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Applying Affective Engagement to Change Organizational Culture: A Secondary Analysis of Sexual Assault Prevention and Reporting Curriculum Outcomes on U.S. Air Force Technical Training Campuses

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APPLYING AFFECTIVE ENGAGEMENT TO CHANGE ORGANIZATIONAL CULTURE: A SECONDARY ANALYSIS OF SEXUAL ASSAULT PREVENTION AND REPORTING CURRICULUM OUTCOMES ON U.S. AIR FORCE TECHNICAL TRAINING CAMPUSES

by

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ABSTRACT

APPLYING AFFECTIVE ENGAGEMENT TO CHANGE ORGANIZATIONAL CULTURE: A SECONDARY ANALYSIS OF SEXUAL ASSAULT PREVENTION AND REPORTING CURRICULUM OUTCOMES ON U.S. AIR FORCE TECHNICAL TRAINING CAMPUSES

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Sexual assault, sexual harassment, and unprofessional relationships are inconsistent with U.S. Air Force vision to foster a culture that promotes dignity and respect. These problems reduce military readiness and retention of talented personnel while increasing costs to taxpayers. To combat these problems, the U.S. Air Force revised its sexual assault prevention and reporting curriculum to employ affective engagement techniques at four technical training campuses. Curriculum developers employed plausible vignettes, storytelling, and classroom debate to create an emotional connection to the sexual assault prevention and reporting lessons. The objective of the revised curriculum was to change the organizational culture to one of dignity and respect. The purpose of this research is to answer the following questions: Does increasing the affective engagement of SAPR curriculum influence organizational culture on Air Force technical training campuses? The research relies on secondary analysis of two student surveys developed by the Air Force to measure changes in organizational culture. This study analyzes end-of-course survey data collected from 363 students receiving the original curriculum and 338 students receiving the revised curriculum in independent groups. Training-climate survey data is analyzed as a time-series, illustrating perceptions

of 3,378 students where the curriculum did not change and 6,698 students surveyed at locations where the curriculum did change. The research measures changes in organizational culture by evaluating trends in student perceptions of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationships. Additionally, end-of-course survey data compares beliefs about consequences, perceived norms, and control factor behaviors. The time-series data showed no significant improvement in the experimental groups over the control groups that coincided with the change in curriculum. To the contrary, organizational tolerance of sexual assault, sexual harassment, and unprofessional relationships improved in the control groups over the time-period of the study. However, experimental groups did not show any discernable improvement. Revising only the curriculum, as done in this study, did not correspond to a change in the organizational culture within the technical training environment. Future research should consider changing the delivery timing and venue of training to complement the curriculum.

ACKNOWLEDGMENTS

Special thanks go to my committee chair, Dr. H. Quincy Brown, and my other committee members, Dr. Cyndi H. Gaudet, Dr. Heather M. Annulis, and Dr. Dale L. Lunsford for their unwavering guidance and enthusiastic support. I would also like to recognize Major General Marc Anthony Brown, USAF for permitting this research. Lastly, I would like to thank Ms. Christine Burnett, Air Education and Training Command Sexual Assault Prevention Officer for her support throughout this project.

DEDICATION

This work is dedicated to my wife and best friend Tammi for standing by my side throughout a long and successful military career as well as many academic pursuits. Her encouragement and unwavering support allowed me to achieve goals that I never thought were possible.

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AETC	Air Education and Training Command
BMT	Basic Military Training
DoD	Department of Defense
SAPR	Sexual Assault Prevention and Response

CHAPTER I - INTRODUCTION

Among the stated objectives in the human capital annex to the U. S. Air Force's strategic master plan is the need to retain ready, resilient Airmen and families (U.S. Air Force, 2015). The negative impact of sexual misconduct on human capital includes lower job satisfaction in the military and increased medical problems for veteran survivors of unwanted sexual contact (Antecol & Cobb-Clark, 2001). One way to work toward this objective is to reduce incidences of sexual assault, sexual harassment, and unprofessional relationships in the military. However, in recent history, the Air Force has not consistently embodied this goal in practice. In his closing remarks to the Air Force's Sexual Assault Prevention and Response (SAPR) Summit, in January 2015, the U.S. Secretary of Defense made the following statement:

> The military has been forthcoming in acknowledging sexual assault is a problem; but, acknowledgment is not a fix. This is a problem that resides in our community; and it will be fixed in our community. Rarely do you fix a problem with a single solution; rather, it's an evolution of small actions. This is personally important to me and to us. (C. T. Hagel, personal communication, January 13, 2015)

The outcome of the 2015 Air Force SAPR Summit was a call for a new approach to teaching sexual assault prevention throughout the Air Force. The director of the Air Force Sexual Assault Prevention Office, Major General G. M. Grosso, recommends a new approach to SAPR training that turns the focus from awareness to action and from identifying negative behaviors the Air Force hopes to extinguish to emphasizing behaviors the Air Force wishes to reinforce. Additionally, several focus groups in the

summit recommend fostering a culture of dignity and respect (G. M. Grosso, personal communication, 2015).

This chapter introduces the research and its significance in protecting human capital from damage by sexual assaults, sexual harassment, and unprofessional relationships in the Air Force. The following sections identify the problem, research question, theoretical framework, purpose, research objectives, and significance of the proposed study. The background begins with a description of the recent history of sexual assault in the Air Force (U.S. Department of Defense, 2013a).

Background

In 2012 the Congressional Digest reported on a Pentagon survey concerning sexual assaults in the military. The survey determined 26,000 troops were sexually assaulted in the period from October 2011 through September 2012, an increase of 40% over the previous 2 years ("Sexual Assault in the Military" 2013). Again in 2013, the U.S. Department of Defense (DoD) reported a 50% increase in sexual assault reports between October 2011 and September 2013. The DoD suggests the increase in reports is a response to increased levels of confidence in the military's reporting systems (U.S. Department of Defense, 2013a).

In 2012, the Air Force's Air Education and Training Command (AETC) was rocked by scandal when the media uncovered a rash of sexual assault, sexual harassment, and inappropriate relationships between staff and trainees in Basic Military Training (BMT; Forsyth, 2012). In response to congressional pressure, the Air Force Chief of Staff appointed Major General Margret Woodward to conduct an investigation into BMT misconduct (AETC, 2012). The investigation resulted in 42 recommendations to change

the culture of BMT with the goal of reducing sexual assault and misconduct (AETC, 2012).

Second Air Force is the echelon of command between AETC and the training wings. In addition to BMT, Second Air Force has operational oversight of technical training at four major training bases; Goodfellow, Keesler, Lackland, and Sheppard Air Force Bases (Mengeling, Booth, Torner, & Sadler, 2014). The Woodward investigation resulted in the Second Air Force commander adapting many of the 42 recommendations Major General Woodward proposed (AETC, 2012). The recommendations for BMT included implementing a random training-climate survey and an end-of-course survey to detect misconduct. The Second Air Force commander directed a similar set of surveys to detect misconduct as well as student-on-student assaults (L. A. Patrick, personal communication, 2013). Training evaluators assigned within each of the six technical training groups administered the training-climate survey. Unit commanders review training-climate survey results and associated comments to assist detection and deterrence efforts.

At the same time, Major General Woodward's investigation was underway; the DoD Sexual Assault Prevention and Reporting Office directed the branches of the military to provide SAPR training to new recruits (U.S. Department of Defense, 2013b). In response, the Air Force established an Integrated Product Team to review the SAPR curriculum for pre-command enlisted training. The recommendation was not to use a standardized curriculum, but instead allow each initial skills training site to develop curriculum based on varying training times and differing student demographics (U.S. Department of Defense, 2013a). AETC conducted this training in two phases. The

command integrated the first phase into BMT and provided the second phase when students arrive at their first technical school.

In light of the issues uncovered in BMT, the Second Air Force commander established a working group to conduct a similar review of the technical training climate (Clark, Foltz, & Williams, 2013). The working group produced an internal report that revealed student-on-student sexual assault and harassment was a more pressing issue than faculty-on-student sexual misconduct at Air Force technical training locations (Clark et al., 2013). Based on recommendations in the Student-on-Student Sexual Assault Working Group report (Clark et al., 2013), the Second Air Force commander directed SAPR offices to discuss real-world scenarios in addition to the second phase of awareness training (L. A. Patrick, personal communication, 2012). In August 2012, additional scenarios were developed and implemented to meet the commanders' desire to take action to deter sexual assaults. In October 2014, the Second Air Force commander directed a review of the second phase of sexual assault prevention and reporting training (M. A. Brown, personal communication, 2014).

In January 2015, the Air Force Sexual Assault Prevention and Reporting Office hosted the first-ever SAPR Summit to address sexual assault prevention strategies (Secretary of the Air Force Public Affairs Command Information, 2015). Experts in sexual assault prevention spoke on diverse topics related to sexual assault prevention; including, coaching, mentoring, marketing, alcohol involvement, bystander intervention, and obtaining consent. Focus groups of attendees at the summit presented recommendations to change the approach to sexual assault prevention training.

The predominant theme of the SAPR summit was the need to move beyond awareness training. Participants recommended changing attitudes, upholding values and developing character among Air Force members (Secretary of the Air Force Public Affairs Command Information, 2015). The recommendations of the focus groups align with change leadership recommendations, suggesting lasting change is not possible unless the desired behaviors are cemented in the cultural norms and values of the organization (Kotter, 2011). One method of addressing beliefs, values, and cultural norms is through engagement (Jackson, Power, Sherwood, & Geia, 2013). Engagement includes cognitive, behavioral and emotional components (Hoad, Deed, & Lugg, 2013). Emotional engagement refers to how the students react to the instructor, peers, curriculum, and the environment in the affective domain. Reactions can include the full range of feelings including happiness, sadness, anxiety, ennui, or anger and create an emotional connection to the subject at hand (Hoad et al., 2013).

Problem Statement

The U.S. Air Force proclaims an organizational culture that promotes and protects individual dignity and mutual respect among its members (Wright, 2014). However, sexual assaults harm that culture and lead to higher medical costs, diminished readiness, and lower retention. This is why sexual assault prevention and reporting (SAPR) education receives significant attention from senior leaders (Hagel, 2015). Failure of SAPR education programs to foster a culture of dignity and respect has the potential to negatively affect human capital of the U.S. Air Force.

Sexual misconduct in the military contributes to higher medical costs, diminished readiness, and lower retention (Byrnes, Doran, & Shakeshaft, 2012; Clark et al., 2013;

Firestone & Harris, 2008; U.S. Department of Defense, 2011). U.S. Air Force leaders stress the goal of preserving human capital by creating an organizational climate of dignity and respect (Secretary of the Air Force Public Affairs Command Information, 2015; U.S. Air Force, 2015). To achieve a climate of dignity and respect, the Secretary of the Air Force identified sexual assault reduction as a primary concern during an address to the SAPR Summit (D. L. James, personal communication, 2015). In 2012, the Congressional Digest reported on a Pentagon survey concerning sexual assaults in the military. The survey determined 26,000 troops were sexually assaulted in the period from October 2011 through September 2012, an increase of 40% over the previous 2 years ("Sexual Assault in the Military," 2013). Again, in 2013, the DoD reported a 50% increase in sexual assault reports between October 2011 and September 2013. The DoD suggests the increase in reports is a response to increased levels of confidence in the military's reporting systems (U.S. Department of Defense, 2013c).

The long-term costs of sexual violence in the military extend to taxpayers as higher health care costs through the Veterans Administration (Turchik, Pavao, Hyun, Mark, & Kimerling, 2012). In 2009, the Veterans' Health Administration reported almost 590,000 outpatient visits related to military sexual trauma. Furthermore, veterans reporting military sexual trauma used significantly more healthcare services than those that did not report military sexual trauma. The data links sexual harassment and military sexual trauma to higher rates of treatable conditions including posttraumatic stress disorder for military members and veterans. Turchik et al. (2012) confirm rape survivors are more likely to experience posttraumatic stress disorder than victims of other trauma in both veteran and nonveteran populations. The National Center for Injury Prevention and

Control (2014) confirm the link between sexual violence and long-term physical health complications. The research correlates headaches, digestive issues, chronic pain, and sexually transmitted diseases to sexual violence. Victims of sexual violence are more likely to engage in risky behaviors such as drug and alcohol abuse (Kalmakis, 2010). The emotional toll of sexual violence can leave victims fearful, anxious, stressed, and depressed; and may lead to eating disorders and even suicide (National Center for Injury Prevention and Control, 2014). Despite efforts to change the organizational culture associated with a mixed gender military force, sexual misconduct among students attending technical training courses continues (Clark et al., 2013). Sexual assaults will likely continue to negatively affect military readiness in the Air Force unless a cultural change occurs within its ranks.

Purpose Statement

Enhancing the SAPR curriculum by applying the theories of affective engagement and planned behavior may lead to measurable changes in the organizational culture. This study determines the efficacy of employing affective engagement training to change organizational culture. In particular, it assesses how increasing affective engagement of SAPR training influences a change in the culture of preventing and reporting sexual assaults on Air Force campuses.

The goal of the research is to assess the impact of adding interactive scenarios to illustrate social norms and enhance affective engagement of SAPR training. Affective engagement creates an emotional connection to SAPR topics that may influence individual attitudes, values, and beliefs of cultural norms. This research assesses how changing SAPR curriculum training changes the organizational culture among students

pertaining to sexual assault, sexual harassment, and unprofessional relationship behaviors and thereby influencing organizational culture. This research tests the efficacy of employing affective engagement techniques to influence a culture of dignity and respect on Air Force technical training campuses.

Research Objectives

To measure how changing SAPR curriculum influences organizational culture, the research implements quasi-experimental tests applied to archival data collected by the Air Force. The data collected pertains only to Air force, initial-skills students attending the first technical training courses following BMT. The demographics of personnel in this cohort are 18-26 year-old Airmen in their first enlistment (Air Force Personnel Center, n.d.). The research compares the students' reaction to the revised training to that of the previous format. Additionally, the research measures changes in the organizational culture by trending student perceptions of the training climate. Data from the training-climate survey identifies changes in students' perception of tolerance of sexual assault, sexual harassment, and unprofessional relationships. Finally, the research identifies trends in the data collected over time to determine if changes in student perceptions correspond to the timeframe of the SAPR curriculum changes.

RO1 — Determine whether students' reactions to the revised SAPR curriculum showed significant improvement over the previous format of training.

RO2 — Describe how students' perceptions of organizational tolerance of sexual assault vary over time.

RO3 — Describe how students' perceptions of organizational tolerance of sexual harassment vary over time.

RO4 — Describe how students' perceptions of organizational tolerance of behaviors associated with unprofessional relationships vary over time.

RO5 — Determine the differences in students' perception of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationship behaviors corresponding to the timeframe the SAPR curriculum format changed.

Theoretical Framework

This research tests a combination of theories applied to the problem of reducing sexual assaults in the military to change the organizational culture. The culture within an organization includes basic assumptions and beliefs underpinning its core identity (Holton & Swanson, 2009). The attitudes, values, and beliefs that make up the organizational culture reside in the affective domain of learning. Krathwohl, Bloom, and Masia's (1999) taxonomy of the affective domain suggests education and training can target the affective domain, and the outcomes can be measured.

The Air Force is tasked with changing its organizational culture to one of dignity and respect (Garamone, 2013). The key to fostering a culture of dignity and respect is an emphasis on prosocial intervention behaviors that are contrary to assaulting and harassing attitudes in the culture (Burn, 2009). Extinguishing attitudes that promote unprofessional relationships is an important element of creating an organizational culture of dignity and respect in the military (U.S. Air Force, 1999).

