volunteers may be to give safe, adequate instruction to youth in the equine program, this may not always be the case. A better understanding of the attitudes, beliefs and behavioral intentions of volunteers

towards teaching equine safety to youth will aid Extension personnel in understanding the needs of the Utah 4-H Equine Program as it pertains to safety education.

Introduction to Theoretical Framework

Ajzen's (1991) theory of planned behavior serves as the theoretical framework for this study. The premise of this theory is that individuals make logical, reasoned decisions to engage in specific behaviors by evaluating the information they have available to them (Ryan & Carr, 2010). The theory of planned behavior involves understanding the attitudes and perceptions that individuals have towards a specific behavior, and how those beliefs translate into the likelihood of performing said behavior (Ajzen, 1991). Specifically, this theory will be used to examine the attitudes, subjective norms, and perceived behavioral controls of 4-H equine program leaders toward teaching and implementing safety practices within the Utah 4-H Programs. The attitudes of 4-H equine program leaders may include positive versus negative experiences with safety equipment, previous experiences with injuries to youth in their care, and previous experience with personal injuries. The subjective norms portion of the theory involves the external pressure to perform or not perform a specific behavior (Ajzen, 1991). The subjective norms of equine safety tie into the perceived pressure from media, medical practitioners, equine professionals, parents of 4-H youth or other Utah 4-H Program leaders to instill safety protocols within the 4-H club. Lastly, the perceived behavior control involves an individual's belief that the behavior can be achieved. Perceived behavioral control may be influenced by external factors that have lead an individual to have certain internal beliefs about the situation (Ajzen, 1991). An example of an external factor for this study may be a previous Utah 4-H Equine Program leader's success or failure in teaching equine safety to youth. The success or failure of the previous leader may lead their successor to believe they will have the same result, good or bad. By using the theory of

planned behavior as a guide, I will be able to better evaluate the responses gathered from 4-H Equine Program leaders to determine the next step with said research.

Purpose and Objectives of the Study

The purpose of this study is to explore perceptions and the behavioral intentions of Utah 4-H Equine Program leaders in regards to teaching equine safety to youth. The research study is guided by the following research objectives:

1. Describe the sample of Utah 4-H Equine Program leaders.
2. Describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs.
3. Describe Utah 4-H Equine Program leader's attitudes, perceived behavioral controls, subjective norms, and intentions towards teaching and learning equine safety.
4. Determine the relationship between Utah 4-H Equine Program leaders' attitudes toward equine safety and intentions to integrate equine safety.

Assumptions

In order to accomplish the objectives of this research study, the following assumptions are made:

1. The population of Utah 4-H Equine Program leaders have entered the correct contact information through 4-H online, which will be used to create our list of candidates for participation in the study.
2. All respondents for the study have adequate access to a computer and internet in order to complete the survey.
3. The attitudes, subjective norms, and perceived behavioral controls are able to be adequately measured via the information in this survey.

4. Respondents for the study have interpreted the survey questions correctly.
5. Respondents for the study have answered questions on the survey truthfully.

Limitations

Within this research study, certain limitations are identified. The following is a list of those limitations.

1. Having previously been a participant in the Utah 4-H Equine Program, I recognize that my experience as a youth may have an influence on my interpretation of the results of this study.
2. Given the rural nature of many Utah communities, some respondents may not have the adequate computer access to complete the surveys in a timely manner, limiting the pool of responses.
3. The research is limited in the amount of information that can be obtained via survey style research. Respondents will be limited to answering the questions in the survey and may or may not interpret those questions correctly.
4. Because the population of potential respondents is limited to registered Utah 4-H Equine Program leaders, the research will not include input from county agents, parents, or the youth themselves. Input from these excluded groups may also be pertinent in furthering the results of this study.

Significance of the Problem

Understanding current practices and intentions for equine safety within the 4-H Horse Program, extension agents and leaders will be able to better understand the needs of the program. This research will aid in evaluating current resources available to 4-H leaders and their willingness to use the available resources. If researchers are able to better understand the

intentions of leaders towards teaching safety, extension personnel will also be able to improve on safety practices within the program and hopefully simultaneously encouraging more participation. By increasing safety practices, the program may be more likely to draw in more participants, by giving parents more ease of mind in allowing their children to participate in equine activities.

Definitions of Terms

Equine Professional. As defined by the 2006 Utah Code 78-27b-102, an equine professional is “a person compensated for an equine activity by: (a) instructing a participant; (b) renting to a participant an equine to ride, drive, or be a passenger upon the equine; or (c) renting equine equipment or tack to a participant” (page 1).

4-H Equine Program. An organized program run through the state 4-H office that involves youth working with their own horses in a group setting as well as training to compete in various disciplines.

4-H Equine Program Leader. An individual signed up through the local county 4-H office as a volunteer leader for one of the local 4-H Equine Program clubs.

Attitude. A person’s thoughts or beliefs towards a specific event or action. These thoughts can be positive or negative.

Subjective Norms. A person’s perception of the societal pressures to perform certain behaviors.

Perceived Behavioral Control. A person’s perception of their ability to control certain behaviors, as well as their ability to overcome obstacles that may keep them from performing said behaviors.

Behavioral Intentions. A person’s desire to behave in a particular way, despite barriers that they may encounter.

CHAPTER II

LITERATURE REVIEW

The combination of equine events and young, inexperienced youth can pose a serious risk. The first line of defense in mitigating some of the dangers associated with equine activities is adequate instruction and development of respect for the animal. To develop this sense of safety, youth must be provided with adequate instruction via a trained professional or adult supervisor. In most equine institutions (lesson groups, camps, stables, trail ride companies), equine activities are supervised by an individual considered to be a “professional” in any specified equine discipline. For this study, the researcher will use the definition of an equine professional provided in Utah Code 78-27b-101 which states, “(4) Equine professional means a person compensated for an equine activity by: (a) instructing a participant; (b) renting to a participant an equine to ride, drive, or be a passenger upon the equine; or (c) renting equine equipment or tack to a participant.”

The Utah 4-H Equine Program presents a unique situation, as the program is run on a primarily volunteer basis. Depending on their background the volunteers often have a wide range of equine experience levels. The volunteer model of the organization may lead to a quality control issue in ensuring that each Utah 4-H Equine Program club is receiving adequate instruction in the safe handling of their equine partners. This research study is designed to explore the attitudes, perceptions, subjective norms, and perceived behavioral controls towards safety found among leaders in the Utah 4-H Equine Program.

Before exploring the current attitudes, perceptions, and subjective norms towards safety among Utah 4-H Equine Program leaders, I first explored the history of equine safety, equine related injuries and prevention of injury in youth. The purpose of this literature review is to

explore the topic of safety within the agricultural sector as a whole, adult involvement in youth safety, and the topic of safety specifically in equine related activities including the incidence of injury as well as prevention and protective equipment, and the roles played by supervisors of equine activities. This literature review will also include an overview of the theory of planned behavior to be used as the theoretical framework for this study.

Theoretical Framework

It has been established that equine safety is an important topic to be taught to all levels of riders. Within the 4-H program the topic of equine safety is often in the hands of the 4-H Equine Program leaders for various clubs throughout the state. To better understand the intentions of Utah 4-H Equine Program leaders in teaching Equine Safety practices, I used the behavioral determinants studied within the theory of planned behavior (Ajzen, 1991). These determinants are attitude, perceived behavioral control, subjective norms, and intention to integrate.

The theory of planned behavior is an expansion on the theory of reasoned action, both of which attempt to predict an individual's intention to engage in certain behaviors. The addition of perceived behavioral controls is the distinguishing factor between the theory of reasoned action and the theory of planned behavior (Ajzen, 1991). In total the theory of planned behavior encompasses attitudes, subjective norms, and perceived behavioral controls and how those interact to influence behavioral intentions, ultimately becoming the behavior. This interaction is summarized by the figure below.

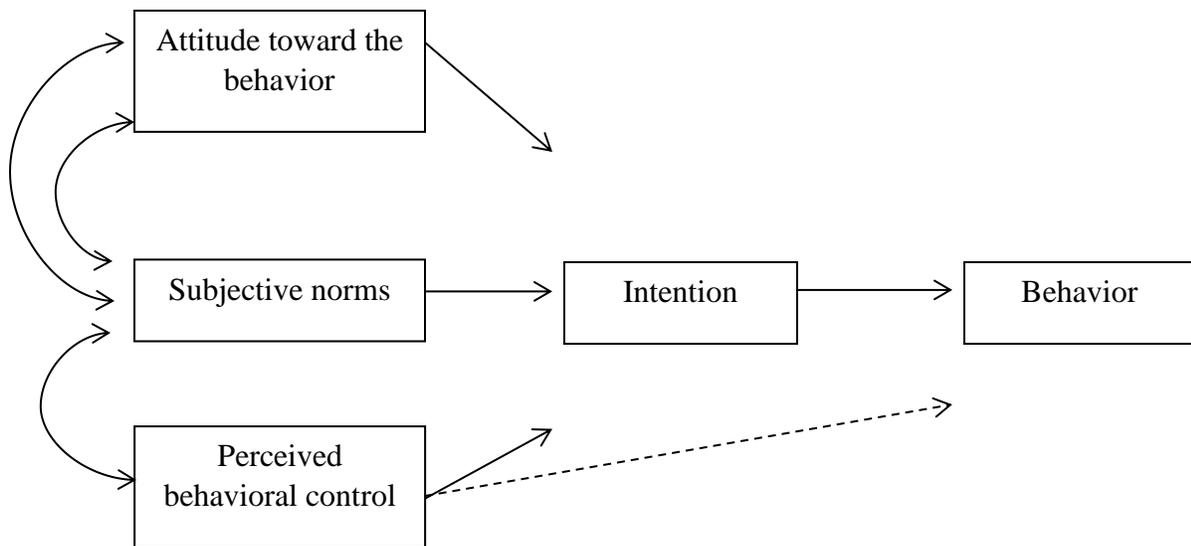


Figure 1. Model of the theory of planned behavior (Ajzen, 1985, 1987, 1991).

The first determinant of intention identified by the theory of planned behavior is the attitude toward the behavior. The attitude refers to the degree to which an individual's opinion is favorable or unfavorable toward a specific behavior (Ajzen, 1991). According to the expectancy-value model of attitudes, attitudes develop according to the beliefs that an individual has about the object in question (Fishbein & Ajzen, 1975). When it comes to attitudes associated with a specific behavior, the behavior is linked with certain positive or negative outcomes. As a result, the value of the outcome creating the attitude is directly proportional to the strength of the belief (Ajzen, 1991). In summary, a stronger positive attitude towards a given behavior will result in a higher likelihood that the behavior will be performed. In current literature the trend seems to be that there is a positive attitude towards a need for safety practices in both equine activities and agriculture as a whole (Evans & Heiberger, 2015; Sanchez, 2017; Wilmes &

Swenson, 2019). This study further examines how this trend applies to leaders, in the Utah 4-H Equine Program, intentions to teach the topic of safety.

Subjective norms refer to the social pressures felt by an individual to perform or not perform a behavior. Subjective norms are tied to normative beliefs, which refer to the likelihood that other important individuals or groups approve or disapprove of a given behavior (Ajzen, 1991). The normative belief can be multiplied by the individual's willingness to comply with said belief. The sum of the products across multiple referent individuals or groups is directly proportional to the subjective norm of the behavior in question (Ajzen, 1991). In other words, the more an individual allows outside opinions to shape their views on certain behaviors, the higher the likelihood of said individual performing, or not performing, that behavior based on those subjective norms. As seen in the study by Sanchez (2017), a subjective norm identified by parents of youth in equine activities is the social pressure felt from other parents with youth of similar age. This norm along with stakeholder and Extension personnel expectations guide the evaluation of the influence of subjective norms for this study.

The final determinant is an individual's perceived behavioral control which refers to the perceived ease or difficulty in performing the behavior. The perceived ease or difficulty can be affected by previous experiences or possible obstacles (Ajzen, 1991). Perceived behavioral control involves control beliefs present in any given situation. These control beliefs can be based on an individual's personal experiences or the second-hand experiences of others the individual has come in contact with. This also has to do with the perceived difficulty or obstacles that one may encounter. The fewer problems or obstacles that an individual anticipates, the higher their perceived control over the behavior will be (Ajzen, 1991).

The importance of each of these determinants in predicting behavioral intentions varies across different behaviors and situations, but it is the combination of the three that has proved to be the best approach to predicting behavioral intentions (Ajzen, 1991). This research study will examine the interaction of attitude, subjective norms, and perceived behavioral control to examine the behavioral intentions of Utah 4-H Equine Program leaders in teaching equine safety to youth.

Safety in Agriculture

Agriculture has consistently ranked among the most dangerous industries for U.S. workers (BLS, 2015). While, on-farm injuries have declined by 57% from 1998-2009 (NCCRAHS, 2012), there continues to be safety concern about youth in these agricultural environments. McCurdy and Carroll (2011) cite cattle and horse incidents are among the most common cause of injury. In Utah, livestock and horses are the primary source of injury to farmers and ranchers, where horses account for 42.3% of injuries (Miller, Webster & Mariger, 2004).

The National Coalition for Agricultural Safety and Health (NCASH) stated in 1988 that there was an urgent need for intervention in the farming sector to address traumatic injuries and death. Since then, injuries occurring in the agriculture sector have been studied extensively (Jadhav, Achutan, Haynatzki, Rajaram & Rautiainen, 2016). Jadhav et al. (2016) cited common sources of injury included machinery, livestock, and falls from great heights. A 2002 study compared the incidences of traumatic deaths and injuries occurring in the agriculture industry. The study examined data from multiple sources and compared different sectors of the industry. The sector with the highest death rates was that of crop production with a total of 2,704 deaths occurring between 1992-1998 with the livestock sector coming in second with 1,228 deaths in

that time period (Hard, Myers & Gerberich, 2002). The same study used data gathered by the Traumatic Injury Surveillance of Farmers to examine incidents resulting in non-fatal injuries. This data showed that the sector with the highest incidence of non-fatal injuries was that of livestock production with a total of 286,537 injuries occurring between the years 1993 and 1995 (Hard, Myers & Gerberich, 2002). With the high incidence of injuries and deaths within agriculture there has been a need for research involving the implementation of safety guidelines within the industry.

While there have been extensive studies completed involving the safety of the consumer, few have addressed the safety of the producer. One such study examined this need for farm-risk conversations to be implemented into the agriculture sector (Evans & Heiberger, 2015). The research by Evans et al noted that “relatively little reference to risk communications involves occupational risks and safety of farmers/ranchers and their families farm workers, and others in production agriculture.” The study went on to examine the best channels by which to disseminate safety information to the agricultural sector, with participants in the study citing Extension as a “dwindling resource” for safety training (Evans & Heiberger, 2015). Another study focusing on the communication tendencies of Arkansas 4-H Horse Program facilitators noted that facilitators preferred to seek information from other local horseman over Extension resources (Kurtzo, Edgar, Edgar, Graham & Russell, 2019). This may be a sign that Extension as a whole, needs to evaluate the safety information currently on hand for accuracy. In order for Extension to continue to be a viable resource for the public, the literature offered must be able to keep up with the advancing world.

While the study by Evans and Heiberger encompassed dissemination of general agricultural safety topics, a similar study looked at safety from a “stockmanship” perspective on

dairy farms. The study completed by Wilmes and Swenson (2019) explored communication strategies for supporting health and safety measures for dairy farmers and their employees. Based on the study, recommendations were made for a “train the trainer” educational model allowing farmers to engage with professionals as well as encouraging farmer to farmer communication. Contrary to the study conducted by Evans et al. participants in this study identified Extension personnel as a key source of information and influence for farm safety training going on to state “Credible sources of information, including a person, an organization, or a piece of media, have the potential to influence decision-making and increase engagement by producers” (Wilmes & Swenson, 2019). Another study also highlighted Extension offices as one of the highest-ranking sources for reliability for livestock producers according to members of the Texas and Southwestern Cattle Raisers Association (Allen et al., 2014). Wilmes et al also identified farmer to farmer communication as a top influencer, highlighting the importance of having a strong circle of peers also involved in the profession, to fall back on.

While there are conflicting views about the relevance of materials being disseminated by Extension programs in different states, the materials are available. For the purpose of this study, resources currently used for teaching equine safety to youth are examined to better understand to what extent materials provided by Utah State Extension are used by leaders in the Utah 4-H Equine program.

Agricultural Safety and Youth

The agricultural sector is one of the few areas in which youth often work alongside their parents in conditions involving inherent risk. Risks in agriculture include working with and around machinery and livestock animals, which already poses a risk for adults, let alone children. Recently, the Childhood Agricultural Injury Survey (CAIS) created by the National Institute for

Occupational Safety (NIOSH) reported 25 million youth less than 20 years of age lived on, worked on, or visited farms in 2014 (NIOSH, 2018). The children involved in the agriculture sector are often trained in the various operations of the family farm by either their fathers or mothers (Stoneman & Jinnah, 2016). In this scenario one may assume that parents would be the most proactive in teaching safety when it comes to their own children, however a 2005 study on parents perceived risks of farm work concluded that participants felt “although farming is dangerous, their own children are not at much risk for injury” (Zentner et al., 2005).

A 2016 study conducted by Stoneman and Jinnah examined the differing perceptions of youth safety on the family farm based on parental gender roles. The study found that fathers were often the parent most likely to train youth on the operations of farm equipment. However, fathers were also more likely to perceive youth as having higher injury vulnerability than mothers were. Out of the mothers that participated, those who were actively involved in the daily operations of the farm, also perceived youth as having higher injury vulnerability than mothers who were not familiar with machinery operations (Stoneman & Jinnah, 2016). The study concluded that having personal experience in the field lead parents of either gender to be more familiar with the severity of the risks involved in agriculture which resulted in them having a greater sense of the injury vulnerability of their children (Stoneman & Jinnah, 2016).

The information found in Stoneman and Jinnah’s study may translate to the perceptions of adults involved with training youth in equine activities. If parents or leaders are directly involved in the equine industry, they may have a greater understanding of the inherent risks associated with working with horses and can therefore be more reliable as a safety training resource. However, according to the literature there tends to be a trend with parents’ perceptions of risk involving their own children being relatively low (Zenter et al., 2005 & Stoneman et al.,

2016). This may or may not be the opposite for leaders of youth outside of the family in how they perceive the need for safety instruction for youth.

Risk of Equine Related Injuries

The national estimates of farm families reported 25% of youth under the age of 20 riding horses for recreation and 7% of those youth rode horses while working (Hendricks, Layne & Goldcamp, 2012). Further, Hendricks et al. (2012) reported more than one-third of on farm injuries included people, plants, animals or minerals as the primary source. Of those, 67% were animal related, with horses being the most frequent source of all animal injuries (Hendricks et al., 2012)

Horses are unpredictable and injuries may occur from riding, grooming, or groundwork (Shumway, 2013). In addition to riding and working with horses, the speed of the horse must be considered. A 2004 study stated that as a horse's speed increases, the risk for serious injury exceeds the risk associated with automobile and motorcycle racing (Brady & McKee, 2004). Over the years many studies have been conducted on the incidence of injuries occurring to humans through equine related activities. For the purpose of this study, resources have been narrowed down to those studies involving youth. Multiple studies have used hospital records as a means to examine severity and mechanism of injury to individuals of varying ages (Annest et al., 2006; Beierle et al., 2009; Bond et al., 1995; Carmicheal et al., 2014; Heath et al., 1998; Jagodzinski et al., 2005; Kimble et al., 2017). Beierler et al. (2009), found that most equine related injuries in youth occurred during leisure-type activities, with only 20% of injuries occurring during competition. This finding may be a result of the requirement of safety equipment, such as helmets, during competition leading to less severe injuries. Another study further narrowed the most commonly injured population by identifying that the majority of

injuries were sustained by girls between the ages of ten and fourteen. This study examined 66 hospitals in the USA, a total of 4,122 cases, using the National Electronic Injury Surveillance System (NEISS) to identify individuals admitted with any equine related injury (Annest, Bixby-Hamlet, Gilchrist, & Thomas, 2006). The statistics on when injuries occur are important to this study as the majority of time that youth spend with horses are in leisure, or club practice settings rather than in competition. The safety training that youth receive in these settings can affect other settings that they find themselves in, with or without the guidance of their 4-H Equine Program leader.