Fishbein and Ajzen (2010) propose the theory of planned behavior. This theory postulates beliefs about consequences, perceived norms, and control factors guide behavior. The theory of planned behavior provides the basis for measuring reaction to the SAPR training intervention. Students' reaction to the training is measured through

perceptions of social norms, consequences of actions and prevalence of internal and external controls. Comparing the reaction data from planned behavior surveys to the application data from the training-climate survey helps to isolate effects of unplanned influences.

The affective domain of learning is the realm of attitudes, beliefs, values, and perceptions (Krathwohl et al., 1999). Developing a curriculum that targets the affective domain is a matter of presenting stimuli that initiate affective behaviors. Responses to affective learning manifest itself in a continuum from attending, responding, valuing, and organizing, to characterization. As students modify attitudes, beliefs, and perceptions, behaviors consistent with the new beliefs emerge.

Engaging the affective domain is possible through activities that appeal to students at an emotional level. Affective activities include narrative stories, lively debate, and realistic scenarios (Bae, Lee, & Bae, 2014; Jagger, 2013). Measurable changes in attitudes and values toward a subject may be achieved through videos in instructor facilitated lessons (Tatar, Akpınar, & Feyzioğlu, 2013). Narrative entertainment can influence prosocial behaviors (Bae et al., 2014). Figure 1 illustrates the theoretical framework for the research.

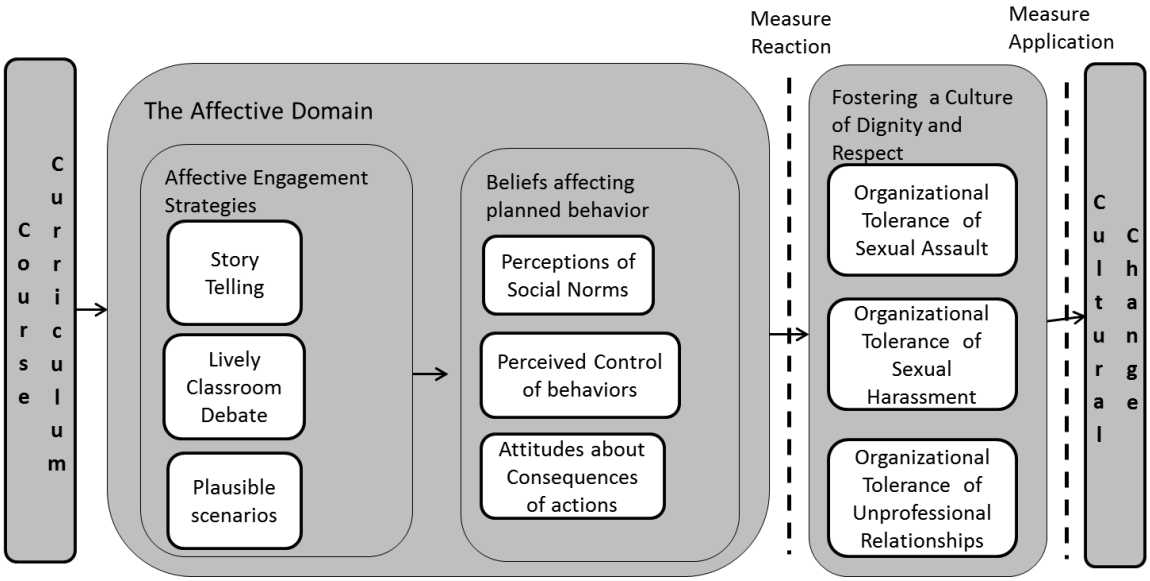

Figure 1. Theoretical framework.

The theoretical framework shows the relationship of theories of affective engagement and planned behavior to the desired outcome of cultural change.

Significance of the Study

The DoD (2013a) identifies sexual assaults and harassment as a drain on resources in both monetary and human costs. Furthermore sexual assault and harassment negatively impact the ability of the military to accomplish its missions (U.S. Department of Defense, 2014b) A 1995 survey of active-duty personnel uncovered that more than half of women reporting sexual harassment within the previous year state they would separate from military service if given the option (Antecol & Cobb-Clark, 2001). This propensity of victims to leave the military, among other reasons, is why Mengeling et al. (2014) identified sexual assault and harassment prevention as a readiness concern for the DoD.

Sexual assault and sexual harassment are not just problems in the military, they are health problems throughout the United States (Potter & Stapleton, 2012). On college

campuses, 20% of undergraduate women surveyed self-reported as victims of some type of sexual assault by the senior year (Krebs, Lindquist, Warner, Fisher, & Martin, 2009). This problem gained federal government attention when the U.S. Department of Education (2014) identified 55 colleges and universities suspected of violating federal law relating to their handling of sexual assault and sexual harassment allegations. College administrators could no longer view sexual violence as a problem for civil authorities because, under Title IX, schools not in compliance with federal guidelines could lose federal funding (U.S. Department of Education, 2014).

This study examines a population similar to a college campus. Both traditional college student and U.S. Air Force non-prior service student populations tend to be 18- to 26-years old and belong to a culture with social norms supporting hypermasculinity (Potter & Stapleton, 2012). Therefore, it is reasonable to conclude strategies employed effectively on military campuses could have similar results on college campuses. In his closing remarks to the Air Force SAPR Summit, the Secretary of Defense ended with "Our nation's colleges and universities are looking to us for a solution" (C. T. Hagel, personal communication, 2015).

Delimitations

The population available for the study delimits the research. All subjects of the study are Air Force enlisted members attending training immediately after completing BMT. The members of this cohort share a similar experience in BMT and receive similar initial training in SAPR, sexual harassment, unprofessional relationships, and hazing. Shared experiences and training provide a homogeneous cohort preconditioned to receiving training on similar subjects.

Limitations

It is not feasible to sample all training locations since Air Force students attend training at over 100 locations throughout the United States (U.S. Air Force, 2014b). The logistics of including all Air Force students eligible to receive SAPR training would have extended the time and cost of the study for little added benefit (Phillips, Phillips, & Aaron, 2013). Therefore, the researcher limits the study to Air Force non-prior service students attending technical training at Lackland, Goodfellow, Keesler, Sheppard, and Vandenberg Air Force bases. These bases have training infrastructure and SAPR resources to conduct training and assess results. Students attending training at smaller, geographically separated units are not included in this study. Prior service, officer, and flying training students were not included in the sample population. Expanding the research to include students at smaller training units, and those attending flying training courses could be the next step for future study.

Operationalized Definitions

Because this study is undertaken in a military environment, it is prudent to explain terms that have specific connotations unique to military culture and justice. Sexual assault is a criminal act under both military and civilian law, but the Joint Service Committee on Military Justice (2012) greatly expanded its definition for military courts-martial. Infractions like unprofessional relationships and sexual harassment, which have no civilian penalty, may be punished under the Uniform Code for Military Justice.

1. *Unprofessional relationships* are those in which one member has positional authority over the other. The inherent imbalance of power that exists in unprofessional relationships creates the appearance of misuse of office,

misuse of position, favoritism, or the abandonment of organizational goals for personal gain (U.S. Air Force, 1999).

2. *Sexual Assault* is unwanted contact of a sexual nature including, rape, aggravated sexual contact and abusive sexual contact (Joint Service Committee on Military Justice, 2012).
3. *Sexual harassment* is nonphysical maltreatment of a sexual nature (Joint Service Committee on Military Justice, 2012). The Manual for Courts-Martial gives examples of sexual harassment including repeated and deliberate sexual comments, as well as threatening another person's career, pay or job in exchange for sexual favors (Joint Service Committee on Military Justice, 2012).
4. *Sexual Assault Prevention and Reporting (SAPR)* is a DoD (2013c) program focused on providing necessary and appropriate support to victims of sexual assault. The goal of SAPR programs is to return service members, who are victims, to a fully capable role. In addition to victim support, the U.S. Department of Defense (2013b) tasked each branch of service to provide extensive and continuing SAPR training for all personnel.

Chapter Summary

The research project examines the effects of revising a portion of the SAPR curriculum provided to Air Force initial-skills students on military technical training campuses. The current curriculum was revised to leverage affective engagement to affect planned behaviors. The revised curriculum employs video scenarios to engage the students in lively facilitated discussions on SAPR topics. The outcomes are assessed by

examining archival data to determine if affective engagement practices impact attitudes and values toward sexual assault, sexual harassment, and unprofessional relationships.

Student reaction data measuring planned behaviors represent the effectiveness of training. Training-climate survey measures perceptions of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationships. Together, these measures determine if revising SAPR training to increase affective engagement impacts attitudes and perceptions about sexual assault, harassment, and unprofessional relationships. Archival data collected prior to implementation is compared to results of the revised curriculum. Changes in the perceived organizational tolerance for sexual assault and sexual harassment among Air Force enlisted students is the determinate factor in assessing the efficacy of SAPR training employing affective engagement techniques.

CHAPTER II - REVIEW OF RELATED LITERATURE

This chapter summarizes the ideas and concepts expressed in the current literature related to changing organizational culture by applying affective engagement techniques to sexual assault prevention training. This chapter describes interrelated topics including targeting the affective domain to impact organizational culture and the impact of organizational culture on training needs. The review of literature illustrates how applying affective engagement strategies can change beliefs that affect behavior, and what to expect when using training to affect cultural change associated with sexual misconduct.

The literature shows a connection between organizational culture, the affective domain of learning, and its relationship to human capital development. Organizational cultures can be changed through training intervention and thereby impact member performance (Watkins & Leigh, 2010). Krathwohl et al. (1999) suggests training can lead to a measurable change when the affective domain is targeted. Furthermore, employing engaging training methods enhances the probability of impacting change in the affective domain (Thompson & Haddock, 2012). Becker (1983) demonstrates improving employee health and good habits positively impact investments in human capital. Investing in values education to reduce sexual misconduct is an investment in employee health; therefore, an investment in human capital. However, changing the culture of an organization requires leadership, accurate measurement and a strategic approach to the process (Watkins & Leigh, 2010).

Relating Organizational Culture to the Affective Domain

The literature describes the theories and research aligning human capital with strategies targeting the affective domain, thereby influencing organizational culture.

Present literature addresses the difficulties of training and measuring training in the affective domain and its relationship to organizational culture. Although, targeting the affective domain may be problematic because it is not well defined and difficult to measure (Miller, 2010). Of the three domains of learning, cognitive, psychomotor and affective; the affective domain is the most difficult to isolate since the affective domain cannot be completely isolated from the cognitive domain (Krathwohl et al., 1999).

The literature defines the link between the affective domain, organizational culture, and human capital. Holton and Swanson (2009) assert the attitudes, values, and beliefs that make up the organizational culture are not held by an individual; rather, they are the product of shared experiences of a group. Often these attitudes, values, and beliefs in an organization are not visible on the surface (Watkins & Leigh, 2010). Never the less, Becker (2008) ties the affective domain to human capital. He asserts because people cannot separate from their individual values, investments made to affect values equate to investments in human capital. Essentially, the attitudes and values a workforce adhere to, are human capital.

The literature describes deliberately changing an organization's culture through affective approaches. Watkins and Leigh (2010) discuss organizational behavior as comprised of commonly held beliefs. They postulate the values, beliefs, and cultural norms of the group need to change to affect a change in a group's behavior. Values, beliefs, and norms make up the culture of an organization. To change an organization's culture, leaders must persuade the members of the organization to adopt desired attitudes. Van 't Riet, Ruiter, Werrij, Candel, and de Vries, (2010) cite Aristotle in describing the art of persuasion as occurring through three pathways: (a) logical argument, (b) moral

character, and (c) appealing to the emotion of the listener. While the logical argument appeals to the member's cognitive domain, the moral character and emotional appeals to the affective domain. They assert successful campaigns to change culture should engage the audience using logical argument, moral character, and emotional appeal.

The Impact of Organizational Culture on Training Needs

The link between culture, learning and human capital in organizations is well defined (Tabaghdehi, Leila, & Salehi, 2015). The literature describes the predictive values of components of organizational culture including learning, trust, teamwork, and involvement have on developing human capital. The research suggests the organizational culture toward learning is the strongest predictor of human capital (Tabaghdehi et al., 2015).

The literature describes changing organizational cultures. Watkins and Leigh (2010) suggest the culture of an organization has a significant impact on the organization's overall effectiveness. They assert organizations with agile and adaptive cultures are more likely to have success in a rapidly changing business. However, they acknowledge creating an adaptive culture is not easy. Changing a culture requires changing the underlying beliefs and values of an organization. In the context of human capital development, the overall goal of changing an organization's culture is to modify behaviors and thereby improve performance. Fomenting change requires significant and sustained leadership (Garvin & Roberto, 2011). It is, therefore, necessary that those implementing the change have faith in the leaders. Leadership needs to anchor the change until the desired traits are ingrained in shared values and social norms of the

organization (Kotter, 2011). In total, the literature shows the culture of an organization has a direct impact on the value of its human capital.

Culture in Organizations

Organizational values are an extension of individual attitudes, values, and beliefs. In organizations, Watkins and Leigh (2010) suggest the culture is determined by shared beliefs, values and social norms of a group. Some aspects of organizational culture, like artifacts and espoused values, are observable. These social norms in organizational culture are described as *the way we do business* (Van Tiem, Moseley, & Dessinger, 2012). However, the *real* culture of the organization is often unwritten, although it is understood; instead, it is discussed informally among coworkers (Van Tiem et al., 2012). These are the values Watkins and Leigh (2010) describe as the unconscious values of the organization. They assert that the cultures of high-performing organizations align the values, vision, goals, and strategies to their mission. However, this alignment of culture and mission requires investment to keep restraining, and performance-degrading cultures at bay.

Measuring Attitudes and Values

The literature shows culture in organizations is composed of individuals' values and beliefs, and that individual attitudes and beliefs are measurable. Attitudes may be measured by assessing an individual's judgment of values (Likert, 1932). Krathwohl et al. (1999) postulates a person's attitudes, values and beliefs link to their learning. He compiled a taxonomy of the affective domain identifying successive levels of values attainment. Along with codifying the continuum of affective learning, Krathwohl et al. (1999) proposes measurements for each level.

Observing Outcomes in the Affective Domain. Krathwohl et al. (1999) asserts that although impossible to directly observe higher levels of learning in the affective domain, any more than to observe it in the cognitive domain; the affective domain may be measured through observing behaviors. Leveraging the relationship between the affective and cognitive domains provides a suitable means of measuring the lower levels of the affective taxonomy. All cognitive learning includes a component of attitudes, values, and beliefs. Conversely, Krathwohl et al. (1999) suggests affective learning objectives include cognitive components. Therefore, at lower levels of the taxonomy, the measurement devices can resemble tests used to measure the cognitive domain.

The taxonomy of the affective domain is not unlike the taxonomies of the cognitive and psychomotor domains described by Bloom, Krathwohl, and Masia (1984); all are expressed as a continuum of learning. Krathwohl et al. (1999), describe the levels of the affective continuum. At its lowest level, the affective domain one receives stimuli. An example of a lesson at this level might include attending a lecture or watching a video describing an issue that may possibly lead to a change in values. The next level in the continuum of affective learning is responding to affective stimuli. Activities might include participating in a discussion or writing a reflection paper on a subject. The third level of the affective continuum, valuing, includes identifying a preference or declaring one's convictions. A lesson at the valuing level might include ranking values from least preferred to most preferred or explaining one's reasons for believing in one method over another. The fourth level of the affective continuum is organizing. At this level, the individual structures interrelated values into a value system that prioritizes those that are most important to a personal system of beliefs. A lesson at

the organizing level may include debating the relative importance of conflicting goals or ideologies. The fifth and highest level of the affective continuum is characterization. At this level, the individual further distils prioritized beliefs into a coherent system of beliefs. Developing one's conscience to arrive at a consistent philosophy of life, exemplifies characterization. A lesson at this level may include a paper describing one's personal philosophy, or observing a subject's behavior over time. Krathwohl et al.'s (1999) taxonomy of the affective domain shows that it may be measured as surely as the cognitive and psychomotor domains.