While there have not been many studies on the topic of teaching safety to youth, a study completed at Bowling Green State University examined the perceptions and risk management strategies of parents who have daughters involved in horse sports (Sanchez, 2017). This study compared horseback riding to “risky play” a sub-category of “free play” which allows youth to freely explore their environment, outdoor world and physical capacities (Brussoni, Olsen, Pike, & Sleet, 2012). Parents participating in the study reported recognizing the risks associated with their daughters being involved in equine sports and reported taking appropriate measures to mitigate said risks such as requiring helmet use, investing in trainers, and taking their daughters to regular lessons by equine professionals. Despite knowing the risks associated with equine sports, parents reported having greater desire to support their daughters’ passions than to keep them from participating in the risky activity (Sanchez, 2017). The topic of Sanchez’s study is relevant to this study as it is important to note that despite the inherent risks associated with youth involved in equine activities, there is research that shows continued support of youth being involved in these activities. Because there is support of youth being involved in these activities,

there will continue to be a need for safety training, which ranks high on the list of priorities when it comes to equine activities.

Gadd et al. (2018) examined technical skills necessary to include in a collegiate equine course according to experts in academia and the equine industry. The study surveyed professionals in both areas and used the data collected to narrow down the top ten most important topics to be covered in the university equine course. The researchers reported their findings for the individual groups as well as the mean scores for desirable skills among the entire population surveyed. The combined means identified the number one desired skill to be taught in collegiate equine courses was to “Understand basic barn safety” (Gadd, Hiney & Robinson, 2018). This information is pertinent to this study as it is a very recent finding that further highlights the perceived importance of equine safety, especially in a teaching environment.

Preventing Equine Related Injuries

Helmets are used in a variety of recreational activities and athletic sports such as football, bicycling, hockey, skate boarding, and others in addition to being commonplace in equestrian events such as hunter/jumper, english, dressage, and endurance riding (Shumway, 2013). A study performed in 1995, examined equine injuries sustained by 32 children under the age of 15 found that of the 32 children, 20 were wearing helmets at the time the injury was sustained (Bond, Christoph, & Rodgers, 1995). Bond et al. (1995) concluded that there was a great reduction in the frequency and severity of central nervous system damage found in those participants wearing a helmet. Nelson, Rivara, and Condie (1994) found that head injuries declined by 26%, facial injuries by 63%, and concussions by 29% when individuals wore helmets. Since then, further studies have been performed resulting in similar conclusions for both children and adults (Heath, Novak, Reed, 1998; Kimble, Stockton, Theodore, 2017). Since

1990, the United States Pony Club requires that participants wear helmets approved by the American Society for Testing Materials (ASTM) (USPC, 2016).

While head protection is an important topic within the equine world, it is mainly a concern in instances in which a fall from the horse is sustained. In equine activities, falling from the horse is one of multiple mechanisms of injury that may be sustained. One study has found that the frequency of head injury in both mounted and unmounted scenarios have proven to be the same, concluding that wearing a helmet while both mounted and unmounted is recommended (Carmicheal II et al., 2014). However, the same study found that injuries to the face, abdominal cavity, and extremities make up a higher percentage of emergency room visits (73%) than head injuries alone (Carmicheal II, Davenport, Kearney, & Bernard, 2014). This finding shows that while helmets may help in mitigating injuries, it is not a guaranteed prevention for injury.

In order to avoid injuries that cannot be mitigated by protective equipment, instruction in safe equine handling is necessary. Youth cannot be expected to have the ability to know what is safe and what is not. In the study that examined parents' perceptions of the risks associated with equine sports, many of them noted taking their daughters to lessons or trainers as a means to mitigate injuries (Sanchez, 2017). According to this, the parents place the responsibility for teaching equine safety on the trainer or other equine professional that their child is learning from. There has been little to no research performed on how or if these trusted "equine professionals" are indeed teaching these youth about equine safety. In the Utah 4-H Equine Program the volunteer leaders for each club would be considered the professionals responsible for teaching youth about equine safety. This leads to a need to understand how or if these leaders are performing this important task.

Equine Safety Resources Available

There are two main resources, for teaching equine safety, that can be accessed by Utah 4-H Equine Program leaders through their local Extension office, which include the Utah State University 4-H Horsemanship Rule Book, and the *Horses and Horsemanship* book. The question is, how many leaders know about, or are currently using these resources? The first, most accessible sources for safety recommendations are the Utah 4-H Horse Rulebook (USU Extension, 2015) and the *Horses and Horsemanship* book, revised by Ray J. Antoniewicz (National 4-H Horse Council, Antoniewicz, 2001). These books are both available through each county extension office and are used to create horse knowledge exams that are a part of each Utah 4-H sponsored show, as well as a reference for 4-H Equine Program leaders.

The rulebook outlines the 4-H Helmet Regulation Program, which became effective January 1, 2011. This program outlines the requirement that helmets be used by all youth riders while participating in 4-H sponsored events including club meetings, trail rides, competitions, etc (USU Extension, 2015). The outline of the helmet program is the only major reference to safety requirements within the Horsemanship Contest Rules. The remainder of the rulebook deals with teaching youth how to perform each of the events offered in the 4-H Equine Program.

The book *Horses and Horsemanship* provides more guidance on safety practices when working with horses (National 4-H Horse Council, Antoniewicz, 2001). The information is able to be accessed by youth or can be used as a guide for leaders when teaching the topic of safety. It is uncertain to how often the information in this book is used in teaching safety by the club leader. The use of this information, or similar curriculum, is examined in this study via questions concerning behavioral controls.

CHAPTER III

METHODOLOGY

The purpose of this study was to explore Utah 4-H Equine Program leaders' attitudes, subjective norms, perceived behavioral controls, and intentions to integrate the teaching of equine safety within the Utah 4-H Equine Program. This study was designed as a means to examine current equine safety teaching practices, or lack of, within Utah 4-H. The researcher used survey methodology in order to accomplish the following objectives:

1. Describe the sample of Utah 4-H Equine Program leaders.
2. Describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs.
3. Describe Utah 4-H Equine Program leader's attitudes, perceived behavioral controls, subjective norms, and intentions towards teaching and learning equine safety.
4. Determine the relationship between Utah 4-H Equine Program leaders' attitudes toward equine safety and intentions to integrate equine safety.

Research Design

This descriptive study was conducted with a survey, created via the online survey generator, Qualtrics. Survey methodology was selected for this research due to the benefits of being cost effective, working in realistic settings, and the ability to collect a wide range of data from varying participants (Dominic & Wimmer, 2014). Surveys are also not constrained by geographic boundaries, which is helpful in combating the rural nature of many areas in the state of Utah.

Participants

Participants were selected based on their 4-H online profiles. The 4-H online website is a program used by extension agents, leaders, and volunteers as a means of keeping records, registration, and contacting members. Working with Utah State 4-H office staff, surveys were distributed via email using the 4-H online program to filter individuals who are registered as Utah 4-H Equine Program leaders. A total of 360 leaders were registered as equine club leaders for the 2017-2018 year. All individuals registered as equine club leaders for the 2017-2018 4-H year were contacted as potential respondents to the survey. In order to be registered as an equine leader, 4-H parents or volunteers simply select equine as one of their club projects when registering as a leader with their local county 4-H office at the beginning of each year. The 4-H year typically begins October 1st and runs through October 1st of the following year. On October 1st all leaders in the 4-H Online system become “inactive” until they renew with their local 4-H office for the following year. For this reason, the 2017-2018 “active” leaders were used.

Instrumentation

I developed the instrument used in this study to assess the attitudes, perceived behavioral controls, subjective norms, and the intentions of Utah 4-H Equine Program leaders as these variables pertain to the integration of equine safety education of 4-H youth (see Appendix A). The final portion of the survey was designed to collect demographic information in order to reach objectives (1) Describe the sample of Utah 4-H Equine Program leaders, and (2) Describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs. The instrument used Likert scale, fill in the blank, and multiple-choice items. The design of the instrument was modeled after two different studies that also used the theory of planned behavior. The first study was done by Davis, Ajzen, Saunders, and Williams (2002) and

examined the decisions of African American Student to complete high school. The second study by Cheon, Lee, Crooks, and Song (2012) examined mobile learning readiness in higher education. The five divisions of the survey are further explained in the following paragraphs.

Attitudes towards teaching equine safety to youth. The first section of the questionnaire measured participants attitudes toward teaching equine safety to youth. There were five statements that were answered using a six-point Likert scale (1 “Strongly Disagree,” 2 “Disagree,” 3 “Slightly Disagree,” 4 “Slightly Agree,” 5 “Agree,” and 6 “Strongly Agree”). Questions were presented as statements with the Likert scale recording a respondent’s level of agreement to each statement. An example question for the attitudes section was, “*As a 4-H Equine Program leader, I enjoy teaching equine safety practices to youth*” with the six options given to answer. The higher the scores, the more positive the individual’s overall attitude was toward teaching equine safety to youth.

Perceived behavioral control regarding teaching equine safety to youth. The second section of the questionnaire used the same structure as that of the first, with the six-point Likert scale ranging from 1 “Strongly Disagree” to 6 “Strongly Agree”. This construct of perceived behavioral control was also derived from the work of Cheon, et al. (2012), whom used the theory of planned behavior to examine students’ readiness to integrate mobile learning in higher education. The use of this method proved to be an effective means of analysis in both of the previous studies, as well as tying into the work of Ajzen (2001) on the theory of planned behavior and perceived behavioral control specifically. The questions were altered by the researcher to fit the topic of teaching equine safety, and a total of five questions were asked. Examples of the questions that were asked were, “*I have control of the level at which I chose to*

teach equine safety to the youth in my club” and “I am able to adequately overcome obstacles I may encounter in regards to teaching equine safety to youth within my club”.

Subjective norms of teaching equine safety to youth. The third construct measured by the instrument was that of subjective norms related to teaching equine safety to youth.

Subjective norms are the external pressures to perform or not perform a specific behavior (Ajzen, 1991). For the purpose of this research study, these external pressures may come from parents, extension personnel, community members, etc. Once again, the construct was examined using a six-point Likert scale, higher scores meaning the individual agreed with the statement. This construct was based on the work of Cheon et al. (2012). Examples of questions asked in this section included *“The parents of my club members expect me to be the first to teach the youth about equine safety”* and *“Local Extension personnel fully support my efforts in teaching equine safety to youth.”*

Behavioral intentions towards teaching equine safety to youth. The final variable examined was the behavioral intentions of leaders to integrate teaching 4-H safety to youth. This section followed the same design as the previous sections of the survey. Questions asked were related to the individual’s current practices and resources that they use or would be willing to use in order to integrate teaching equine safety to youth. This construct was measured with a six-point Likert scale with higher scores indicating the leader to be more likely to integrate equine safety into their teaching. Examples of questions for this section included, *“I feel my current level of equine safety instruction is adequate to ensure my club members are being as safe as they can when working with horses”* and *“I am currently using all resources offered through my county Extension office for teaching equine safety to youth.”*

Demographics of the sample. The final portion of the survey was a series of self-reported demographic information. This information was used as a means to identify any outlying factors that may influence respondents survey results. This also helped researchers better understand the range of backgrounds of the individuals involved in the survey. Data collected from this section included individuals' experience with equine safety, experience with the 4-H Equine Program, and experience in teaching youth in the Utah 4-H Equine Program.

Validity and Reliability

The instrument was evaluated for face and content validity by a panel of individuals with experience in the Utah 4-H program and experience in survey research. The feedback obtained from these individuals was used to improve the quality of the instrument and validity of the information obtained.

In order to test the reliability of the instrument a pilot study was administered. The pilot study was designed to test the reliability of the instrument by using a similar, unrelated population. This population was drawn from Kentucky State's Extension program. It was administered to 28 respondents in Kentucky, which had an active 4-H horse program. Individuals selected for the pilot study followed the same selection process as those for the research study. They were randomly selected from the 2018 registered 4-H Equine Program leaders in Kentucky. Cronbach's alpha coefficients were used to estimate reliability for each of the constructs presented in the instrument. In order for constructs to be considered reliable, they should meet or exceed an alpha of .70 (Nunnally & Berstein, 1994). Cronbach's coefficient for each of the constructs can be found in Table 1.

Table 1

Construct Reliability Estimates of the Survey Instrument from Pilot

Instrument Construct	Cronbach's α
Attitude	.98
Perceived Behavioral Control	.62
Subjective Norms	.32
Intention to Integrate	.71

Based on the reliability estimates, the constructs of Perceived Behavioral Control and Subjective Norms were not reliable as they were presented in the instrument. After consulting with other researchers, I decided to continue with the instrument used in the pilot due to the fact that while they did not summate to reliable constructs the instrument still provided valuable information to the study when analyzed as individual items.

Collection of Data

Data were collected during December 2018 – February 2019 with an online survey created via Qualtrics. A link to the survey was emailed to perspective participants via the 4-H Online program with the help of the state 4-H Office. Researchers were not allowed direct access to the contact information, and there was a way to filter the contacts by who had and who had not taken the survey. Researchers provided state 4-H staff with pre-written emails and the survey link (see Appendix B and C). After the initial email, a reminder email was sent out to all individuals originally contacted. They were instructed to disregard the email if they had already taken the survey (see Appendix D).

Response Rate

A total of 360 Utah 4-H Equine Program leaders were contacted as potential participants in the survey. Out of those 360 originally contacted there were a total of 91 who participated in the survey. Out of 91 total respondents, 77 responded “Yes” to the prompt “Are you a 4-H Equine Program Leader?” If they responded “No” to this prompt they were directed to the end of the survey. Due to excessive amounts of missing data from some respondents, only 72 usable surveys were analyzed. Out of a total of 360 potential respondents, 72 usable responses yielded a response rate of 20%. The first email distribution resulted in 64 responses. Three weeks following the initial distribution a follow-up email was sent. The second notice resulted in 27 responses. Due to the fact that the surveys were distributed and taken anonymously, I had no way of contacting individuals in order to collect non-respondent data. However, I checked for non-response bias by following the guidelines of Lindner, Murphy and Briers (2001) by analyzing data from early and late responders. The late respondents were defined as those responding after the follow-up email was sent. No significant differences were found between the data of early and late respondents. Therefore, I considered non-response error to be insignificant to this study (Lindner et al., 2001)

Human Subject Approval

Before collecting data, a proposal was submitted to the IRB office consisting of the initial application and protocol, data collection instrument, and all emails to be sent to participants. I followed the IRB regulations and ethical procedures in order to ensure that no physical, emotional or psychological harm would be caused to participants. IRB protocols were also followed to ensure confidentiality of participant information.

Data Analysis

Data were downloaded from Qualtrics and analyzed using the Statistical Package for the Social Sciences (SPSS) system software. Data were checked for correct coding through the Qualtrics program and any issues were addressed.

Table 2

Construct Reliability Estimates of the Survey (Post HOC)

Instrument Construct	Cronbach's α
Attitude	.84
Perceived Behavioral Control	.75
Subjective Norms	.19
Intention to Integrate	.50

Analysis of objectives one and two. Objectives one and two were analyzed using descriptive statistics, finding the mean, standard deviation, frequency and percentages of the answers to the survey. Responses were examined for patterns in the data between age, gender, and years as a 4-H leader. Objective two was examined for proper use of available resources and possible gaps in availability of resources for 4-H leaders.

Analysis of objective three. The constructs of attitudes, perceived behavioral controls, subjective norms, and behavioral intentions were analyzed for descriptive statistics of mean and standard deviation. Not all of the constructs were reliable based on the Cronbach's alpha coefficients, resulting in them not summing to individual constructs. Each construct was broken down into individual items and was analyzed based on total responses to each prompt.

Items were examined for patterns and how they translate to the level of safety being taught in the Utah 4-H horse program.

Analysis of objective four. Based on the Cronbach's alpha coefficient, the construct of Intention to Integrate Safety was not considered reliable ($\alpha = .50$). Therefore an analysis determining the relationship between attitude and intention to integrate could not be completed. Each construct was analyzed by individual items in the analysis of objective three.

Incentive

In order to encourage participation, the incentive of an entry into a drawing for a \$50 gift card was included at the end of the survey. Out of 91 participants, 52 opted to enter the drawing for the gift card. The winner was drawn via random number generator and contacted with the details regarding their gift card.

CHAPTER IV

FINDINGS

The purpose of this study was to explore Utah 4-H Equine Program leaders' attitudes, perceived behavioral controls, and intentions to integrate the teaching of equine safety within the Utah 4-H Equine Program. In order to better understand the intentions of Utah 4-H Equine Program leaders of teaching equine safety to youth, this research was guided by the theory of planned behavior. This theory incorporates using attitudes and perceptions of a specific behavior to decipher how likely it is for an individual to perform said behavior (Ajzen, 1991).

This chapter reports on the results of the research process described in chapter three. These findings include demographic information regarding Utah 4-H Equine Program leaders, current safety practices being implemented by said leaders, attitudes, subjective norms, behavioral controls, and intentions of leaders in regard to teaching equine safety. The following research objectives will be discussed at length in this chapter in order.

1. Describe the sample of Utah 4-H Equine Program leaders.
2. Describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs.
3. Describe Utah 4-H Equine Program leader's attitudes, perceived behavioral controls, subjective norms, and intentions towards teaching and learning equine safety.
4. Determine the relationship between Utah 4-H Equine Program leaders' attitudes toward equine safety and intentions to integrate equine safety.

Objective One: Describe the sample of Utah 4-H Equine Program Leaders.

In an effort to better understand the populace, information was gathered involving personal demographics, history of equine related experience, and history of 4-H related

experience. These demographics were used to aid in understanding perceived behavioral controls and attitudes towards teaching equine safety in the 4-H club setting.

Personal demographic information gathered included age and gender. Age of participants was initially gathered as a continuous variable, but for the ease of reporting, was later categorized. These categories are broken down in Table 3. Respondent's ages ranged from 20 to 76 years of age, with an average age of 43.23 years. Results showed that the highest percentage of respondents were over 40 years of age (41.76%) with only 27% of respondents reported as being 40 years of age or younger. Additionally, a total of 26 (28.57%) respondents chose not to report their age.

Table 3

Age of Respondents (n = 72)

Age	<i>f</i>	%
20 to 30	9	9.89
31 to 40	18	19.78
41 to 50	23	25.28
51 and Older	15	16.48
No Response	26	28.57

Respondents in the study included only 8.8% ($f=6$) male and 86.8% ($f=59$) female Utah 4-H Equine Program leaders. Additionally, three participants chose not to disclose their gender in the survey. These personal demographic questions lead into questions regarding individuals experience as a 4-H leader as well as their personal experiences in the equine industry. Results of this information are reported in Table 4 (Years of Experience as a Utah 4-H Equine Program Leader) and Table 5 (Equine Industry Experience).