An effective learning objective at the *receiving* level may read "Demonstrates a willingness to be of service to the group of which he is a member" (Krathwohl et al., 1999, p. 69). Krathwohl et al. (1999) assert this action addresses intention as opposed to completed actions and could be measured with a written measurement item. An example of a test item used to measure this affective objective would be; do you wish you had more time to devote to working for your group? If the student answers yes, the evaluator can assume the student has a willingness to receive. This example demonstrates the ability to measure the learning in the affective domain at the lowest level of the taxonomy. The above examples demonstrate effective measurements at all levels of the affective domain.

Operationalizing Measurements. Affective measurements should align with the business goals and course objectives. Vance (2010) recommends measuring learning outcomes as a business would measure business outcomes. This requires continuous monitoring of key indicators on a regular basis. In terms of the affective domain, continuous monitoring would focus on assessing the culture of an organization. Van

Tiem et al. (2012) recommends using a culture audit to measure how the organization thinks and acts; in other words, measuring the cultural norms. A cultural audit focuses on the individuals and the key processes they perform. This is the same concept referred to as cultural surveys by Holton and Swanson (2009). Regardless of terminology, the literature recommends researchers tie continual measurement of the prevailing culture, attitudes, and perceptions of behavior to operational goals of the organization. This is a reasonable assessment since attitudes, perceptions, and beliefs are the building blocks of intent, which in-turn predicts behavior (Wolff, Nordin, Brun, Berglund, & Kvale, 2011).

Attitude is a proclivity to act in a certain way (Likert, 1932). Fishbein and Ajzen (2010) describe the attitude-behavior relationship when comparing stated intentions to behaviors. The theory of planned behavior states behavior is steered by three factors. These factors include the individual's beliefs about behavior, beliefs about social norms, and beliefs about behavioral controls. In a later meta-analysis, Ajzen (2011) describes the correlation between these factors. Ajzen reports the correlation between intention and behavior moderated by the individual's control beliefs. In other words, intended behavior is a moderate to good predictor of actual behavior, when the individual believed the outcome was within their control. Intention more accurately predicts future behavior than either one's willingness to act or past behaviors. Wolff et al. (2011) identify a direct measure of attitude as the strongest predictor of behavior. They recommend broadening the theory of planned behavior measured to include expectations of affective outcomes. Therefore, measuring affective outcomes is similar to measuring organizational performance.

Many human performance models exist and researchers may rely on a combination of approaches for a given situation (Watkins & Leigh, 2010). Krathwohl et al. (1999) assert the affective domain as difficult to measure directly, though it may be measured by leveraging the overlap with the cognitive domain at lower levels. Kirkpatrick and Kirkpatrick (2006), recommend measuring training and organizational performance in four levels (a) reaction, (b) learning, (c) behavior, and (d) results as appropriate for the process being evaluated. In this model, level one is the students' reactions to the training, level two is the student's knowledge of the subject trained and level three is the impact the training had on student behavior, and level four is the impact the training has had on the organization. Phillips and Phillips (2012) added a fifth level; that is the return on investment for the cost of the training. In both models, the goal of measuring organizational performance is to determine if training is effective and efficient.

The literature suggests a hybrid approach to measurement may provide a mechanism for measuring organizational cultures in the affective domain. Phillips and Phillips (2012) multilevel approach to measuring organizational behavior could be combined with Fishbein and Ajzen's (2010) theory of planned behavior approach to measuring attitudes, beliefs, and intentions. This approach aligns with Van Tiem et al. (2012) description of using cultural audits to measure organizational performance.

Changing Organizational Culture through Affective Engagement

The literature describes organizations as having distinct and malleable cultures. Watkins and Leigh (2010) assert organizations have shared attitudes and values among their members. These elements comprise the corporate culture of the organization.

Furthermore, they suggest effective organizations have cultures that are adaptive, flexible and aligned to their mission, vision, goals and strategies. Kotter (2011) suggests when an organization's mission and strategic goals change, the leadership should take action to align behaviors and attitudes with the new strategies. This action should focus on changing social norms and shared values of the organization. To achieve lasting change, leaders need to find effective methods to impact the attitudes and values and produce a measurable change in human capital within the organization.

Engagement Theory and the Affective Domain

Jagger (2013) suggests the affective domain be stimulated to achieve ethical and moral development. Furthermore, trainers may affect attitudes and values by employing affective engagement techniques. Students assimilate new concepts more effectively when they are actively engaged in a significant educational experience (Hinchliffe, 2011). Zhao and Kuh (2004) recommend trainers engage students in actively constructing knowledge with their fellow learners to achieve affective engagement. This constructivist approach relies on social interaction to create learning experiences by assimilating knowledge with their peers. Affective engagement is manifest by students' interactions with their peers in the context of feelings, actions, and thoughts (Corso, Bundick, Quaglia, & Haywood, 2013).

Jagger's (2013) research into the emotional component of engagement shows the effectiveness of heightening affective engagement through lively debate. Requiring students to defend a side of an argument that they may not agree with may cause some cognitive dissonance, but at the same time, it causes them to cement their own beliefs. The process of engaging in a debate forces participants into an active learning role as

opposed to passive learning. This activity pushes the student further along the continuum of affective learning. Participants in debates move beyond merely attending and responding, to organizing their own feelings and behaviors into belief structure (Krathwohl et al., 1999).

Engagement Theory and Human Capital Development

The literature illustrates a pathway in which, emotions engaged through lively debate affect individual attitudes and values; which, in turn, reflect in an organization's culture, therefore its human capital. Watkins and Leigh (2010) asserted that an organization's values, norms, and beliefs affect individual behavior. Furthermore, an organization's culture positively affects its human capital (Tabaghdehi et al., 2015). Conversely, less adaptive and restraining cultures degraded organizational performance (Watkins & Leigh, 2010).

Applying Engagement to Sexual Assault Prevention

Exner and Cummings (2011) described the need for students to connect with victims of sexual assault on an emotional level; even if they did not personally know a victim. Their research showed individuals who felt a connection with victims of sexual assault were more likely to recognize the problem and act to intervene. Implying individual actions are required to protect individual victims. This is supported by Corso et al. (2013) who assert classroom interactions and engagement occur across the cognitive, psychomotor and affective domains. Furthermore, the engagement of feelings is essential to building a sense of connectedness among students.

The literature suggests there is an optimum effective dosage when it comes to changing attitudes toward sexual assault prevention. Anderson and Whiston (2005)

conducted a meta-analysis of prevention education programs found that 1-hour, single session programs had no lasting impact. Longer or repeated exposures were more effective in changing attitudes. This recommendation for more frequent training was echoed by Garrity (2011). However, more and longer exposures may have a detrimental effect; as some military members are experiencing SAPR fatigue (Meineke, 2014). This effect is felt on college campuses as freshmen are overloaded with messages on preventing assault (Desanctis, 2016). Group size is also linked to affective outcomes. Although most SAPR training in the Air Force is conducted by peer presenters in small groups of 15-25 persons (Gedney, Wood, Lundahl, & Butters, 2015). The Air Force students in technical training receive SAPR training from professionally trained presenters in mass briefings (AETC, 2016) which may exceed 100 students. Larger class sizes reduce the affective impact of training (Beattie & Thiele, 2016).

The Impact of Sexual Misconduct on Organizational Culture in the Military

Organizations of all types bear the impact of sexual misconduct. However, Holland, Rabelo, and Cortina (2014) point out the military is particularly plagued by sexual misconduct; including sexual harassment, and sexual assault. Sexual misconduct and violence against women influence the social fabric of the military organizations. Their research suggests sexual misconduct affects the entire military culture.

Impact of Sexual Harassment on Military Culture

The DoD (2014a) identified sexual harassment as an increment in a progression of hostile culture that permits further, more egregious sexual misconduct. This *continuum of harm* is an important concept in understanding the interaction of organizational culture and sexual assault. Simply stated, the continuum of harm theory states, an organization

that tolerates mild sexual harassment is more likely to encounter incidences of violent sexual assault.

The literature identifies a link between bullying behaviors and sexual harassment and sexual violence (DeGue et al., 2012; Miller et al., 2013). The link between behaviors is clear enough that the Navy (U.S. Department of Defense, 2013a) proposed to prevent serious crimes along the continuum of harm by addressing milder forms of misconduct. Interventions that address only one behavior are likely to be ineffective since sexual misconduct occurs along a continuum of behaviors. The Navy's approach to preventing sexual assault by focusing on behaviors including sexual harassment, bullying, hazing, and fraternization is consistent with prevailing research. In fact, a longitudinal study identified bullying as a predictor of sexual violence (Miller et al., 2013). In its Annual Report on Sexual Assault, the U.S. DoD (2013a) recommend organizations implement prevention strategies that address the entire continuum of harm. The U.S. DoD (2014a) reported 58% of women and 48% of men who were assaulted, were sexually harassed or stalked prior to the incident. The research shows organizations cannot effectively address sexual assault without addressing sexual harassment and other milder forms of sexual misconduct.

Defining Sexual Harassment. The U.S. Equal Employment Opportunity Commission (n.d.-a) website describes sexual harassment as "harassment because of a person's sex. This includes unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature." Unlawful harassment creates a hostile work environment that is either intimidating or offensive. In the military, sexual harassment is characterized as cruelty and maltreatment in the Manual for Courts-Martial

(Joint Service Committee on Military Justice, 2012). The AETC (2015a) policy adds unwanted sexual advances and requests for sexual favors to the manual's definition. AETC included gestures and comments that are deliberate or repeated to the definition of sexual harassment.

The Impact of Sexual Harassment on Human Capital. Sexual harassment and bullying are antecedent behaviors of sexual assault (U.S. Department of Defense, 2014a). Antecol and Cobb-Clark (2001) cite a 1994-1995 survey in which over 70% of women and 35% of men reported being sexually harassed within the previous year. The DoD (2014a) identifies a range of inappropriate behaviors including sexual harassment, hazing, and bullying, that contribute to a culture of unwanted sexual contact and sexual violence.

In addition to the previously identified link between sexual harassment and sexual assault, research shows the negative impact of sexual harassment on its own. The literature suggests organizations lose tangible and intangible capital due to sexual harassment. Antecol and Cobb-Clark (2001) cite the U.S. Merit Systems Protection Board estimate asserting sexual harassment cost federal government agencies $237 million between 1992 and 1994. Furthermore, the U.S. Equal Employment Opportunity Commission (n.d.-b) website reported $35 million in benefits awarded through their office in 2013 to settle sexual harassment claims, excluding amounts awarded through litigation. Sexual harassment detracts from organizational effectiveness through lower retention and job satisfaction (Antecol & Cobb-Clark, 2001).

Investments to improve organizational climate pay human capital dividends in the areas of employee job satisfaction, employee retention and productivity (I. M. Wang,

Shieh, & Wang, 2008). Hershcovis and Barling (2010) identified correlations between job satisfaction and reductions in sexual harassment. Their work compared rates for workplace aggression and sexual harassment to stressors affecting job satisfaction and employee engagement. Their results showed statistically significant relationships between sexual harassment and employee commitment, well-being, job stress, work withdrawal and intent to turnover. Furthermore, they suggest that milder forms of maltreatment, they termed *incivility* may actually be hidden forms of sexual harassment when the organizational culture is male dominated. Their work suggests incivility may be linked to hypermasculinity in the workplace. From a training perspective, sexual harassment creates a hostile learning environment that infringes on students' rights (Weizel, 2012).

Impact of Sexual Assault on Military Culture

The literature shows a link between hypermasculinity, alcohol use and sexual assault (Corprew, Matthews, & Mitchell, 2014; Kalmakis, 2010). The research suggests these traits of organizational cultures, common among military organizations and college campuses, may facilitate sexual assault (Potter & Stapleton, 2012). These organizations may foster a culture that unwittingly promotes sexual assaults.

Impact of Hypermasculinity on Culture. Corprew et al. (2014) research identified four key characteristics of hypermasculinity. They list dominance, aggression, anti-feminine attitudes, and devaluation of emotion as identifying traits of hypermasculine behavior. Furthermore, their research links a propensity to violent behavior and misogyny to hypermasculine attitudes. Hypermasculinity is a cultural norm on both military and college campuses (Potter & Stapleton, 2012). Cultural norms at both venues

may be influenced by the popularity of *gangsta* rap music which blends hyperbolic masculine attitudes with misogynistic lyrics that extol violent behaviors (Oware, 2011).

Associating Alcohol use with Sexual Assault. In addition to hypermasculinity, research shows attitudes toward alcohol and sex are strongly associated with sexual violence both on military and college campuses (Potter & Stapleton, 2012). Excessive alcohol use is linked to sexual assault (Greene & Navarro, 1998). The DoD (2014a) reported alcohol was the *weapon of choice* for facilitating sexual assault. Of victims of sexual violence in 2012, 47% of females and 19% of males reported either they or the offender had been drinking before the assault. Kalmakis (2010) builds on Green and Navarro's work, identifying alcohol abuse as a predictor of sexual violence. Among other effects, alcohol causes women to miss cues pointing to increased risk of sexual assault.

The relationship between alcohol use and sexual assault is not limited to women. A British study of pub patrons conducted by Flowe, Stewart, Sleath, and Palmer (2011), showed alcohol's effect on men's proclivity toward sexual violence. Their research generalized Steele and Joseph's (1990) alcohol myopia theory to a public setting. This theory posits that as blood alcohol concentrations increase, cognitive abilities diminish, and the drinker relies on simpler cues and is more likely to focus on the part of the message they want to hear. Flowe et al. (2011) determined men in the pub study misidentified verbal or behavioral sexual consent cues more frequently as their blood alcohol concentration increased. Instead, drawing context from how revealing the woman's clothing was. Furthermore, male pub patrons were more likely to report a greater willingness to engage in non-consensual sex, as their blood alcohol concentrations

increased. This trend was identified in Abbey's (2002) research into alcohol-related sexual assaults on college campuses. Abbey's research revealed when men were drinking, they were more likely to think woman's behavior was demonstrating sexual interest. Men reported being more at ease with using force to get sex after drinking alcohol.

Mengeling et al. (2014) identified alcohol use as a trend in the military. Their survey of 205 sexual assault victims on active duty in the National Guard or Reserves reported alcohol or drug use by 40% of victims and 54% of perpetrators, prior to the assault. They suggest alcohol use may deter victims from reporting sexual assault because in many cases it may be considered collateral misconduct on behalf of the victim.

The literature shows the prevailing culture of the military and college campuses place their members at increased risk of sexual violence. It suggests the combined norms of hypermasculinity and alcohol abuse contribute to cultures conducive to sexual violence. As the potential for sexual violence increases so does the impact to campus communities and military organizations.

Sexual Misconduct Prevention Challenges in the Air Force

The Air Force's sexual assault prevention strategies focus on awareness and intervention. The USAF facilitator's guide for SAPR training (U.S. Department of Defense, 2011) stressed bystander intervention as the primary prevention methodology. Awareness training concentrated on discussing reporting options and victim resources in addition to exposing the prevalence of sexual assault (U.S. Department of Defense,

2014b). These strategies do not fully embody the direction of the Secretary of Defense to affect cultural change. Chuck Hagel stated,

> We need cultural change where every Service member is treated with dignity and respect, where all allegations of inappropriate behavior are treated with seriousness, where victims' privacy is protected, where bystanders are motivated to intervene, and where offenders know that they will be held accountable by strong and effective systems of justice. (as cited in Wright, 2014, para. 1)

Sexual Misconduct in Military Organizations

Antecol and Cobb-Clark (2001) suggest military organizations are unique in that, young enlisted members live and work on base 24 hours a day. Their professional and personal relationships become intertwined as rank and responsibility follow the members from work to the dormitories. Military members live, work, and play in close proximity with one another, increasing the potential for sexual harassment. Unlike their civilian counterparts, their actions at home or at play may affect their careers.