Table 4

Years of Experience as a Utah 4-H Equine Program Leader (n = 72)

Years as a Leader	<i>f</i>	%
1 to 5	29	31.87
6 to 10	17	18.68
11 to 15	8	8.79
16 to 20	9	9.89
20 or more	5	5.50
No Response	23	25.27

Out of a total of 91 participants, 68 responded to the question “How many years have you been a leader for the Utah 4-H Equine Program?” Answers ranged from one year to 37 years with a Mean of 9.30 years. Based on these numbers, the majority (50.55%) of Utah 4-H Equine Program leaders who responded had 10 years or less experience as a 4-H leader. While experience as a 4-H leader was low, 98.90% of respondents indicated having experience in one or more facets of the equine industry (Table 5).

Table 5

Equine Industry Experience (n = 72)

Type of Experience	<i>f experienced</i>	<i>Min.</i> <i>years</i>	<i>Max.</i> <i>years</i>	<i>Mean years</i>
Horse Owner	64	3	65	27.56
Competitor	46	1	48	15.78
Taken Riding Lessons	44	1	55	12.33
Riding Instructor (unpaid)	39	2	30	11.80
Horse Trainer	30	1	60	16.24
Horse Show Judge	29	1	20	7.04
Riding Instructor (paid)	24	1	60	12.35
Other	17	N/A	N/A	N/A
Farrier	8	5	50	25.00

The equine industry experience with the highest activity level was owning a horse, (70.33%). The minimum number of years as a horse owner was three with the maximum being 65 years of horse ownership. On average Utah 4-H Horse Program leaders had owned a horse for roughly 27 years ($SD = 16.22$). The industry experience with the lowest activity level was that of a farrier ($n = 8$) with years of experience ranging from five to 50 and an average of 25 years.

In addition to the equine experiences listed, respondents were also given the option of “Other” with space to explain. Out of the total respondents, 17 of them selected “Other.” Explanations offered included attending clinics, receiving a college degree in Equine Science, working as a cowboy, working for an outfitter, being an equine science teacher, completing a six month equine internship, being a certified Professional Association of Therapeutic Horsemanship (PATH) instructor, being raised on a ranch, and attending 4-H horse camps. The remainder of those selecting “other” did not give an explanation.

Objective Two: Describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs.

The second objective examined current safety practices and resources being used by Utah 4-H Equine Program leaders. This information is important to determine if the current resources being offered are adequate as well as examining leaders’ knowledge of available resources. The information gathered will also aid Extension personnel in further developing tools and resources for the Utah 4-H Equine Program. For this objective, participants were asked to list the resources that they use for teaching equine safety in the club setting. Responses varied widely, with multiple sources being listed by more than one individual. These responses and their frequencies are summarized in Table 6.

Table 6

Resources Used to Teach Safety (n = 72)

Type of Resource	<i>f</i>	%
4-H Curriculum	25	56.82
Personal Knowledge	23	52.27
Trainers/Other Horsemen	7	15.91
Other 4-H Leaders	6	13.64
YouTube Videos	6	13.64
Breed/Show Associations	5	11.36
Other Books	5	11.36
Internet Searches	5	11.36
Trainer Produced Resources	3	6.82
Friends and Family	2	4.55
Extension Personnel	2	4.55
Parents of Youth	2	4.55
Not Sure Where to Look/None	2	4.55
Social Media	2	4.55
Saddle Up Safely	1	2.27
Veterinarians	1	2.27
4-H Horse Council	1	2.27
College Degree	1	2.27
Clinics	1	2.27

Out of the 72 who participated in this study, 44 responded to the question about what resources they use. The most common resource used was the 4-H horse curriculum, with a total of 25 respondents (56.82% of question participants) listing it as one of their main sources of information. The second most common resource was listed as “personal knowledge/experience,” with 52.27% of respondents listing it as one of their main resources. Third most common resource dropped dramatically to 15.91% using trainers or other horsemen as a common

resource. Other resources listed by more than 10% of respondents included other 4-H leaders, YouTube, breed or show association curriculum, other books, and internet searches.

Objective Three: Describe Utah 4-H Equine Program leaders' attitudes, perceived behavioral controls, subjective norms and intentions toward teaching and learning equine safety.

Within the theory of planned behavior, the first indicator of behavioral intentions is an individual's attitude towards a specific behavior. For the purpose of this study, I examined the Utah 4-H Equine Program leaders' attitudes towards teaching and learning equine safety in a club setting. Respondents were given a list of statements and a six-point Likert scale from 1 "Strongly Disagree" to 6 "Strongly Agree."

Findings indicate the overall the attitudes towards teaching equine safety to youth were positive with a mean of 5.69 overall (see Table 7). Out of the listed prompts, respondents had the most positive attitude toward "As a 4-H Equine Program leader I believe that teaching equine safety to youth is important" and the lowest positive attitude toward "As a 4-H Equine Program leader I enjoy teaching equine safety to youth."

Table 7

Attitudes Towards Teaching Equine Safety (n = 72)

As an 4-H Equine Program leader...	Minimum*	Maximum*	<i>M</i>	
I believe that teaching equine safety to youth is important.	1.00	6.00	5.84	0.66
I find it beneficial to integrate safety into the equine program activities.	1.00	6.00	5.63	0.75
I enjoy teaching equine safety to youth.	1.00	6.00	5.59	0.60
Total Attitude Construct	1.00	6.00	5.69	0.67

1 = Strongly Disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree

The second construct measured was that of subjective norms towards teaching equine safety. Respondents were given a series of statements with a Likert scale ranging from 1 “Strongly Disagree” to 6 “Strongly Agree”. Because this construct was not reliable, I report these as individual items. The statement with the highest agreement was “The parents of my club member expect me to be responsible for teaching equine safety to their children” and the statement with the lowest agreement was “I feel solely responsible for the safety of the youth in my club in regards to their work with horses.” The complete results for each of these statements are presented in Table 8.

Table 8

Subjective Norms Regarding Teaching Equine Safety (n = 72)

	Minimum*	Maximum*	<i>M</i>	<i>SD</i>
The parents of my club members expect me to be responsible for teaching equine safety to their children.	1.00	6.00	4.74	1.15
Stakeholders to the 4-H Equine Program fully support the integration of safety in my teaching activities.	1.00	6.00	4.70	1.03
I feel solely responsible for the safety of the youth in my club in regards to their work with horses.	1.00	6.00	4.10	1.55
Total Subjective Norms Construct	1.00	6.00	4.51	1.24

1 = Strongly Disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree

According to the data, the respondents slightly agree that they should be involved in the integration of equine safety within the 4-H club setting. The prompt with the highest indication of influence was “The parents of my club members expect me to be responsible for teaching equine safety to their children” ($M = 4.74$; $SD = 1.15$) and the prompt with the lowest level of influence was “I feel solely responsible for the safety of the youth in my club in regards to their work with horses” ($M = 4.10$; $SD = 1.55$).

Perceived behavioral controls were observed by offering statements along with a Likert scale ranging from 1 “Strongly Disagree” to 6 “Strongly Agree.” Two separate question blocks were used for this objective. The first gave the prompt “Teaching safety to youth in my equine program club is difficult because...” followed by a series of scenarios. The scenario with the most agreement was “There is a lack of safety training resources” and the least agreement was

“There is a lack of safety equipment available for adequately training youth.” The results of this prompt are found in Table 9.

Table 9

Perceived Challenges Teaching Equine Safety (n = 72)

Teaching safety to the youth in my equine program club is challenging because...	Minimum*	Maximum*	<i>M</i>	<i>SD</i>
There is a lack of safety training resources.	1.00	6.00	3.83	1.86
The youth push back when I try to teach them about safety.	1.00	6.00	3.61	1.82
There is a lack of safety equipment available for adequately training youth.	1.00	6.00	3.45	1.80
Total	1.00	6.00	3.63	1.83

1 = Strongly Disagree, 2 = Disagree, 3 = Slightly disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree

The second block gave the prompt “To overcome the challenges associated with properly teaching youth about equine safety, I would most likely seek help from...” followed by a series of possible resources. The top three choices were “other leaders,” “professional horse trainers,” and “internet resources” with “other family members” being the least likely resource to seek help from. The complete results of the second prompt can be found in Table 10.

Table 10

Overcoming Challenges Regarding Equine Safety (n = 72)

To overcome challenges associated with teaching youth about equine safety I would seek help from...	Minimum	Maximum	<i>M</i>	<i>SD</i>
Other leaders in the local club.	1.00	6.00	4.73	1.36
Professional horse trainers.	1.00	6.00	4.69	1.14
Internet resources.	1.00	6.00	4.61	1.13
Parents associated with the local club.	1.00	6.00	4.57	1.36
4-H developed equine safety resources.	1.00	6.00	4.54	1.11
County Extension officials.	1.00	6.00	4.39	1.41
State Extension officials.	1.00	6.00	4.23	1.23
Other family members.	1.00	6.00	4.06	1.46
My spouse.	1.00	6.00	3.27	1.62
Nobody, I would not need help.	1.00	6.00	2.31	1.27
Total	1.00	6.00	4.14	1.31

Overall the biggest reported by respondents was a lack of safety training resources, which 54.9% of leaders gave an answer of “Somewhat agree” or higher. All challenges listed had a close mean. For the topic of “youth push back” 52.1% answered “Somewhat Disagree” or lower. Lastly, for the topic “safety equipment available” 53.5% answered “Somewhat Disagree” or lower.

Based on the average mean of overcoming challenges, most leaders reported that they can adequately overcome challenges with access they have to others with more experience ($M = 4.14$). Only 11.8% of respondents answered “Somewhat Agree” or higher to the statement “To overcome the challenges associated with properly teaching youth about equine safety, I would most likely seek help from nobody, I would not need help.” Based on the data, the majority of

Utah 4-H Equine Program leaders reported being comfortable seeking help from one or more of the resources listed.