Impact of Sexual Harassment in the Military. The literature suggests women in the military will likely experience sexual harassment while they are in the service. Avina and O'Donohue (2002) report 64% of women in the military experienced sexual harassment. This number places women in the military at greater risk than female primary care physicians, 52%; and at less risk than female nurses, 88%. However, Burns, Grindlay, Holt, Manski, and Grossman (2014) assert this risk increases during deployments. Their research shows the deployed environment is especially conducive to sexual harassment due to the small numbers of women compared to men, and a male-dominated military culture. Burns et al. (2014) explain how the military ethos of unit

cohesion; generally, a closeness described by brothers in arms can deter members from reporting harassment. Military members are often discouraged from reporting derogatory information about a fellow member (Firestone & Harris, 2008).

Impact of Sexual Assault in the Military. A 2013 RAND study could not determine whether or not sexual assaults occurred more or less often in the military than in civilian settings (Farris, Schell, & Tanielian, 2013). However, the study did determine the demographics of the military population, primarily their age, place them at higher risk of being assaulted. The DoD (2013a) reported 5,061 sexual assaults in fiscal year 2012; a 50% increase over the previous year's results. However, the cost in human terms is more difficult to quantify. The DoD report acknowledges consequences of sexual assault including chronic depression, post-traumatic stress, and drug and alcohol abuse. Kilpatrick, Edmunds, and Seymour (as cited in Farris et al., 2013) reported PTSD occurring among victims of sexual assault at a rate 6.2 times greater than the general population.

Impact of sexual misconduct on human capital in the military. The literature shows sexual harassment and sexual assault in the military are burdensome to the public. In addition to the human costs of sexual assault, a study by the Illinois Coalition Against Sexual Assault (2007) attempted to affix a dollar-cost to society. They estimate the total cost a sexual assault at $110,000 including lost wages, medical and legal expenses. DeLisi et al. (2010) reported this figure to be $151,433 per rape. Furthermore, this research cites $267 million per year cost of sexual harassment. In addition to dollar costs, sexual assault and sexual harassment can have other negative impacts unique to military organizations including unit cohesion, military readiness, and retention.

Unit Cohesion

Schaub (2010) examined unit cohesion in terms of its components; task cohesion and social cohesion. He describes task cohesion as the collective efforts of a group to achieve a common goal and social cohesion as the shared values and attitudes of the group. Social cohesion is the same definition used to describe organizational culture. Furthermore, both the unit's social and task cohesion have a profound effect on its performance. There is a strong negative correlation between sexual harassment and vertical unit cohesion (Rosen & Martin, 1998). Military leaders place a high value on unit cohesion; Firestone and Harris (2008) cite earlier works by Rosen describing how unit cohesion is sometimes used to exclude women from the organization.

Military Readiness

Sexual harassment and sexual assault affect readiness, sexual harassment correlates with low unit readiness along with poor leadership climate (Rosen & Martin, 1998). CNN reported (McLaughlin, 2013) Senator James Inhofe speaking to the Senate Armed Services Committee stating that "sexual assault is an enemy to morale and readiness." In the same setting, the Chief of Staff of the Army General Raymond Odierno stated, "These crimes cut to the heart of the Army's readiness for war. They destroy the very fabric of our force–soldier and unit morale" (McLaughlin, 2013, para. 4).

Retention

The long-term effects of sexual harassment and sexual assault influence human capital in the military in terms of retention. Antecol and Cobb-Clark (2001) suggest military members who reported being sexually harassed within the previous 12 months

had lower job satisfaction. In addition to lower job satisfaction, their intentions to separate from the military are higher, as is dissatisfaction with employment in the military. However, Antecol and Cobb-Clark's assertion conflicts, in part, with earlier research to determine if sexual harassment affected retention. Firestone and Harris (2008) performed hieratical regression on a DoD survey to determine predictors of military members' intention to remain in the military. Their research isolates the impact of individual and environmental harassment on reenlistment intentions. Although they determine individual harassment is not a significant predictor of women's intention to remain in the military, they determined environmental harassment was a significant predictor of retention. Although, environmental harassment is far from the strongest predictor identified.

Unreported Crimes

Research shows sexual assaults in the military often go unreported by victims. Mengeling et al. (2014) assert that not reporting allows perpetrators, 80% of whom are military members, to escape justice and possibly assault others. This assertion is echoed by research that suggests some victims downgrade their assault experience and attribute it to miscommunication (Clodfelter, Turner, Hartman, & Kuhns, 2010). Therefore, reluctance to report assaults undermines the military justice system, the trust the military members have in their teammates, and ultimately the public trust in the military (AETC, 2012).

Employing Awareness Strategies

The DoD (2013a) directs the services implement a multi-pronged approach toward preventing sexual assaults in the military. The DoD recommends integrating

community involvement, communication, deterrence, incentives, and harm reduction strategies in addition to education and training. As part of the SAPR training program, the DoD (2013b) established core competencies for SAPR training at multiple times in a service member's career. These core competencies identify required skills for a point in an Airman's career. Officers, enlisted members, commanders, and senior enlisted personnel are included in the core competencies.

The DoD core competency list (U.S. Department of Defense, 2014a) establishes core competencies for the military's newest members, *accessions.* The DoD identified two phases of accessions training—recruit and post recruit. The recruit phase describes trainees in each of the services basic training courses. Post-recruit training refers to students attending one of the service's initial career-field courses. The DoD (2014a) establishes post-recruit education and training standards for SAPR training including bystander intervention and consent determination. The DoD directs SAPR training be evidence-based, adapted to the environment and tailored to the culture and beliefs of the target audience. The DoD specifies adult learning principles to emphasize these concepts. In response to DoD directives, the Second Air Force commander directs SAPR training include realistic scenarios to foster discussion on culture-specific content and messages (L. A. Patrick, personal communication, 2012).

Employing Intervention Strategies

Burn (2009) describes intervention as action taken by bystanders to prevent sexual assault when there are indications that an assault is likely to occur. Examples of interventions include a group of women not leaving an intoxicated friend at a party or bar. Burn provides examples of how men can intervene to reduce the possibility of

sexual assault; such as one man reminding a friend that the woman he is talking to is too intoxicated to give consent.

The DoD (2013b) identifies bystander intervention as one of its core competencies for enlisted and officer post-recruit students. To exercise this competency, the DoD (2014a) tasks leaders to develop intervention strategies unique to their units. The U.S. Naval Academy literature embraces bystander intervention as a core competency stating, "We adhere strongly to the research-supported best practice of bystander intervention to encourage proactive leadership and community to prevent sexual assault and harassment" (U.S. Naval Academy, n.d., para. 2). The Air Force meets this tasking by incorporating training scenarios at its technical training locations (U.S. Department of Defense, 2013a). Air Force training is focused on bystander intervention principles, methods, and skills.

Defining the Need for Cultural Change in the Air Force

The desired end-state for the military is to achieve a culture that fosters individual dignity and respect (U.S. Department of Defense, 2014a). After having to relieve the Air Force's lead SAPR Officer, Secretary of Defense Chuck Hagel stated,

> Every service member is treated with dignity and respect, where all allegations of inappropriate behavior are treated with seriousness, where victims' privacy is protected, where bystanders are motivated to intervene and where offenders know that they will be held accountable by strong and effective systems of justice. (as cited in Garamone, 2013, para. 5)

Healthy behaviors the DoD (2014a) identified include: promoting protective factors. Van Tiem et al. (2012) define this as a culture of intervention, wherein the goal

is to create a group norm of desired practices. Unit-level interventions include influencing healthy behaviors, deterring inappropriate behaviors, and identifying offenders, supporting victims, and intervening safely at an individual level (U.S. Department of Defense, 2014b).

Communicating the Desire for Intimacy

One of the healthy behaviors associated with reducing sexual assault is establishing consent through deliberate communication (Cameron-Lewis & Allen, 2013). As social commentator John Oliver stated, "sex is like boxing; because if both people didn't fully agree to participate, one of them is committing a crime" (LastWeekTonight, 2015, l. 15:45). Domitrz (2003) suggests deliberate communication between partners removes doubt regarding consent and creates a culture of mutual respect. Furthermore, he points out that honest and open communication about intimacy empowers women who have not had an equal role in American culture. However, changing the culture through engagement about social mores regarding gender roles and intimate communication is possible. Cameron-Lewis and Allen (2013) describe this communication as ethical erotics and recommend ethical sexual relations be taught to young people to avoid confusion and mixed messages.

Linking Alcohol Use and Sexual Assault

An article in Slate magazine implied that telling college women to stop getting wasted would reduce sexual assault (Yoffe, 2013). While the title of the article shifts the blame to the victims of assault, the data supporting the claim is correct. A 2007 U.S. Department of Justice report found that 82% of college students reporting sexual assault were under the influence of alcohol or drugs at the time (Krebs et al., 2009). This

supports Air Force internal reports that found 74% of reported sexual assaults among technical training students involved alcohol (Clark et al., 2013). Newlands and O'Donohue (2016) recommend training women on the effects of alcohol consumption as a treatment to reduce sexual assaults. They assert alcohol training has potential to produce results seeing that studies show five times more sexual assaults on college campuses result from incapacitation than force.

The problem of alcohol use does not apply only to women. Research shows that men are more likely to miss verbal cues about intimate intent and engage in risky sexual behaviors intoxicated (Giancola, Josephs, Parrott, & Duke, 2010). This can be attributed to a cognitive deficit in which a person who is drinking is likely to focus only on parts of the conversation that appeal to them at the moment; the implication is that men are more likely to commit sexual assault when drinking. (Abbey, 2002; Flowe et al., 2011). Therefore, research recommends educational interventions that change alcohol expectancies among women, and encourage males to act as allies by intervening on behalf of women to prevent sexual assaults (Abbey, 2002; Dupain & Lombardi, 2014; Parkhill & Abbey, 2008).

Prosocial Intervention

In 1987 the University of New Hampshire had a rape on campus; although several students witnessed the crime, none intervened to stop it (Winerip, 2014). This event led to the creation of intervention programs that reduced the number of student athletes involved in legal cases 90%. This approach is echoed by Exner and Cummings (2011) who identified a skills deficit in prosocial intervention and recommend programs to improve skills in executing safe and appropriate interventions to reduce sexual assault.

Furthermore, the adoption of bystander intervention training reduces tolerance for sexual assault within the culture by promoting prosocial norms (Newlands & O'Donohue, 2016).

Learning Strategies Can Change Organizational Culture

Researchers have determined affective engagement strategies and positive psychology can have a positive effect on the attitudes and values students build while in the classroom setting. Affective engagement changes students' perceptions of mutual respect and acceptance among their peers (Corso et al., 2013). C.C. Wang and Ku (2010) studied the impact of employing positive psychology to improve the interrelationships of individuals, groups, and institutions. Their research links social and cultural identity to individual development, goals, and happiness. Therefore, the relationship between individual values and organizational culture is recursive. The values of the organization affect the values of the individuals that comprise it. Moreover, the values of the members make up the values of the organization. Research suggests when changing the culture of an organization; one must first change the values of individuals that comprise it.

Leveraging the Power of Social Norms

The literature identifies leveraging the power of social norms as one of the most effective methods for modifying behavior. The beliefs, values, and norms of the organization can shape individuals behavior. However, perceptions of organizational norms are just as powerful as facts (Watkins & Leigh, 2010). Scholly, Katz, Gascoigne, and Holck's (2005) research shows a significant disparity between the actual norms of the organization and the perceptions of individuals in the group when it comes to sexual

behavior. Their research suggests students often had incorrect perceptions of sexual activity within their peer group.

The impact of incorrect perceptions of social norms on behavior is explained by Schultz et al. (2007). Their research showed perceptions of social norms, correct or otherwise, are powerful predictors of individual behavior. Their research identifies the boomerang effect while measuring alcohol consumption among college students. Some students, who consumed less than the norm, actually increased their alcohol consumption when they became aware of actual alcohol consumption of their peers. This research warns of the risk of backfiring when using social norms to reduce an undesirable behavior. Their research shows the power of social norms may be harnessed to affect those engaging in risky behaviors, but it may have the opposite effect for those whose behavior did not previously include risky behaviors. This supports Schultz et al. (2007) supposition that individual behaviors trend toward the perceived social norm.

Social norms can affect sexual assault behaviors. Edwards and Vogel (2015) studied the relationship between perceived social norms and aggressive sexual behavior. Their research suggests exposure to social norms condoning sexual aggression correlated to men reporting a higher likelihood to commit sexual assault.

Storytelling and Classroom Debate

The literature is clear concerning the ability of educators' ability to modify behavior by addressing the affective domain of learning. Wang and Ku (2010) conducted a case study on affective learning. They assert the affective domain can be addressed in the classroom by using storytelling and teachable moments. Their research showed the storytelling could get students to the first two levels of Krathwohl's et al. (1999) affective

taxonomy; namely, *receiving* and *responding*. Furthermore, they showed students were accepting values, a sub-level of the third level of the affective taxonomy, *valuing*. By employing teachable moments, the students in their study were able to begin the process of organizing these values into a values system; the fourth level of the affective taxonomy, *organizing.*

Debate has been shown effective in reaching the affective domain. Jagger's (2013) research shows how debate could engage students in affective learning. She employed structured debate to create cognitive dissonance and improve critical thinking. Her research shows engaging students' emotions with intensity towards a target, allows students to experience respect, empathy and tolerance.

Marketing Campaigns

Marketing attempts to influence the consumer of the value of a product. Van 't Riet et al. (2010) discusses the importance of marketing to affect changes the attitudes of a population to create a positive attitude toward a brand. The purpose of the marketing campaign is to persuade people of what they stand to gain by identifying with the message. This is a *gain-framed* approach. The other approach is *loss-framed*, in which the consumer stands at risk of losing something if they do not identify with the message.

Van 't Riet et al. (2010) suggest using a gain-framed approach is most effective when advocating prevention behaviors. Marketing campaigns like this appeal to the individual's natural risk aversion are more likely to influence disease avoidance activities. Conversely, their research shows loss-framed approaches are most effective in persuading individuals to take risks to detect disease. Their results suggest using a

combined approach of loss- and gain-framed marketing may have the greatest effect to change behaviors and foster positive attitudes toward healthy behaviors.

Transmedia Marketing Approaches

Transmedia applies marketing strategies to posters, video, and online content. When linked to internet content, posters provide students with additional opportunities to explore instructional topics. Hubenthal, O'Brien, and Tabor (2011) determined posters are effective means of communication for education and public outreach. Their research showed properly constructed posters engage learners in inquiry when developed from a learner-centered perspective. Furthermore, they suggest that using posters to enhance curricular materials appealed to learners' sense of discovery. This approach ties into marketing when advocating organizational change. Hubenthal et al. (2011) identify advantages of linking dynamic internet resources to static media such as signs and posters. Including a URL on the poster allows the curious to discover more information on the topic. This transmedia example links learners to more information on the topic. Their research suggests complementary information can extend learning by rewarding learner-directed inquiry. Studies suggest linking web-based animations to posters assist learners to gain a deeper understanding of the subject than word and pictures on their own (Harskamp, Mayer, & Suhre, 2007; Hubenthal et al., 2011).

Posters may be used to affect social norms (Giancola et al., 2010). Flowe et al. (2011) recommended drinking establishments have posters with slogans as "Drink, rape, go to jail." This type of poster is described by Scholly et al. (2005) as scare tactics. Their assertion is that most members of the target population do not engage in that behavior. Furthermore, they described scare messages as *health terrorism* and suggested

it may actually perpetuate the message that high-risk behavior is more common than it actually is. The false impression of the frequency of high-risk behavior can lead to the boomerang effect described by Schultz et al. (2007).

Instead of scare tactics, Scholly et al. (2005) promote using social norms to improve sexual behavior on college campuses. Hubenthal et al. (2011) recommend using posters to introduce a concept and linking it to animation to provide further engagement on the subject. This transmedia approach is described by Suleman (2014) as the future of storytelling, wherein the storyteller uses each media for its inherent strengths in telling the whole story. The storytelling approach is preferred for reaching the affective domain (Wang & Ku, 2010).

Employing Animation

Using animation to target the affective domain may be a novel concept. However, Ching and Fook (2013) shows the effectiveness of using a multimedia graphic novel to impact critical thinking. Their research demonstrates a graphic novel style of animation targeting the affective domain is more effective when combined with narration. Tatar et al. (2013) evaluated the effectiveness of animation to describe abstract concepts. Their analysis demonstrates using animations as an effective and efficient way to improve students' affective as well as cognitive skills. In a study of cartoon avatars, Taylor (2011) compares the ability of cartoons to create emotional connections to photographs of people and inanimate objects. His research showed cartoons created more empathy than either life-like people or objects. This research ties back to Wang and Ku's (2010) research suggesting interdisciplinary storytelling as a way to target the lower levels of the affective domain.

Chapter Summary

The literature shows that human capital includes the culture, values, and social norms of the organization (Becker, 2008). Human capital development in the affective domain fosters, and actively develops the attitudes and values into an organizational culture (Holton & Swanson, 2009). Likewise, the research shows programs targeting the organizational culture improve human capital (Watkins & Leigh, 2010).

Sexual harassment and sexual assaults are serious problems that affect the human capital of military organizations (Holland et al., 2014). Training programs designed to cause military students to feel differently about sexual assault and sexual harassment should rely on creating an emotional connection with the students (Jagger, 2013). Emphasizing desired social norms concerning sexual assault prevention is likely to influence individual behaviors (Edwards & Vogel, 2015). Posters and animations can complement classroom activities to target the affective domain and promote positive messages relating to social norms (Hubenthal et al., 2011; Tatar et al., 2013).

CHAPTER III - METHODOLOGY

The problem and research objectives of the proposed study guide the design of the study. In this case, the research methodology aligns with the needs identified by the Undersecretary of Defense (Wright, 2014) to improve standards of behavior and affect cultural change in the U.S. Air Force. To achieve the undersecretary's goal of affecting cultural change in technical training, the Second Air Force commander directed a revision of the curriculum used in initial SAPR training (M. A. Brown, personal communication, 2014). This research assesses how changing the SAPR curriculum affects the culture of military technical training campuses. The practical application, together with the need for scholarly research, leads to the use of an applied research methodology. The Organization for Economic Cooperation and Development (2015) defines applied research as "original investigation undertaken in order to acquire new knowledge…it is also directed primarily towards a specific, practical aim or objective" (p. 29).

The Secretary of the Air Force and operational commanders directed a fresh look to enhance SAPR training. Their goal was to improve misconduct reporting, as well as sexual assault, and harassment prevention and among technical training students AETC, 2012). Training developers employ affective engagement to change individual beliefs, attitudes, and values, and emotionally engage students through storytelling and debate (Jagger, 2013; Wang & Ku, 2010). This study quantifies the effectiveness of these training methodologies to affect attitudes, beliefs, and behaviors toward sexual assault prevention and reporting. To measure the impact of the revised curriculum, the researcher uses quantitative measures to determine whether training modifications

affected students' perceptions of sexual harassment, sexual assault, organizational culture, and social norms. The outcome of this study may affect future decision-making and Air Force training policy.

Research Design

The research objectives dictate the quasi-experimental design, non-random group selection, using archived data. The Air Force units engaged in the study determine how and when to survey individuals. Since the researcher cannot randomly select subjects to survey, the research is quasi-experimental design using archival data (Goodwin, 2010; Shadish, Cook, & Campbell, 2002). Furthermore, the practical application of the research dictates the researcher adopt a pragmatic worldview (Creswell & Plano Clark, 2011).

The quasi-experimental model used in this research is an interrupted time-series design (Shadish et al., 2002). The design relies on the statistical analysis of archival data in the form of two surveys; a training-climate survey and a planned behavior survey. The potential weakness of this research design is that it is difficult to isolate other factors within the environment or organization (Swanson & Holton, 2005). Air Force leaders at two training campuses elected not to implement the revised SAPR curriculum; students at these campuses serve as a control group. Adding a control group to a time-series design isolates threats to internal validity by comparing variations in both populations (Shadish et al., 2002). As is common with studies using archival data, the control and treatment populations cannot be randomly assigned (Goodwin, 2010). However, experimental and control groups are from similar student populations to help reduce the effects of factors

external to the experiment (Shadish et al., 2002). The research is designed to measure the following objectives.

RO1 — Determine whether students' reactions to the revised SAPR curriculum showed significant improvement over the previous format of training.

RO2 — Describe how students' perceptions of organizational tolerance of sexual assault vary over time.

RO3 — Describe how students' perceptions of organizational tolerance of sexual harassment vary over time.

RO4 — Describe how students' perceptions of organizational tolerance of behaviors associated with unprofessional relationships vary over time.

RO5 — Determine the differences in students' perception of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationship behaviors corresponding to the timeframe the SAPR curriculum format changed.

The research employs a secondary analysis of data from two surveys developed by the Air Force to measure training effectiveness and training climate. The planned behavior survey measures student reaction to SAPR training and is comprised of four subscales. The subscales measure students' beliefs about alcohol use, consent, intervention, and continuum of harm behaviors. The training-climate survey measures students' perceptions of the organizational culture in the training environment with respect to sexual assault, sexual harassment, and unprofessional relationships. The survey map in Table 1 aligns research objectives with the Likert scale items comprising each scale within planned behavior survey and climate survey.

Table 1

Survey Map

Research Objective	Instrument	Items	Scale	Statistical Test
RO1	Planned Behavior Survey			
	Alcohol use	6, 16, 17	Interval	Independent samples *t*-test
	Consent	4, 9, 12, 13, 14, 15	Interval	Independent samples *t*-test
	Intervention	5, 7, 11	Interval	Independent samples *t*-test
	Continuum of Harm	8, 10, 18	Interval	Independent samples *t*-test
RO2	Climate Survey	12,13,14	Interval	Trend Line Analysis
RO3	Climate Survey	10, 11	Interval	Trend Line Analysis
RO4	Climate Survey	3, 7, 8, 9	Interval	Trend Line Analysis
RO5	Climate Survey	3, 7, 8, 9, 10, 11, 12, 13, 14	Interval	Trend Line Analysis

Note. Research Objective refers to the research objectives. Instrument refers to the surveys identified in the appendices. Items Refer to the individual survey items supporting each RO. Scale identifies the classification of the data provided by the survey items. Statistical Test refers to the statistical test used on the data to test the null hypotheses.

Analysis of pre-intervention and post-intervention of Likert items from the planned behavior survey combines items into composite scales. Scale data is evaluated using parametric tools (Boone & Boone, 2012) to assess RO1. Training-climate survey data collected quarterly is treated as an interrupted time-series to assess RO2 through RO5. Interrupted time-series cannot be evaluated using ordinary statistics. Instead, a change in the slope of the trend-line is used to quantify results (Shadish et al., 2002).

Population and Sample

The population for the study is U.S. Air Force enlisted students attending initial technical training schools after BMT. This population shares several characteristics with traditional students on college campuses. Typically military students attending initial skills training are 18-26 years old, many are away from home for the first time, living in an environment that extols hypermasculinity, and experiencing a new set of social norms (Potter & Stapleton, 2012).

The U.S. Air Force recruited approximately 24,000 new Airmen (personnel) in fiscal year 2014 (U.S. Air Force, 2014a). After basic training, students report to one of 34 locations across the United States (U.S. Air Force, 2014b). Although, most of these Airmen spend some time in initial skills training at one of the five major training locations operated by Second Air Force (U.S. Air Force, 2014b). These students arrive from BMT each week and almost immediately enter a skills training pipeline. Pipelines consist of one, or more, courses of various durations (AETC, 2014). Students advance through the skills training pipelines in cohort classes following a group-paced format. The exact number in the population changes constantly because students enter and graduate on a weekly basis. Because of the constant flow of students, the total number of graduates is used as an analog of the population.

This study analyzed planned behavior survey data collected from 701 students including 363 students in the pre-intervention group and 338 students in the post-intervention group, representing four training bases conducting the revised SAPR training. Archived training-climate survey data from 9,976 students collected from fiscal year 2014 quarter three, to fiscal year 2016 quarter four was analyzed. Training climate

data represents a total population of 145,649 graduates limited to the same four training bases as the planned behavior survey.

Sampling Procedures

Research objectives RO1 through RO5 are assessed by conducting a secondary analysis of archival data produced by two surveys; the planned behavior survey (Appendix A), and the training-climate survey (Appendix B). Both surveys were developed and administered to meet established operational needs of the Air Force. Thus, the sampling procedures reflect how the Air Force administers each survey to meet operational needs.

The research analyzes archival data collected using the planned behavior survey to assess RO1, students' reaction to the revised SAPR curriculum. This survey asks students' opinion of the course's benefit and their beliefs of group norms and their own intentions. Air Force SAPR trainers use the planned behavior survey to measure students' reaction to training immediately upon completion of training.

Archival data collected using the training-climate survey is analyzed to assess RO2, RO3, RO4, and RO5 assessing the organizational tolerance of sexual assault, sexual harassment, unprofessional relationships, and the overall organizational culture with respect to sexual misconduct, respectively. This survey asks students for their perceptions of sexual misconduct within the training environment and their own fear of reprisal for reporting misconduct. The survey provides Air Force commanders with a snapshot of the current climate within their training organizations. Commanders review the data and comments to identify potential problems within the technical training environment (L. A. Patrick, personal communication, 2012).

Sampling Research Objective One

All non-prior service students receive a battery of training briefings within the first 3 days of arrival from BMT, including SAPR AETC, 2016). The SAPR training facilitators administer planned behavior surveys to all students receiving the training. SAPR facilitators administer the paper-based survey immediately following the training. The planned behavior survey is a census and does not apply sampling techniques (Fink, 2003b; Phillips et al., 2013). SAPR facilitators record the results of the planned behavior survey and review comments to identify ways to improve the students' experience in the class.

Sampling Research Objectives Two through Five

The climate survey sampling employs a cross-sectional design and cluster sampling (Fink, 2003a, 2003b). The Second Air Force commander directs units to administer a training-climate survey to at least one class per squadron per month to meet operational and organizational requirements (L. A. Patrick, personal communication, 2012). Technical training groups' training assessment offices choose classes at random to receive the survey. This random cluster-sampling scheme minimizes the impact of the survey on the organizations' training mission. Training groups report the results of the surveys quarterly (AETC, 2015b). The training group evaluators populate an Excel spreadsheet with the totals for each survey item by response category. Although training groups administer the survey monthly, it is not a longitudinal study because there is not a consistent cohort population required for a longitudinal survey (Phillips et al., 2013).

The student training-climate survey consists of standardized instructions to the survey administrator, a standardized glossary of terms used in the survey, standardized

instructions to the student and the survey questionnaire. The instructions to the survey administrator reduce differences in administration (Fowler & Mangione, 1990). The training-climate survey employs sampling techniques to minimize the impact on the organization and still achieve confidence.

Sample Size. Training groups consist of two to six squadrons of 35 to 700 members each (U.S. Air Force, 2011). Classes used for cluster sampling vary in size from 4 to 100 students, but a typical class size is 12 students. Each calendar quarter, training evaluators administer surveys to meet or exceed a 95% confidence level for the overall population (L. A. Patrick, personal communication, 2012). Training evaluators use the provided spreadsheet, which calculates the minimum sample size required for the prescribed confidence level. In this case, the spreadsheet uses the number of graduates each quarter as an analog of the population size.

To determine the sample size, the response distribution from previous administrations of this survey are grouped into agree and disagree categories. The historic response distribution had 97% of respondents agree or strongly agree with positively framed statements in the climate survey. This low event rate in the population reflects the anticipated response distribution, and thus reduces the required sample size. Researchers recommend adjusting the sample size when event rates are low or skewed to improve the accuracy of results (Cundill & Alexander, 2015; Kirby, Gebski, & Keech, 2002). Since historic response distributions are skewed toward positive responses, the neutral responses are included with negative responses to increase sample size. In the case of a large training base such as Lackland Air Force Base with a quarterly training

throughput of 2,500 graduates, and a historical average of 97% agree or strongly agree, 117 surveys are required to attain a 95% confidence level.

Criteria used for Sampling. The training-climate survey is targeted to non-prior service students attending their first technical school after basic training. This population is the same one that the DoD requires to receive targeted SAPR training (U.S. Department of Defense, 2013b). All classes in initial-skills training courses fit this criterion. Classes of students returning from operational assignments to attend advanced and supplemental training courses are not eligible to receive the survey.

Step-by-Step Account of the Sampling Process. Air Force policy determines sampling procedures training groups follow. The Second Air Force commander tasked training group commanders to sample a minimum of one class per squadron per month (L. A. Patrick, personal communication, 2012). Because the training-climate survey is developed to meet operational requirements, training groups are tasked with determining the best method of sampling classes to survey. Second Air Force uses multi-stage sampling employing a combination of cluster random, and convenience methods to meet operational needs and provide a sample representing the population (Trochim, 2006). In this three-stage model, Second Air Force collects surveys for each of the five training groups treating each as a cluster. Training groups, in turn, survey three to six training squadrons, treating each as a cluster. Training squadrons are composed of many classes. Training evaluators select one class, per squadron, per month at random based on the classes available. This method ensures three classes in each squadron are surveyed each calendar quarter. This sampling method assesses a cross-section of the Second Air Force student population three times during each quarterly reporting period. Quarterly, training

groups report the number of surveys administered and whether sample sizes meet statistical significance requirements for the reporting period.

Evaluators from each training group follow the standardized instructions included with the survey instrument to select classes to survey. Evaluators select classes without providing prior notification to the squadron supervisors, to prevent undue influence from biasing results. Evaluators check in with a course supervisor to identify which classes are in session and what tasks the classes are performing. They avoid interrupting classes that are taking written or performance examinations to minimize impact to training. Evaluators may avoid classes engaged in field exercises or training in hazardous locations.

Instrumentation

The current study measures data from two survey instruments, the planned behavior survey, and the training-climate survey. The planned behavior survey (Appendix A) measures attitudes, beliefs, and perceptions of social norms regarding healthy and respectful sexual behaviors. The training-climate survey (Appendix B) is administered to a sample of the student population to gauge perceptions of misconduct and barriers to reporting it. This study conducts a secondary analysis of the results of these surveys to measure the impact of SAPR training.

Instrumentation of Research Objective One

The planned behavior survey measures the student's reactions to SAPR training. The theory of planned behavior states that control beliefs, attitudes, and subjective norms are reliable predictors of actions (Fishbein & Ajzen, 2010). All items on the end-of-course critique are measured on a continuum scale from 1 to 6. The internal consistency

of the planned behavior survey was determined by performing a Cronbach's alpha on the results from students in the three validation classes after implementation, Table 2 lists the results.