Objective four: Determine the relationship between Utah 4-H Equine Program leaders' attitudes toward equine safety and intentions to integrate equine safety.

Based on the Cronbach's alpha coefficients, the attitude construct was reliable ($\alpha = .84$) but all other constructs were not, including the independent variable, intentions to integrate ($\alpha = .50$). Therefore an analysis could not be completed for objective number four as stated.

CHAPTER V

CONCLUSIONS

Objective One

Objective One sought to describe the sample of Utah 4-H Equine Program Leaders. The demographics observed included personal demographic information, personal equine experience and leaders' range of experience with the 4-H program. Out of the respondents that answered the question on age, the majority respondents were women over the age of 30. There are several factors that may contribute to this statistic such as a higher involvement of stay at home moms, or that younger generations are not taking on roles as 4-H leaders whether it be due to lack of time or lack of experience. Despite the majority of respondents being over 31 years of age, the majority of them reported having 10 years or less experience as a 4-H leader with a significant number of them having less than five years experience as a leader. Interestingly, this statistic is parallel to demographic information found in the study involving communication tendencies of 4-H Horse Program facilitators in Arkansas (Kurtzo et al., 2019). Demographics from the study also reported the majority of their 4-H Horse Program facilitators as being females in their thirties with less than 5 years of experience as a facilitator (Kurtzo et al., 2019).

These demographics mean that the Utah 4-H Horse Program is lacking male leaders, young leaders, and long-term leaders. By lacking in male leader participation in the Utah 4-H Equine program, this may translate to lack of participation of male youth in the program as well. I recommend further research be done on the possible effects of female vs male leader participation and how gender roles may adversely affect the participation of young men in the program.

According to the data collected, there is also a lack of long-term leaders in the program. This could be a sign that the 4-H program in general is having success in recruiting new leaders in recent years, but could also be a sign that the Utah 4-H program is struggling to maintain their pool of experienced leaders. By lacking in experienced leaders, the Utah 4-H program has fewer leaders to mentor the new generation of leaders coming in. This may result in new leaders having a harder time overcoming obstacles without proper guidance from experienced leaders. I recommend that Extension examines their current resources available in order to determine if this pool of leaders has adequate resources and mentorship to perform to the best of their abilities in their roles as 4-H leaders.

Finally, the demographics portion of the survey examined the extent of leaders' experience in the equine industry as a whole, both in and out of the 4-H program. The goal of this objective was to get an idea of the level of experience that Utah 4-H Equine Programs leaders have. The amount of personal experience held by leaders may translate to the level of guidance and training that they can offer to the youth within the program. These findings shed light on the types of experience held by leaders within the Utah 4-H Equine Program, but it does not indicate how their background translates to their level of equine expertise. For example, a leader that has 10 years of experience as a competitor may or may not have as much equine knowledge as someone who has been a horse owner for 20 years but never competed. These findings help us to understand the variation of horse experiences among the 4-H leaders, but it does not give us any way to categorize levels of equine expertise. Further studies are necessary if we want to gauge the level of expertise that our 4-H youth are being exposed to and how our leaders' backgrounds translate to their ability to adequately teach equine safety to youth within the Utah 4-H Equine Program.

While the definition of “experience level” is not clear, there is some alignment with other literature implying that the more experience one has with an inherent risk, the more likely they are to see youth as having high vulnerability to injury (Stoneman & Jinnah, 2016). This channel of thought may translate to a positive attitude toward teaching safety to youth, which in turn adds to the intention to integrate said teachings according to the theory of planned behavior (Ajzen, 1991). According to the data, participants reported having high instances of participating in the equine industry as horse owners, competitors, and having taken riding lessons. Respondents also showed a positive attitude towards the topic of teaching equine safety to youth, I therefor can deduce that there is a connection between leaders’ background knowledge in the Equine industry and their intentions to teach equine safety to youth. This information is pertinent to Extension personnel as it would benefit the Utah 4-H Equine program to begin or continue to target current equine professionals for leader recruitment.

Objective Two

Objective two sought to describe the current safety practices and resources being used in teaching Utah 4-H youth in the equine programs. The purpose of this objective was to better understand what resources are currently being used in teaching equine safety to youth within the Utah 4-H Equine Program. By understanding what resources are being used, extension personnel can better determine if the resources being used are adequate or if there may be a lack of resources available to leaders in the state of Utah.

Findings suggest that the majority of leaders in the Utah 4-H Equine Program use the 4-H Horse Curriculum offered through the Utah 4-H office. This curriculum includes the “Horses and Horsemanship” and “Horse Science” books that are offered through each county’s extension office. These books are available for purchase for all youth, leaders, parents, and volunteers at

little to no cost. This curriculum is regularly updated, however there is a question of how accurate the information presented in these books always is. While it is great that the leaders are using the materials put out by the Extension office, this puts more pressure on Extension to keep information adequate and up to date. Past literature offered was primarily for the purpose of teaching youth about equine science and various equine events, but is not very expansive on equine safety topics. Utah State University Extension and the Utah Horse Council are currently working on updating the curriculum of the Utah 4-H Equine Program and have recently released Volume One of the new curriculum. I recommend that in updating this information, there be materials included that specifically cover equine safety and how to teach safety topics to youth.

The second most common resource used was that of “Personal Knowledge” (52.27%). The question is how does one measure the level of ones “Personal Knowledge?” One 4-H club could be led by someone who is considered a “professional” in the industry while another could be led by someone who is considered a “beginner,” both of which are subjective terms. Further research may be needed in this area to better understand the validity of “Personal Knowledge” as a resource when it comes to teaching equine safety to 4-H youth. One recommendation is that time be spent developing knowledge testing for the leaders to help them gauge their own level of knowledge and how they may improve for the benefit of the youth that they are teaching on a weekly basis.

In addition to the common use of “4-H Curriculum” and “Personal Knowledge” as resources, the next most common resource was “Trainers/Other Horsemen” with a fairly low response rate of 15.91%. As the equine industry changes and evolves, trainers are continually learning new training and safety methods when working with their equine partners. While the internet and written sources may provide access to these improved methods, individuals with

hands on experience may be some of the best untapped resources to the Utah 4-H Equine Program. The response rate for the use of other trainers may be low simply due to a lack of knowing who or where to find information on local trainers in various parts of Utah. In order to remedy this, recommendations are to compile a list of local trainers or horseman in various parts of the state. Local leaders may need to use word of mouth to find respected trainers and horsemen in each county that can be listed as a contact on the Utah State University Extension website, with their permission. Another recommendation I would make is for counties to hold local or regional equine events such as clinics or trainings that can provide networking opportunities for leaders and youth alike.

Objective Three

Objective three sought to describe Utah 4-H Equine Program leaders' attitudes, subjective norms, perceived behavioral controls, and intentions towards teaching and learning equine safety. In accordance with the theory of planned behavior, the first purpose of this objective was to understand the attitude of Utah 4-H Equine Program Leaders in regards to teaching equine safety to their club members. Overall, leaders had a positive attitude towards teaching equine safety to youth. Findings indicate, they believe teaching equine safety in the club setting is important, enjoyable and beneficial to their equine program activities. This result is positive as it means that leaders in the state of Utah hold equine safety in high regard. However, this still does not answer the question of what safety skills they teach youth or how effective their instruction methods are. Further research is necessary to determine the level of safety instruction in the Utah 4-H Horse Program and how that translates into effectiveness of instruction. The recommendation would be observation of 4-H Horse Program leader instruction during meeting times, and determining levels of information retention by youth.

The next purpose of this objective was to understand how certain subjective norms may or may not influence a leader's decision to teach equine safety in their club. Findings suggest subjective norms have a relatively high influence on Utah 4-H Equine Program leaders. The prompt with the most positive response rate was "The parents of my club members expect me to be responsible for teaching equine safety to their children." This finding suggests, we can see that the greatest perceived motivator for leaders to teach equine safety to youth is the parents' expectations. This is a positive because it indicates the leaders are aware of their responsibility when it comes to working with other peoples' children and that they are taking the parents expectations into account. Findings also show that leaders feel stakeholders support integrating safety in teaching activities in the Utah 4-H Equine Program. This is also a positive result, as it shows that our equine program leaders feel as though they are supported in their efforts by Extension personnel. This support is important for the reputation of the 4-H program as well as retention of our leaders and youth.

According to the theory of planned behavior, subjective norms can have a direct effect on the performance of a set behavior, in this case the behavior is teaching safety to youth. While subjective norms were not considered reliable as a construct, the overall positive response rate to the individual items, still indicates a positive influence on leaders' intentions to integrate safety (Ajzen, 1991). This, along with the relationship between background knowledge in equine industries and a positive attitude toward safety, may still translate to Utah 4-H Equine Program leaders being highly likely to implement teaching equine safety to youth regardless of the reliability of the individual constructs of the instrument.

The final statement given was "I feel solely responsible for the safety of the youth in my club in regards to their work with horses." Respondents showed only a slightly less positive

response to this statement, but in general agreed that they feel great responsibility in teaching safety to the youth in the Utah 4-H Equine Program. While it is good that our leaders feel a high level of responsibility in providing safety instruction to our youth, I recommend further research be done in the at-home safety practices of youth and their parents when working with horses. The majority of the time a youth spends with their horse, will be spent at home and it is important to see that the safety practices taught in the club setting are being implemented at all times and not only when a Utah 4-H Equine Program leader is present.

The final portion of objective three was to describe perceived behavioral controls in regards to teaching equine safety in the Utah 4-H Horse Program. The purpose of describing Utah 4-H leaders' perceived behavioral controls was to see what challenges Utah 4-H Equine Program leaders face and how they overcome those challenges. By understanding this, Extension personnel can better help the leaders overcome these and therefore improve the 4-H program in Utah.