Table 2

Planned Behavior Survey Reliability

Scale	Number of items	*M*	*SD*	α	*n*
Planned Behavior	16	30.03	7.37	.712	323

Note. Reliability is the internal consistency of the survey items excluding demographic questions. *M* is the mean for the scale. *SD* is the standard deviation for the scale. α is Cronbach's alpha based on standardized items. *n* is the number of students in the validation classes that tested the survey.

The Cronbach's alpha based on standardized items is .71. A recommended acceptable Cronbach's Alpha is at least .70 (Nunnally & Berenstein, 1994). Second Air Force developers addressed content validity by mapping survey items to research objectives, ensuring items relate to the objective measured (Phillips et al., 2013). The research objectives are linked to the course objectives because course objectives are derived from the scientific literature on sexual assault prevention education. The planned behavior survey map (See Table 3) identifies items that measure students' attitudes, perceived norms, and control beliefs toward alcohol use, obtaining consent, prosocial intervention, and identifying behaviors on a continuum of harm. These subjects represent the course objectives for the revised SAPR training.

Table 3

Planned Behavior Survey Map to Course Objectives

Subject Area	Attitude Towards…	Perceived Norms	Control Beliefs	Other
Alcohol use	17	6	16	
Obtaining Consent	4, 15	14	9, 12, 13,	
Prosocial Intervention	5	11	7	
Continuum of harm	18	8	10	
Demographics				1, 2
Relevance				3

Note. Attitude towards refers to the items that measure attitudes toward the subject area. Perceived norms refer to items that measure perception of social norms toward the subject area. Control beliefs refer to items that measure individual's ability to control their own actions in the subject area.

Developers addressed content, construct, and face validity. Construct validity was addressed by obtaining expert review from experts (Phillips et al., 2013). In this case, sexual assault response coordinators and the Second Air Force Staff Judge Advocate reviewed the survey for construct validity. Curriculum developers established face validity by reviewing questions for adequate wording and ensuring the questions were sufficient to measure the subject (Fink, 2003c).

The planned behavior survey is a census of BMT graduates in a given week. All students are provided with the survey and instructed return it to the SAPR course facilitators (C. Burnett, personal communication, January 14, 2016). Course facilitators use the data to improve their presentation and facilitation skills. Course facilitators compile the results to provide a more detailed analysis of the usefulness of the training. All items on this end-of-course survey are measured on a continuum scale tailored to each question. The students mark their response on each continuum from 1 to 6. The

scale was selected for its improved validity and discrimination when compared to scales with fewer responses, and to balance needs for reliability and respondent's time (Preston & Colman, 2000). The use of an even number of responses eliminates the option of a neutral, middle response as a default option (Dalal, Carter, & Lake, 2014). Each item on the survey is as an incomplete statement with upper and lower bounds tailored to the item. The bounds insure the items measure social norms, control beliefs, and attitudes toward a behavior. For example, item 5 designed to measure respondents' attitude toward prosocial intervention is written as; Intervening in a situation to prevent sexual assault will be easy-difficult.

Instrumentation of Research Objectives Two through Five

Training evaluators at Second Air Force developed the climate survey based on issues identified in General Woodward's report on misconduct in BMT (AETC, 2012), and the Second Air Force Sexual Assault working group (Clark et al., 2013). The primary concerns with collecting data on sexual misconduct are the sensitive nature of the responses and respect for the respondent's privacy (Second Air Force, 2012). Because the survey asks about inappropriate relationships between faculty, staff, and students, the designers instructed evaluators to ensure faculty and staff are not present when administering the survey. No personally identifying information such as names or class numbers are collected with the survey. Although the lack of identifiers prevents evaluators from collecting demographic information, the survey designers deemed it necessary to preserve the anonymity of the survey respondents in light of the gravity of the subject matter. Table 4 maps training-climate survey items to subject areas.

Table 4

Training-climate survey Map to Operational Requirements

Subject Area	Confidence in Knowledge	Perceived Norms	Perceived Tolerance	Fear of Reprisal
Sexual Harassment			10, 11	
Sexual Assault		12, 14	13	
Bullying and Hazing			6	
Unprofessional Relationships	7		8	9
Maltreatment/Maltraining		4, 3		5
Command Access	1, 15	16		2

Note. Confidence in Knowledge refers to the items that measure whether individuals feel confident in the subject area. Perceived norms refer to items that measure perception of social norms toward the subject area. Perceived Tolerance refer to items that measure individual's belief that actions are tolerated by their peer group. Fear of Reprisal refers to items that measure whether individuals fear reprisal for reporting these actions.

Training-Climate Survey Validity. Training evaluators within each group helped enhance the validity of the survey. These experts in student evaluations recommended changes to enhance construct, content, and face validity (Phillips, Phillips, & Aaron, 2013) of the survey using a comment review and adjudication process (U.S. Air Force, 2013). Evaluators at each training group reviewed the survey and recommended changes along with justification for the changes to the survey developers (L. A. Patrick, personal communication, 2012).

Training-Climate Survey Reliability. The training groups conducted test-retest reliability trials (Fink, 2003c; Second Air Force, 2012). Each of the nine training groups identified classes to test the survey. Training group evaluators administered the survey to classes and returned two weeks later and administered the same survey to the same classes (Aday & Cornelius, 2006; Jackson, 2015). Two of the training groups uncovered active sexual assault cases during the trials, these were excluded from the test-retest study

to prevent the data from being skewed and to allow the units to resolve the cases (P. Noe, F. Teeter, personal communication, 2014). In total, 217 students participated in test-retest reliability trials. Aday and Cornelius (2006) recommend a minimum acceptable correlation coefficient of .70 when assessing test-retest reliability for group-level differences. Overall, the reliability of the survey was good with a correlation coefficient of .99 and correlation for all individual items exceeding .99. The survey has produced consistent results in the quarterly analysis of results since its implementation in 2012. To date, training evaluators have surveyed over 10,000 students using this instrument.

Second Air Force survey developers revised the final instrument based on adjudicated evaluator comments and results of the test-retest reliability (Second Air Force, 2012). The developers made minor wording changes to make the survey items more specific and split question 13 into two components. Standardized instructions to the survey administrator were refined and a glossary of terms used provides respondents with standardized definitions of terms used in the survey. The finalized survey consists of 16 items, answered using a five-point Likert scale ranging from *Strongly Agree* to *Strongly Disagree* with a neutral mid-point. All items are designed with *Strongly Agree* being the most positive response.

Data Collection Procedures

This research relies on secondary analysis of data collected for another purpose (Smith, 2008). In this case, training groups collect data from training-climate surveys to meet operational needs. Each of the five training groups conducts surveys by selecting classes at random to take the survey. Unit commanders receive survey results monthly to detect student, faculty, and staff misconduct within their units. In addition to misconduct,

the training-climate surveys detect students' perception of tolerance of actions and attitudes detrimental to a culture of dignity and respect. Training groups report survey results to Second Air Force quarterly in the format shown in table 5.

Table 5

Sample Training-climate survey Data Report

Item	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
1	162 (39.2%)	213 (51.6%)	27 (6.5%)	10 (2.4%)	1 (0.2%)
2	191 (46.2%)	183 (44.3%)	32 (7.7%)	6 (1.5%)	1 (0.2%)
3	224 (54.2%)	155 (37.5%)	30 (7.3%)	3 (0.7%)	1 (0.2%)
4	251 (60.8%)	144 (34.9%)	16 (3.9%)	0 (0.0%)	2 (0.5%)
5	234 (56.7%)	163 (39.5%)	13(3.1%)	3 (0.7%)	0 (0.0%)
6	237 (57.4%)	153 (37.0%)	18 (4.4%)	5 (1.2%)	0 (0.0%)
7	277 (67.1%)	131 (31.7%)	5 (1.2%)	0 (0.0%)	0 (0.0%)
8	285 (69.0%)	122 (29.5%)	6 (1.5%)	0 (0.0%)	0 (0.0%)
9	252 (61.0%)	147 (35.6%)	11 (2.7%)	2 (0.5%)	1 (0.2%)
10	295 (71.4%)	113 (27.4%)	4 (1.0%)	0 (0.0%)	1 (0.2%)
11	260 (71.4%)	139 (33.7%)	11 (2.7%)	3 (0.7%)	0 (0.0%)
12	256 (63.0%)	131 (31.7%)	21 (5.1%)	2 (0.5%)	3 (0.7%)
13	279 (67.6%)	124 (30.0%)	9 (2.2%)	0 (0.0%)	1 (0.2%)
14	255 (61.7%)	128 (31.0%)	25 (6.1%)	3 (0.7%)	2 (0.5%)
15	255 (61.7%)	145 (35.1%)	12 (2.9%)	1 (0.2%)	0 (0.0%)
16	241 (58.4%)	147 (35.6%)	16 (3.9%)	6 (1.5%)	3 (0.7%)

Note. Item refers to the item number in the survey. Strongly Agree, Agree, Neither agree nor disagree, Disagree and Strongly Disagree refer to the total number of responses marked thus marked for each survey item.

The planned behavior survey measures the student's intent to act and their reaction to the training. It combines questions about the students' opinion of the course's benefit with questions on their perceptions of group norms, beliefs, and intention to act.

Fishbein and Ajzen's (2010) theory of planned behavior states that intentions and subjective norms are reliable predictors of actions. Training facilitators administer the survey at the end of each class. Training groups report survey results to Second Air Force upon request in the format shown in Table 6.

Table 6

Planned Behavior Sample Survey Data Report

Unit	Sex	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18
223 trs	F	1	4	1	1	1	1	2	1	1	3	1	1	1	1	1	1
123 trs	F	1	2	3	2		1	1	1	2	3	1	2	3	1	2	1
323 trs	F	3	1	3	3	2	2	1	2	1	1	1	3	1	1	1	1
223 trs	M	4	1	3	1	1	1	1	1	3	1	1	2	1	1	1	1
223 trs	M	2	1	2	1	4	6	4	1	2	6	1	2	1	1	1	1
223 trs	M	3	1	1	1	1	3	1	1	1	1	3	1	1	6	3	2
223 trs	F	3	1	3	1	3	2	1	3	5	2	1	1	6	1	1	1
223 trs	M	1	1	2	1	3	1	1	1	1	3	1	1	1	3	3	3
223 trs	F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
323 trs	M	1	1	3	1	1	1	1	1	1	1	1	1	1	3	1	1
223 trs	M	3	3	4	2	1	1	1	1	1	1	1	3	2	2	1	1
123 trs	M	5	2	2	1	1	1	2	2	2	5	1	2	2	6	1	1
223 trs	F	1	1	2	1	1	2	1	2	1	1	1	2	1	1	1	1
323 trs	F	4	1	2	2	3	1	1	1	2	2	1	2	1	2	1	1
223 trs	M	5	1	1	1	1	4	1	1	1	1	1	1	3	2	3	3

Note. Unit refers to training squadron (trs) of assignment, Sex refers to the gender of the respondent, Q3 through Q18 refer to the item number in the survey. Individual responses for each item are recorded horizontally on an integer scale of 1 to 6. Data in this table is notional.

Protection of Human Subjects

Prior to collecting data, the researcher requested the Institutional Review Board at The University of Southern Mississippi approved the study. The Institutional Review Board ensures appropriate safeguards are in place to mitigate the potential for harm. The IRB approval is in Appendix B.

Authorization to Use Air Force Data

Prior to collecting data, the researcher obtained authorization to use data collected by the U.S. Air Force. The Air Force approval is contingent on the data provided the researcher being free from personally identifying information of Air Force members. The approval to use Air Force data is provided in Appendix C.

Data Analysis Plans

The data provided from the planned behavior surveys and the training-climate surveys were reported at different times and in different formats reflecting their original purposes. The planned behavior survey data were collected from classes that received the old curriculum and from classes that received the new curriculum. The training-climate survey data was reported quarterly. Therefore, the secondary analysis of data from these two instruments is different as well.

Analysis Plan for Research Objective One

A secondary analysis of this data may show a significant change in student's attitudes, control beliefs, and perception of subjective norms associated with sexual assault prevention and reporting. This research compares survey data from pre-intervention classes to that of post-intervention classes. The researcher compared pre-

intervention class data to data compiled from post-intervention classes to determine the outcome of RO1.

The analysis plan for RO1 requires an independent samples *t*-test (Field, 2013) on each scale within the planned behavior survey, as well as the entire survey. A Levene's test identifies whether the data sets can be assumed to have equal variances, therefore which *t*-test result is used (Field, 2013). The data are tested in an attempt to reject the null hypotheses (Swanson & Holton, 2005). The alpha for this RO is set at 0.05. Nunnaly and Berenstein, (1994) suggest an alpha of 0.05 is sufficient for research in the social sciences. The alpha of 0.05 reduces the likelihood of committing a Type I error where the null hypothesis is rejected even though it is true. In the case of this study, the null hypotheses would be true if students' reaction to the revised SAPR curriculum is no different than it was from to the previous format.

Analysis Plan for Research Objectives Two through Five

The quarterly data provides the response distribution for a 3-month period. A secondary analysis of quarterly data may show if student perceptions change over time. This research trends quarterly training-climate survey data collected through the period when the curriculum was changed to identify trends using an interrupted time series (Wagner, Soumerai, Zhang, & Ross-Degnan, 2002). The training-climate survey is the data source for research objectives RO2 through RO5.

The analysis plan for RO2 through RO5 requires plotting each scale within the training-climate survey, as well as the entire survey on a timeline. Questions on the training-climate survey are grouped by research objective (see Table 5) and assessed as a complete scale (Boone & Boone, 2012). Likert items are combined into a scale value by

assigning values of 1, 2, 3, 4, 5, to strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree respectively, and summing the results and taking the mean (Aday & Cornelius, 2006). A random sample for the training-climate survey is calculated to provide a 95% confidence level, while the end-of-course survey is administered to all attending the training.

Time series data for the experimental group is interrupted at the point where the curriculum changed. Since interrupted time series data cannot be measured using ordinary statistics (Shadish et al., 2002), the interrupted time series is compared to the time series data for the control group that did not experience a curriculum change. A trend, or regression line, is plotted for each segment of the interrupted time series and the control group time series data. Segmented regression (Wagner et al., 2002) is used to compare trends for pre-intervention samples and post-intervention samples. A plot of the trend lines for response distributions in the quarterly survey data is completed using Microsoft Excel. The trend line for the pre-intervention results is plotted alongside the trend line for the post-intervention results. Visual inspection is the recommended analysis approach for interrupted time-series when (Shadish et al., 2002). A discontinuity exists when a change in the slope of the trend line changes at the point where the new curriculum is implemented. The trend line is considered to accurately represent the data set when the Pearson's *r* correlation to the trend line is .5 or greater (Cumming, 2012). An additional trend line for the control group is plotted alongside the other two for comparison. Adding a non-intervention control group reduces the possibility of confounding variables threatening internal validity (Shadish et al., 2002).

Chapter Summary

The research methodology used in this study is determined by the research objectives. The research design is quasi-experimental, employing a combination of interrupted time series and *t*-test to analyze Likert scale data from two survey instruments. The survey instruments are used primarily to provide feedback to trainers and commanders and a secondary analysis conducted for this study. The population for this research is Air Force Enlisted students attending technical training. The training-climate survey measures a sample of the population while the planned behavior survey is administered to all students receiving training. Training groups provide data to Second Air Force quarterly for analysis.

CHAPTER IV – RESULTS

The research objectives determined the processes for analyzing data and the design of the study. The population is comprised of 18-26 year-olds attending initial skills training at the five major technical training bases for the Air Force. The research uses data from two Air Force surveys to assess the impact of changing the SAPR curriculum. The Air Force graduated approximately 146,000 initial skills students during the 10 fiscal quarters represented by the sample populations. The commander of Second Air Force permitted the researcher to collect data from archival records maintained by the organization for conducting research (Appendix C).

Data Analysis Procedures

All Second Air Force training groups provide response distributions for the training-climate survey for analysis quarterly. Two training groups did not implement the revised curriculum and make up the control group in this study. Two training groups implemented the revised curriculum and make up the treatment group for this study.

Research Objective One

The purpose of RO1 is to determine whether student's reactions to the revised SAPR curriculum showed significant improvement over the previous format. The data in Table 7 illustrates the analysis of RO1: Namely, to determine students' reaction to the scenario-based SAPR training.

Table 7

Planned Behavior Survey Descriptive Statistics.

Survey Scale	Survey Admin	Descriptive Statistics			Levene's test	*t*-test	
		M	*SD*	*n*	*Sig*	*t*	*Sig*
Overall	Pre	29.61	7.80	363	.133	-.739	.460
	Post	30.07	8.56	338			
Alcohol use	Pre	6.28	2.82	363	.235	1.388	.166
	Post	5.99	2.76	338			
Consent	Pre	9.50	3.31	363	**.573**	**-1.999**	**.046**
	Post	10.01	3.45	338			
Intervention	Pre	5.29	2.13	363	.024	-1.228	.220
	Post	5.50	2.45	338			
Continuum of harm	Pre	5.50	2.14	363	**.356**	**-2.353**	**.019**
	Post	5.88	2.13	338			

Note. Survey Scale refers to the scale or subscale of the survey, overall is the composite of all subscales. Survey Admin refers to the administration time of the survey, whether the previous curriculum Pre or revised curriculum Post. *M* is the arithmetic average of the responses for the responses. *SD* is the standard deviation of the data set. *n* is the number of responses for the item. Levene's test checks for equality of variances among the data sets compared in the *t*-test. The *t* statistic for the comparison of means. *Sig* refers to the significance of the *t*-test comparing pre-intervention and the post-intervention results, consent and continuum of harm had significant differences.

The data collected was first reviewed to ensure it met the assumptions for an independent-samples *t*-test. These assumptions are linearity and additivity, normality, homogeneity of variance, and independence of groups (Field, 2013). Linearity and additivity are assumed since each scale measures a single dimension of planned behavior as a mean of the added values of individual survey items rated on a linear (1 to 6) scale.

Normality of the sample distribution is assumed due to the large sample sizes ($n = 362, n = 338$) of the independent groups, and the central limit theorem implies this will hold true regardless of the shape of the distribution (Field, 2013). Homogeneity of variance is tested using Levene's test on the two groups using significance value of .05, where the $p \geq .05$, equal variances are assumed when analyzing the data using a subsequent *t*-test (Field, 2013). Independence between groups is assumed since students only have the opportunity to attend the training once, at the completion of BMT (Air Education and Training Command, 2004). Therefore, members of one group attending training would not have the opportunity to attend training with part of another group.

The survey was administered to a sample of students receiving the old curriculum (T_1) and an independent sample of students receiving the new curriculum (T_2). Descriptive statistics and a *t*-test for each scale of the planned behavior survey are listed in Table 7. Individual responses for items were summed to form the Likert scales. SPSS was used to compute homogeneity and conduct a *t*-test on the scale data (Boone & Boone, 2012). An independent samples *t*-test was used to determine if there is a significant difference between the two administrations of the survey since the pre-intervention population sampled has no members in common with the post-intervention population. A significance value for the *t*-test of $p \leq .05$ would allow the rejection of the null hypothesis, and that significant differences exist between the Pre and Post samples of the population (Nunnally & Berenstein, 1994). Subscales of the planned behavior survey were analyzed in a similar manner to determine if significant differences exist between the Pre and Post samples of the population for specific behaviors known to affect sexual assault.

The analysis of the overall scale data shows homogeneity greater than .05, therefore equal variances are assumed. The means for the Pre and Post samples are close, 29.61 and 30.07 resulting in a significance of .133. This result is greater than the α of .05 required to assert there is 95% probability of significant difference between the Pre and Post samples.

Research Objective Two

The purpose of RO2 is to describe how perceptions of organizational tolerance of sexual harassment vary over time. The scale to measure perceived tolerance of sexual assault combines training-climate survey items 12, 13, and 14. The data in Table 8 illustrates RO2. It illustrates the change in students' perception of tolerance of sexual assault.

Table 8

Response Distribution for Perceived Tolerance of Sexual Assault Scale

Fiscal Year-Quarter	Control				Treatment			
	M	*SD*	*n*	N_p	*M*	*SD*	*n*	N_p
FY14-Q2	4.52	.11	387	7,696	4.61	.12	870	7,028
FY14-Q3	4.51	.13	315	8,204	4.55	.09	870	9,702
FY14-Q4	4.63	.07	852	5,112	4.58	.05	1,283	6,830
FY15-Q1	4.63	.08	251	5,619	4.62	.04	585	6,537
FY15-Q2	4.55	.04	210	5,146	4.69	.04	516	6,780
FY15-Q3	4.61	.03	229	6,522	4.63	.05	473	5,943
FY15-Q4	4.65	.02	223	6,485	4.58	.06	336	4,196
FY16-Q1	4.70	.03	228	5,837	4.58	.05	381	6,428
FY16-Q2	4.62	.05	234	5,256	4.58	.06	420	7,004
FY16-Q3	4.72	.05	227	7,175	4.58	.05	504	7,455
FY16-Q4	4.69	.04	222	7,726	4.54	.06	460	6,968

Note. Fiscal Year Quarter identifies the fiscal quarter the surveys were administered. SA is the percentage of strongly agree responses for the item, A is the percentage of agree responses for the item, N is the percentage of neither agree nor disagree responses for the item., D is the percentage of disagree responses for the item., SD is the percentage of strongly disagree responses for the item. *n* is the number of surveys returned for the fiscal quarter. N_p is the student population determined by graduates during the quarter.

Figure 2 illustrates the data in Table 8 pertaining to RO2. Trend lines show changes in students' perception of tolerance of sexual assault in control and treatment groups. The mean for each quarter was recorded in Table 8 along with the sample and population sizes. The means were plotted on a timeline using Microsoft ® Excel and a regression line added to the plot. Segmenting the regression line for the treatment group at the date the new curriculum was implemented (FY16-Q2) allows a comparison of trends before and after implementation. Both control and treatment groups are plotted on

the same timeline for comparison. Changes in the slope of the trend lines represent changes in student perceptions.

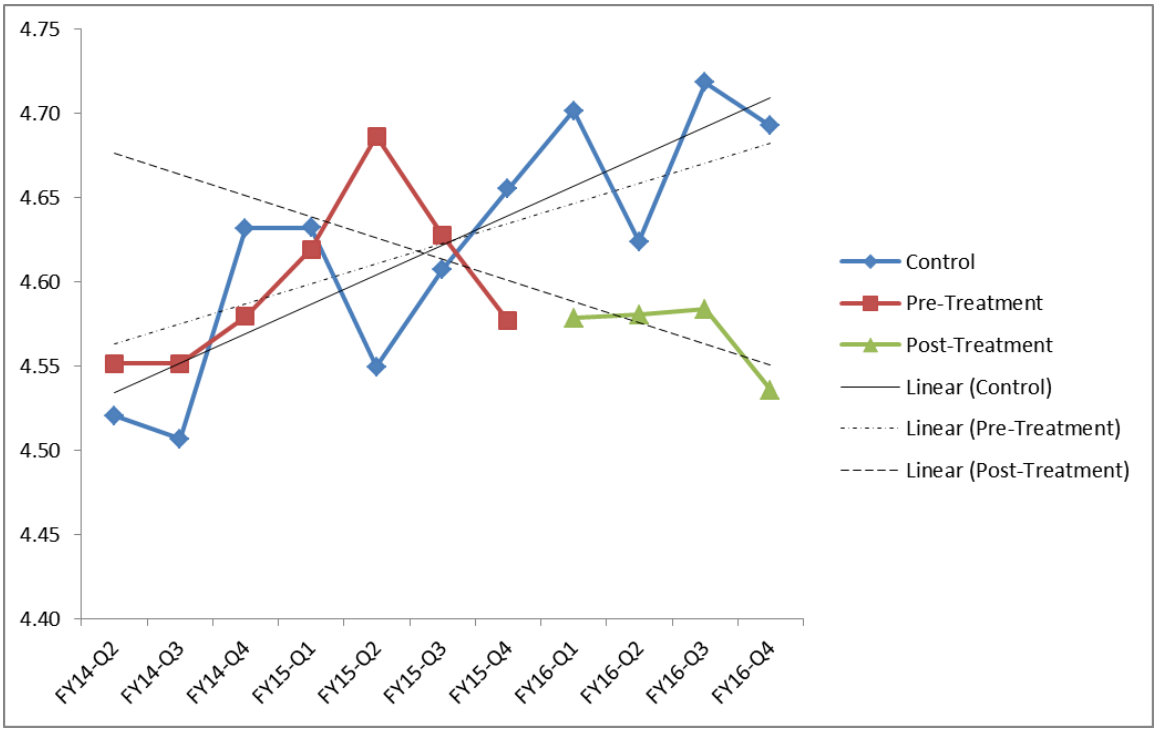

Figure 2. Trend line analysis training-climate survey items 12, 13, and 14.

Trend line analysis illustrates variations in response distributions for items 12, 13 and 14 over time as the curriculum changed in the treatment group versus the control group.

Regression of the control group data shows a consistent, but slightly positive trend ($y = .017x + 4.54$). The control group has a coefficient of determination ($r^2 = .63$) and a corresponding correlation ($r = .81$) indicating a high correlation (Cumming, 2012) to the linear regression model in Figure 2 and a positive trend.

The time series is for the treatment group is interrupted at FY16-Q1 when the new curriculum was implemented. The regression analysis of the treatment group is segmented into the pre-treatment and post-treatment observations. Simple linear regression on each side of this dividing line was analyzed. The pre-treatment data has a positive trend ($y = .01x + 4.55$) however, the data is not well organized, evidenced by

the coefficient of determination for the observations ($r^2 = .28$) and corresponding correlation ($r = .53$) indicating a moderate correlation (Cumming, 2012) to the regression line and a positive trend. Post-treatment observations show a negative trend ($y = -.01x + 4.69$). The data is well organized having a coefficient of determination ($r^2 = .50$) and a corresponding correlation ($r = -.71$) indicating a high correlation (Cumming, 2012) to linear regression model along with a negative trend. A visual inspection of the slope of the trend lines show a moderately defined positive trend prior to the intervention, and a well-defined negative trend after the intervention.

Research Objective Three

The purpose of RO3 is to describe how perceptions of organizational tolerance of sexual harassment vary over time. The scale that measures organizational tolerance of sexual harassment combines training-climate survey items 12, 13, and 14. The data in Table 9 describes RO3: Namely, to determine students' reaction to the scenario-based SAPR training. The data in Table 9 answers RO3. It illustrates the change in students' perception of tolerance of sexual harassment.

Table 9

Response Distribution for Perceived Tolerance of Sexual Harassment Scale

Fiscal Year-Quarter	Control				Treatment			
	M	*SD*	*n*	N_p	*M*	*SD*	*n*	N_p
FY14-Q2	4.66	.10	387	7,696	4.61	.12	870	7,028
FY14-Q3	4.66	.11	315	8,204	4.67	.09	870	9,702
FY14-Q4	4.69	.09	852	5,112	4.66	.08	1283	6,830
FY15-Q1	4.7	.09	251	5,619	4.67	.12	585	6,537
FY15-Q2	4.67	.04	210	5,146	4.73	.08	516	6,780
FY15-Q3	4.65	.09	229	6,522	4.69	.08	473	5,943
FY15-Q4	4.68	.05	223	6,485	4.61	.09	336	4,196
FY16-Q1	4.73	.06	228	5,837	4.65	.11	381	6,428
FY16-Q2	4.66	.08	234	5,256	4.63	.08	420	7,004
FY16-Q3	4.77	.03	227	7,175	4.63	.13	504	7,455
FY16-Q4	4.73	.04	222	7,726	4.61	.06	460	6,968

Note. Fiscal Year Quarter identifies the fiscal quarter the surveys were administered. SA is the percentage of strongly agree responses for the item, A is the percentage of agree responses for the item, N is the percentage of neither agree nor disagree responses for the item., D is the percentage of disagree responses for the item., SD is the percentage of strongly disagree responses for the item. *n* is the number of surveys returned for the fiscal quarter. N_p is the student population determined by graduates during the quarter.

Figure 3 illustrates the data in Table 9 pertaining to RO3. It shows the change in students' perception of tolerance of sexual harassment. The mean for each quarter is recorded in Table 9 along with the sample and population sizes. The means are plotted on a timeline using Microsoft ® Excel and a regression line added to the plot. Segmenting the regression line for the treatment group at the date the new curriculum was implemented (FY16-Q2) allows a comparison of trends before and after implementation. Both control and treatment groups are plotted on the same timeline for

comparison. Changes in the slope of the trend lines represent changes in student perceptions.

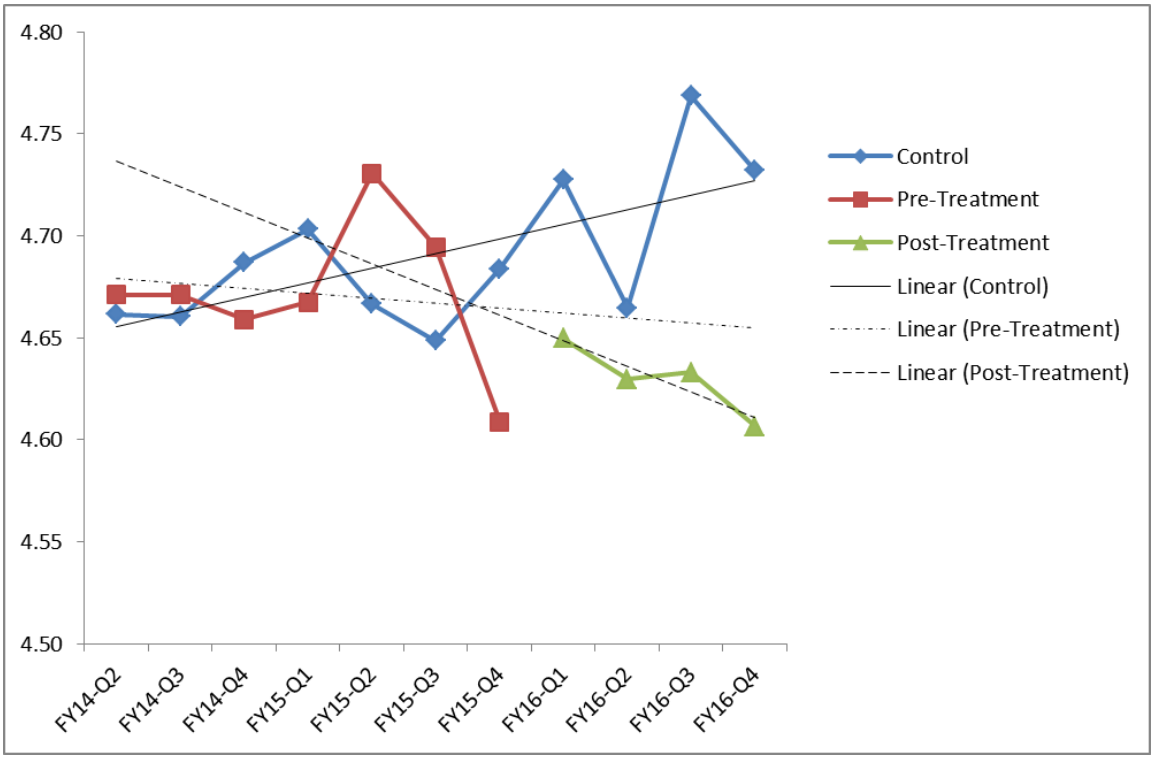

Figure 3. Trend line analysis training-climate survey items 10, and 11.