Respondents were first asked about their challenges when teaching equine safety to youth. The possible challenges included lack of safety training resources, youth push back, and lack of safety equipment. On average respondents were somewhere between "slightly disagree" and "slightly agree." Without having strong opinions in one direction, it is difficult to decipher the biggest challenges facing our leaders in teaching equine safety. It would be beneficial for more research to be completed in this area, perhaps further breaking down the definition of challenges and giving leaders the ability to better explain the answers that they provide.

While the challenges faced by Utah leaders were not clear, respondents did clearly agree with seeking guidance from many of the listed sources when they are faced with challenges. Findings show that respondents were most likely to seek help from other local 4-H leaders,

professional horse trainers, internet resources, parents associated with the club, or 4-H developed resources. These findings suggest that regardless of what challenges may arise, Utah 4-H Equine Program leaders feel comfortable seeking guidance from multiple resources provided at the local level. This information is encouraging, as it shows that our local 4-H leaders feel supported in their efforts and that they have adequate assistance when needed. The recommendation for USU Extension State 4-H directors would be to maintain the availability of these resources to Utah 4-H leaders and volunteers.

Objective Four

Objective four sought to determine the relationship between Utah 4-H Equine Program leaders' attitudes toward equine safety and intentions to integrate equine safety. Based on the results of the pilot study the constructs of Perceived Behavioral Controls and Subjective Norms were not reliable according the instrument used. However, attitude and intentions to integrate were both reliable base on the results of the pilot, with both having a Cronbach's alpha of .70 or greater. Upon completion of the study, the attitude construct maintained its reliability with a Cronbach's alpha of .84, however the construct of intention to integrate fell to .50. As a result, I was not able to use these constructs to determine a relationship between the two. For future studies, I recommend that further research be done in developing a more accurate instrument that can better determine the relationship between attitudes, perceived behavioral controls and subjective norms.

Summary of Recommendations for Practice

- Ensure that local and state extension offices have adequate resources and mentorship opportunities available to all leaders.
- Continue or increase efforts to target current equine professionals for leader recruitment.

- Update current 4-H Equine Program literature to include materials that specifically cover equine safety.
- Develop evaluation tools to help leaders gauge their personal knowledge of equine safety so that they may know where they can improve.
- Encourage counties to host more local and regional events focusing on networking with local equine professionals to use as a teaching resource.
- Maintain availability of resources available to 4-H Equine Program leaders.

Summary of Recommendations for Research

- Examine the effects of female vs male leadership and how gender roles affect participation of boys in 4-H Equine programs.
- Examine how leaders' background may play a role in their ability to adequately teach equine safety to youth.
- Observe 4-H Equine Program instruction and develop a means to determine retention of information by youth.
- Further examine the challenges that Utah 4-H Equine Program leaders face when teaching equine safety to youth.

While this study may not be generalizable outside the state of Utah, it does add to the limited literature available on the subject of safety within the 4-H Equine program. This study gives a good overview of how Utah 4-H Equine Program leaders feel in regards to implementing safety within their 4-H clubs and provides additional information that is relevant to the further development and growth of the Utah 4-H Equine Program.

References

- Allen, P. R., Naile, T. L., Vestal, T. A., & Dozier, M. (2014). Texas and Southwestern Cattle Raisers Association members' preferred sources of animal health information. *Journal of Applied Communications*, 98(4), 99-112. DOI:10.4148/1051-0834.1096
- Annest, J. L., Bixby-Hammett, D. M., Gilcrest, J., Thomas, K. E.. (2006). Non-fatal horse related injuries treated in emergency departments in the United States 2001-2003. *British Journal of Sports Medicine*, 40(7), 619-626. DOI: 10.1136/bjism.2006.025858
- Ajzen, I. (1985). From intention to actions: A theory of planned behavior. *Action Control: From Cognitions to Behavior*. 11-39.
- Ajzen, I. (1987). Attitudes, traits and actions: Dispositional prediction of behavior in personality and social psychology. *Advances in Experimental Social Psychology*. 20(1), 1- 63. DOI: 10.1016/S0065-2601(08)60411-6
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. DOI: 10.1016/0749-5978(91)90020-T.
- Beierle, E. A., Chen, M. K., Cuenca, A. G., Islam, S., Kays, D. W., Wiggins, A. (2009). Equestrian injuries in children. *Journal of Pediatric Surgery*. 44(1). 148-150. DOI: 10.1016/j.jpedsurg.2008.10.025.
- BLS. (2015). Number and rate of fatal occupational injuries by industry sector, 2014. Washington, DC: Bureau of Labor Statistics. Retrieved from www.bls.gov/iif/oshwc/cfoi/cfch0013.pdf

- Bond, G. R., Christoph, R. A., & Rodgers, B. M. (1995). Pediatric equestrian injuries: Assessing the impact of helmet use. *Pediatrics*, 95(4), 487. Journal ISSN: 0022 4375
- Brady, C., & McKee, K. (2004). Why should 4-H horse and pony youth wear certified equestrian helmets?. *Journal of Extension*, 42(6). Retrieved from <https://www.joe.org/joe/2004december/tt4.php>
- Brussoni, M., Olsen, L.L., Pike, I., & Sleet, D.A. (2012). Risky play and children's safety; Balancing priorities for optimal child development. *International Journal of Environmental Research and Public Health*, 9, 3134–3148. DOI:10.3390/ijerph9093134
- Carmicheal II, S. P., Davenport, D. L., Kearney, P. A. & Bernard, A. C. (2014). On and off the horse: Mechanisms and patterns of injury in mounted and unmounted equestrians. *Injury*, 45(9), 1479-1483. DOI: 10.1016/j.injury.2014.03.016.
- Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers and Education*, 59, 1054-1064. DOI: 10.1016/j.compedu.2012.04.015
- Dillman, D., 2007. *Mail and internet surveys: The tailored design method*. Hoboken, NJ: John Wiley & Sons.
- Evans, J. & Heiberger, S. (2015). Fitting farm safety into risk communications teaching, research and practice. *Journal of Applied Communications*, 99(3), 86-80. Retrieved from https://gale.link.com.dist.lib.usu.edu/apps/doc/A435542913/PPAG?u=utah_gvrl& sid=PPAG&xid=d138c2fd

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison Wesley.

Gadd, M., Hiney, K., & Robinson, J. S. (2018). The technical skills that need to be included in a collegiate equine handling course according to equine industry experts. *North American Colleges and Teachers of Agriculture Journal*, 62(4), 346-352.

Retrieved from <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=14&sid=07149012-16c94fcb-b044-c6a0f4d96241%40sessionmgr4007>

Hard, D. L., Myers, J. R., Gerberich, S. G. (2002). Traumatic injuries in agriculture. *Journal of Agricultural Safety and Health*, 8(1), 51-65. DOI: 10.13031/2013.7226

Hawson, L. A., McLean, A. N., & McGreevy, P. D. (2010). The roles of equine ethology And applied learning theory in horse-related human injuries. *Journal of Veterinary Behavior: Clinical Applications and Research*, 5(6), 324-338. DOI: 10.1016/j.jveb.2010.06.001.

Heath, R. L., Novak S. P., Reed, D. B. (1998). Farm youth and horse-related injuries: A case for safety helmets. *Journal of Agromedicine*, 5(1), 45-57. DOI: 10.1300/J096v05n01_06

Hendricks, K. J., Layne, L. A., & Goldcamp, E. M. (2012). National estimates of youth and injuries on U. S. farms, 2012. *Journal of Agriculture Safety and Health*, 24(4), 261-269. DOI 10.13031/jash.14014

Jadhav, R., Achutan, C., Hynatzki, G., Rajaram, S., & Rautiainen, R. (2016). Review and meta-analysis of emerging risk factors for agricultural injury. *Journal of Agromedicine*. 21(3). 284-297. DOI: 10.1080/1059924X.2016.1179611

Jagodzinski, T., DeMuri, G. P. (2005). Horse-related injuries in children: a review.

Wisconsin Medical Journal, 104(2), 50-54. Retrieved From:

<https://pdfs.semanticscholar.org/b60a/c6dc2d5bea49bf1f97101a774c495fbe3bfd.pdf>

Kimble, R. M., Stockton, K. A., Theodore, J. E., Theodore, S. G. (2017). Paediatric horse-related trauma. *Journal of Paediatrics and Child Health*, 53(6), 543-50.

DOI: 10.1111/jpc.13471

Kurtzo, F., Edgar, L. D., Edgar, D. W., Graham, D. L. & Russell, M. (2019). Exploring communication tendencies of program facilitators. *Journal of Applied Communications*, 103(1), 1-17. <https://doi.org/10.4148/1051-0834.1415>

Lindner, J., Murphy, T., & Briers, G. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43-53.

DOI:10.5032/jae.2001.04043

McCurdy, S. A., & Carroll, D. J., (2000). Agricultural injury. *American Journal of Industrial Medicine*, 38(1), 463-480. DOI: 10.1002/1097-0274(200010)38:4<463AIID-AJIM13>3.0.CO;2-N

Miller, R. L., Webster, J. K., & Mariger, S. C. (2004). Nonfatal injury rates of Utah agricultural producers. *Journal of Agricultural Safety and Health*. 10(4), 285-293.

National 4-H Horse Council, Antoneiwicz, R. J. (2001). Horses and Horsemanship: An Educational Resource. *4-H Horse Program Series*.

NCASH. (1989). A report to the nation: *Agricultural occupational and environmental health: Policy strategies for the future*. Iowa City, Iowa: National Coalition for Agriculture Safety and Health.

- NCCRAHS. (2012). 2012 *Fact sheet: Childhood agricultural injuries in the U.S.* Marshfield, Wisconsin: National Children's Center for Rural and Agricultural Health and Safety. Retrieved from www3.marshfieldclinic.org/proxy/mcrf-centers-nfmc-nccrahs-childaginjuryfactsheet_april-2012.1.pdf
- Nelson, D. E., Rivara, F. P., & Condie, C. (1994). Helmets and horseback riders. *American Journal of Preventative Medicine*, 10(1), 16-19. DOI: 10.1016/S0749-3797(18)30641-X
- NIOSH. (2018). Childhood agricultural injury prevention initiative: Childhood agricultural injury survey (CAIS) results. *Centers for Disease Control and Prevention*. Retrieved from <https://www.cdc.gov/niosh/topics/childag/cais/demotables.html>
- Nunally, C., Bernstein, I.H., (1994). *Psychometric theory*. New York, NY: McGraw-Hill.
- Ryan, S., & Carr, A. (2010). Applying the biopsychosocial model to the management of rheumatic disease. *Rheumatology: Evidence-Based Practice for Physiotherapists and Occupational Therapists*. 63-75. DOI: 10.1016/B978-0-443-06934-5.00005-X
- Sanchez, L. (2017). 'Every time they ride, I pray:' parents' management of daughters' Horseback riding risks. *Sociology of Sport Journal*, 34(1), 259-269. <http://dx.doi.org/10.1123/ssj.2016-0111>
- Stoneman, Z. & Jinnah, H. (2016). Farm families: gendered perceptions of youth safety and injury vulnerability. *Sex Roles*, 76(1), 250-263. DOI: 10.1007/s11199-016-0659-1
- Shumway, K. (2013). *Needs assessment for promoting livestock and equine safety in Dine youth*. (Masters Thesis). Utah State University, Logan, Utah.
- USPC. (2016). Safety requirements for helmets. USPC By-Laws, Policies & Resolutions. Retrieved from <https://www.ponyclub.org/ContentDocs/Policies/0800atta.pdf?1>

Utah 4-H. (2019). 4-H projects. Retrieved from <https://utah4h.org/projects/>

Utah Code 78-27b-102. (2006). Retrieved from

https://law.justia.com/codes/utah/2006/title78/78_25003.html

Utah Code 78-27b-101. (2006). 4. Retrieved from

https://law.justia.com/codes/utah/2006/title78/78_25002.html

Utah State University Extension. (2015). Horsemanship Contest Rules. Retrieved from

<https://utah4h.org/files/Projects/agriculture/Horse/Western/Western-Rule-Book2019.pdf>

Wimmer, R. D., & Dominick, J. R. (2013). *Mass media research*. Cengage Learning.

Wilmes, E. & Swenson, R. (2019). Engaging dairy farmers in safety messages: values, moral norms, barriers, and implications for communication. *Journal of Applied Communications*, 103(1), (n.p.). DOI: 10.4148/1051-0834.2204

APPENDIX A

Utah 4-H Equine Program Leaders Perceptions of Equine Safety Survey

Purpose

You are invited to participate in a research study conducted by Tyson Sorensen and Katelyn Huffman at Utah State University. This study is also supported by the Utah 4-H Program. The purpose of this research is to understand the attitudes of Utah 4-H Equine Program leaders towards teaching equine safety to youth. This form includes detailed information on the research to help you decide whether to participate in this research study. Please read it carefully and ask any questions you have before you agree to participate.

Procedures

Your participation will involve taking one online survey, which should take approximately 5 minutes.

Risks

This is a minimal risk research study. That means that the risks of participating are no more likely or serious than those you encounter in everyday activities. To reduce the potential risk of lost confidentiality, research records will be kept consistent with federal and state regulations. You are not asked for your name in the evaluation.

Benefits

There is no direct benefit to you for participating in this research study. More broadly, this study will help the researchers understand the challenges and benefits of teaching equine safety to youth and therefor help stakeholders develop resources and implement strategies and programming to improve safety integration within the Utah 4-H Equine program.

Confidentiality

The principal investigator will make every effort to ensure that the information you provide as part of this study remains confidential. You are not asked your name in the survey at any time. The data from the survey will be downloaded into a statistical program (SPSS) for data analysis, and any data files for this study will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage. It is unlikely, but possible, that others (Utah State University or state or federal officials) may require me to share the information you give me from the study

to ensure that the research was conducted safely and appropriately. I will only share your information if law or policy requires me to do so.

Compensation

For your participation in this survey, you will have the opportunity to be entered into a drawing for an Amazon gift card, worth \$50.00. To do so, we ask that you provide your email and name in a separate form (not linked to your survey responses).

Voluntary Participation & Withdrawal

Your participation in this research is completely voluntary. If you agree to participate now and change your mind later, you may withdraw at any time before the evaluations are collected. Completely anonymous participation (this study) cannot be withdrawn after submission, as the researchers will be unable to determine whose data is whose.

IRB Review

The Institutional Review Board (IRB) for the protection of human research participants at Utah State University has reviewed and approved this study. If you have questions about the research study itself, please contact the Principal Investigator, Tyson Sorensen at 435-797-5741 or tyson.sorensen@usu.edu. If you have questions about your rights or would simply like to speak with someone other than the research team about questions or concerns, please contact the IRB Director at (435) 797-0567 or irb@usu.edu.

By clicking “I agree” below, you agree to participate in this study. You indicate that you understand the risks and benefits of participation, and that you know what you will be asked to do. You also agree that you have asked any questions you might have, and are clear on how to stop your participation in the study if you choose to do so.

- I agree
- I do not agree

Thank you for taking the time to complete this survey! Your input is very valuable and will lead to improvements in 4-H programming.

Please complete each question as accurately as possible.

When you have completed the survey, a message screen will appear indicating successful completion.

How often are topics of safety explicitly taught to the youth in your club?

- Never
- Sometimes
- Most of the time
- Always

What specific resources do you use to teach safety? (list name and origin of specific resources if possible, including any website URLs, textbooks, curriculum packages, etc. Put each additional resource on a separate line.)

What is your gender?

- Male
- Female
- Do not wish to disclose

What is your age in years? (Please use whole numbers.)

How many years have you been a leader for the Utah 4-H Equine Program?

Out of the following equine industry experiences, which have you been participated in? Select all that apply. Please indicate the number of years you have participated in each selected field in the text entry box next to the selection.

- Horse Owner: _____
- Farrier: _____
- Horse Trainer: _____
- Horse Show Judge: _____
- Competitor: _____
- Riding Instructor (paid): _____
- Riding Instructor (unpaid): _____
- Taken Riding Lessons: _____
- Other: _____

APPENDIX B

Pre-Notice Email to Participants

SUBJECT: Notification of an important upcoming 4-H Equine Program survey.

Dear 4-H Leader,

The Utah 4-H Equine Program is a great way for youth to be able to gain experience with their equine partners, by providing youth with a controlled environment in which they can learn and grow as riders, leaders, and animal caretakers. In working with youth and horses, safety is an integral part of the learning process in handling these large animals. We understand that working with youth and their equine partners presents its challenges, so we wanted to be able to better understand your perceptions as an equine leader when it comes to teaching equine safety to youth within the Utah 4-H program.

In the next few days, you will receive an email asking you to participate in the Utah 4-H Equine Program Safety survey. When you receive the email, we ask that you please take the short survey that will take approximately 5 minutes.

To show our appreciation for your time and effort in completing the survey, you can be entered into a drawing for a \$50.00 Amazon gift card.

If you have any questions about the upcoming survey, please feel free to contact Dr. Tyson Sorensen (tyson.sorensen@usu.edu) or Katelyn Huffman (kthuff.huffman1@gmail.com). Thank you in advance for helping to improve the Utah 4-H Equine Program!

Sincerely,

Tyson J. Sorensen

Assistant Professor

Utah State University

Katelyn Huffman

Student Researcher

Utah State University

APPENDIX C

E-mail to Participants (4-H Equine Program Leaders)

SUBJECT: Important Study: Utah 4-H Equine Program leader perceptions of teaching equine safety

Dear Utah 4-H Equine Program Leader,

You were randomly selected to participate in a state-wide study regarding the perceptions of 4-H Equine Program leaders in teaching equine safety to youth.

This research study is aimed at understanding the perceptions of Utah 4-H Equine Program leaders in teaching equine safety to youth. In order to improve the resources available to leaders and therefore the safety education available to youth, we must understand the current practices being used within the club setting. We would really appreciate your participation in this survey so that we may move forward in understanding how we can improve the Utah 4-H Equine Program.

The survey will take approximately 5 minutes. You will be able to exit the survey at any time and return to the spot you left off using the link in this e-mail (as long as you don't clear your browser history). For your convenience below is a link to the survey, please copy and paste the link into your browser to access the survey.

{LINK}

To show our appreciation for your time and effort in completing the survey you may choose to be entered into a drawing of a \$50 Amazon gift card. Note: your personal information will not be linked to the survey responses and your information will only be used for this incentive.

If you have any questions about the survey, please feel free to contact Dr. Tyson Sorensen (tyson.sorensen@usu.edu) or Katelyn Huffman (kthuff.huffman1@gmail.com). Thank you for helping to improve the Utah 4-H Equine Program!

Sincerely,

Tyson J. Sorensen

Assistant Professor

Utah State University

Katelyn Huffman

Student Researcher

Utah State University

APPENDIX D

Follow-Up E-mail to Participants

Subject: 4-H Equine Safety Survey Reminder

Hello,

We hope that you had a wonderful Holiday, spent with family and friends!

Thank you to everyone has participated in the 4-H Equine Safety Survey so far. If you have already taken the survey, you may disregard this email. For those of you who have not taken the survey, if you could please do so by January 11, 2019 that would be great. We have had great responses thus far and we are excited to see how the information we have gathered may benefit the Utah 4-H Horse Program.

Don't forget that those who participate will be given the option at the end of the survey to be entered into a drawing for one of several \$50 Amazon Gift Cards!

In case you have misplaced the link here it is again:

{LINK}

You can simply copy and paste this link into your browser on any desktop, laptop, or smart device.

Sincerely,

Tyson J. Sorensen

Assistant Professor

Utah State University

Katelyn Huffman

Student Researcher

Utah State University