Trend line analysis illustrates variations in response distributions for items 12, 13 and 14 over time as the curriculum changed in the treatment group versus the control group.

Regression of the control group data shows a consistent and slightly positive trend ($y = .013x + 4.65$). The coefficient of determination for the control group ($r^2 = .31$) and its corresponding correlation ($r = .63$) indicates a moderate correlation (Cumming, 2012) to the linear regression model in Figure 3 and a positive trend.

The time series for the treatment group is interrupted at FY16-Q1 when the new curriculum was implemented. The regression analysis of the treatment group is segmented into the pre-treatment and post-treatment observations. Simple linear regression on each side of this dividing line is analyzed. The pre-treatment data has a negative trend ($y = -.004x + 4.63$). However, the data is not well organized, evident

by the weak coefficient of determination for the observations ($r^2 = .02$) and corresponding *r* value ($r = -.14$) indicating little if any correlation (Cumming, 2012) to the regression line. Post-treatment observations show a very strong coefficient of determination ($r^2 = .84$) and a corresponding correlation ($r = -.92$) indicating a very high correlation to the regression line (Cumming, 2012) and a negative trend ($y = .004x + 4.53$). A visual inspection of the slope of the trend lines shows a weakly defined negative trend prior to the intervention and a very well defined, and slightly more negative, trend after the intervention.

Research Objective Four

The purpose of RO4 is to describe how perceptions of organizational tolerance of behaviors associated with unprofessional relationships vary over time. The scale that measures organizational tolerance of unprofessional relationships combines training-climate survey items 3, 7, 8, and 9. The data in Table 10 describes RO4: It illustrates the change in students' perception of tolerance of unprofessional relationships.

Table 10

Response Distribution for Perceived Tolerance of Unprofessional Relationships Scale

Fiscal Year-Quarter	Control				Treatment			
	M	*SD*	*n*	N_p	*M*	*SD*	*n*	N_p
FY14-Q2	4.59	.12	387	7,696	4.61	.12	870	7,028
FY14-Q3	4.61	.10	315	8,204	4.61	.12	870	9,702
FY14-Q4	4.63	.10	852	5,112	4.61	.11	1,283	6,830
FY15-Q1	4.63	.12	251	5,619	4.64	.12	585	6,537
FY15-Q2	4.62	.12	210	5,146	4.67	.08	516	6,780
FY15-Q3	4.64	.06	229	6,522	4.64	.09	473	5,943
FY15-Q4	4.63	.09	223	6,485	4.54	.13	336	4,196
FY16-Q1	4.73	.04	228	5,837	4.60	.13	381	6,428
FY16-Q2	4.66	.09	234	5,256	4.51	.18	420	7,004
FY16-Q3	4.73	.08	227	7,175	4.61	.10	504	7,455
FY16-Q4	4.73	.06	222	7,726	4.55	.12	460	6,968

Note. Fiscal Year Quarter identifies the fiscal quarter the surveys were administered. SA is the percentage of strongly agree responses for the item, A is the percentage of agree responses for the item, N is the percentage of neither agree nor disagree responses for the item., D is the percentage of disagree responses for the item., SD is the percentage of strongly disagree responses for the item. *n* is the number of surveys returned for the fiscal quarter. N_p is the student population determined by graduates during the quarter.

Figure 4 illustrates the data in Table 6 pertaining to RO4. It shows the change in students' perception of tolerance of unprofessional relationships. The mean for each quarter is recorded in Table 10 along with the sample and population sizes. The means are plotted on a timeline using Microsoft ® Excel and a regression line added to the plot. Segmenting the regression line for the treatment group at the date the new curriculum

was implemented (FY16-Q2) allows a comparison of trends before and after implementation. Both control and treatment groups were plotted on the same timeline for comparison. Changes in the slope of the trend lines represent changes in student perceptions.

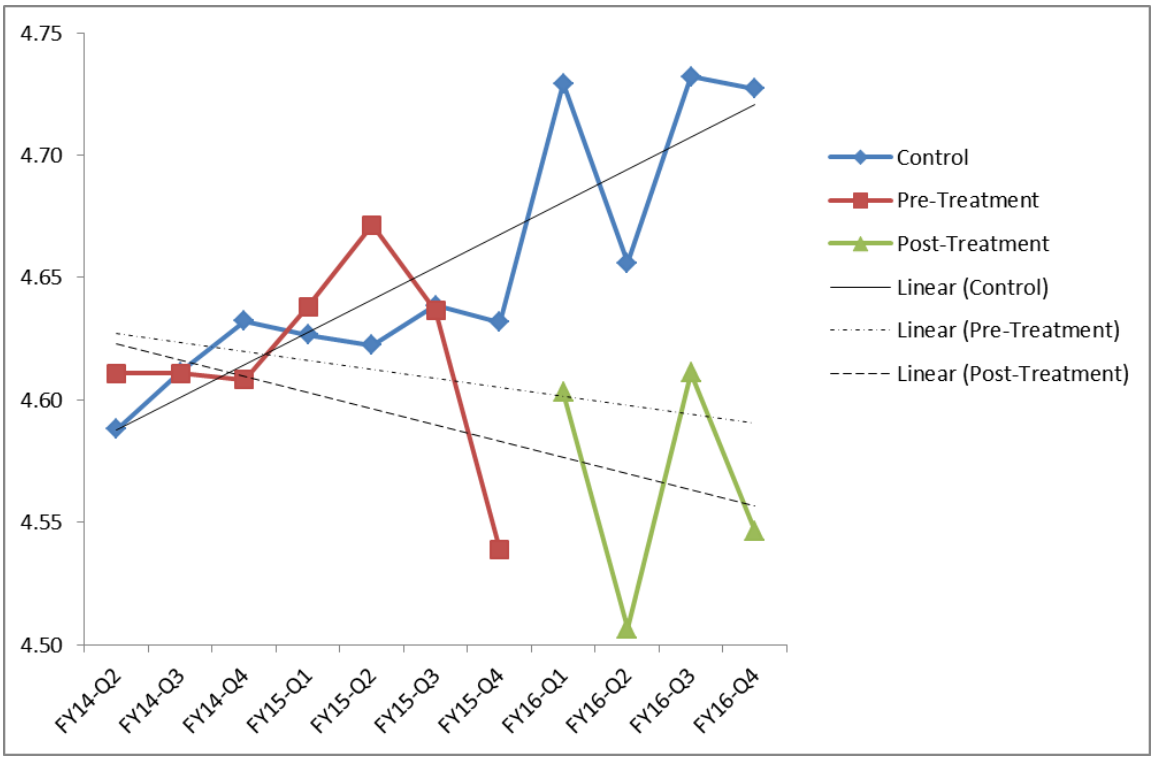

Figure 4. Trend line analysis training-climate survey items 8, and 9.

Trend line analysis illustrates variations in response distributions for items 12, 13 and 14 over time as the curriculum changed in the treatment group versus the control group.

Regression of the control group data shows a consistent positive trend ($y = .013x + 4.57$). The coefficient of determination for the control group ($r^2 = .74$) and the corresponding correlation ($r = .86$) indicates a high correlation to the linear regression model in Figure 4, and a positive trend.

The time series is for the treatment group is interrupted at FY16-Q1 when the new curriculum was implemented. The regression analysis of the treatment group was segmented into the pre-treatment and post-treatment observations. Simple linear

regression on each side of this dividing line was analyzed. The pretreatment data shows a negative trend ($y = -.004x + 4.63$). However, the data is not well organized, evident by the weak coefficient of determination for the pre-treatment observations ($r^2 = .04$) with a corresponding *r* value ($r = -.19$). Post-treatment observations depict a negative trend ($y = -.007x + 4.63$). Post treatment data is not well organized having a weak coefficient of determination ($r^2 = .005$) with a corresponding correlation ($r = -.17$). A visual inspection of the slope of the trend lines shows a negative trend prior to the intervention and after the intervention. However, both plots show little if any correlation to the linear regression models (Cumming, 2012).

Research Objective Five

The purpose of RO5 is to determine the differences in perception of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationship behaviors correspond to the timeframe of the SAPR curriculum change. The scale that measures organizational climate in response to the scenario-based SAPR training combines training-climate survey items 3, 7, 8, 9, 10, 11, 12, 13, and 14. The data in Table 11 answers RO5.

Table 11

Response Distribution for perceived tolerance of Training Climate

Fiscal Year-Quarter	Control				Treatment			
	M	*SD*	*n*	N_p	*M*	*SD*	*n*	N_p
FY14-Q2	4.58	.11	387	7,696	4.61	.12	870	7,028
FY14-Q3	4.59	.12	315	8,204	4.60	.10	870	9,702
FY14-Q4	4.64	.08	852	5,112	4.61	.08	1283	6,830
FY15-Q1	4.65	.09	251	5,619	4.64	.09	585	6,537
FY15-Q2	4.61	.09	210	5,146	4.69	.06	516	6,780
FY15-Q3	4.63	.05	229	6,522	4.65	.07	473	5,943
FY15-Q4	4.65	.06	223	6,485	4.57	.09	336	4,196
FY16-Q1	4.72	.04	228	5,837	4.61	.10	381	6,428
FY16-Q2	4.65	.07	234	5,256	4.56	.13	420	7,004
FY16-Q3	4.74	.06	227	7,175	4.61	.08	504	7,455
FY16-Q4	4.73	.06	222	7,726	4.55	.12	460	6,968

Note. Fiscal Year Quarter identifies the fiscal quarter the surveys were administered. SA is the percentage of strongly agree responses for the item, A is the percentage of agree responses for the item, N is the percentage of neither agree nor disagree responses for the item., D is the percentage of disagree responses for the item., SD is the percentage of strongly disagree responses for the item. *n* is the number of surveys returned for the fiscal quarter. N_p is the student population determined by graduates during the quarter.

Figure 5 illustrates the data in Table 11 pertaining to RO5. It shows the change in students' perception of the training climate because of enhanced SAPR curriculum. The mean for each quarter was recorded in Table 11 along with the sample and population sizes. The means were plotted on a timeline using Microsoft ® Excel and a regression line added to the plot. Segmenting the regression line for the treatment group at the date the new curriculum was implemented (FY16-Q2) allows a comparison of trends before and after implementation. Both control and treatment groups were plotted on the same

timeline for comparison. Changes in the slope of the trend lines represent changes in student perceptions.

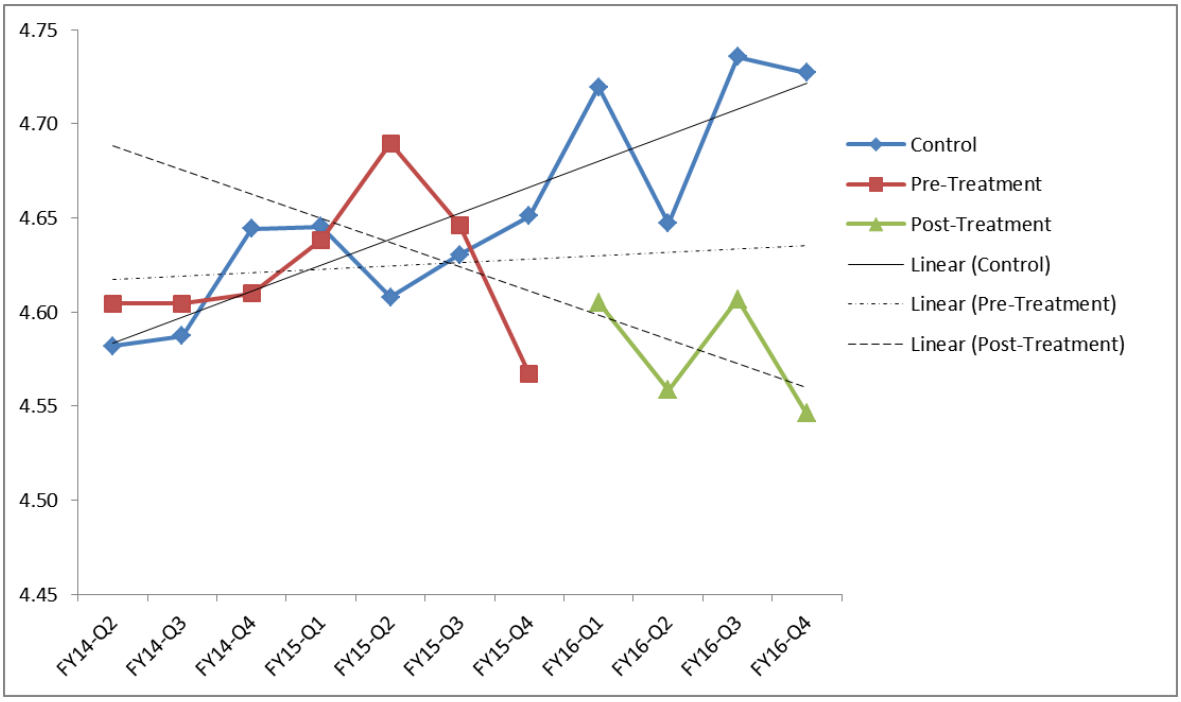

Figure 5. Trend line analysis training-climate survey items 3, 7, 8, 9, 10, 11, 12, 13, and 14.

Trend line analysis illustrates variations in response distributions for items 12, 13 and 14 over time as the curriculum changed in the treatment group versus the control group.

The data in Table 11 answers RO5. Regression of the control group data shows a consistent, but slightly positive trend ($y = .013x + 4.57$). The coefficient of determination for the control group ($r^2 = .67$) with a corresponding correlation ($r = .85$) indicates a high correlation (Cumming, 2012) to the linear regression model in Figure 5 and a positive trend.

The time series for the treatment group is interrupted at FY16-Q1 when the new curriculum was implemented. The regression analysis of the treatment group is segmented (Wagner et al., 2002) into the pre-treatment and post-treatment observations. Simple linear regression on each side of this dividing line was analyzed. The pre-

treatment observations show a slight positive trend ($y = .002x + 4.62$). However, the data is not well organized, evident by the weak coefficient of determination for the observations ($r^2 = .04$) and corresponding *r* value ($r = .10$) indicates little if any correlation (Cumming, 2012) to the linear regression model. The post-treatment observations reflect a negative trend ($y = -.03x + 4.70$), and the post-treatment coefficient of determination ($r^2 = .004$) and corresponding correlation ($r = -.52$) show a moderate correlation (Cumming, 2012) to the regression model. A visual inspection of the slope of the trend lines depicts a weakly defined positive trend prior to the intervention and a moderate defined negative trend after the intervention.

Chapter Summary

The data collected via the survey instruments was charted and the results of the statistical tests and time series analysis were described. The results of the *t*-test measuring students' reaction to the curriculum did not show a statistically significant difference between the population samples receiving the original and the revised curriculum. Trend line analysis for student's perception of organizational tolerance of sexual assault showed a well-defined, but slight negative trend for the experimental group in contrast to a less well defined positive trend for the control group. The trend line analysis for student's perception of organizational tolerance of sexual harassment showed a very well-defined negative trend for the experimental group in contrast with a moderately defined positive trend for the control group. The trend line analysis for students' perception of organizational tolerance for unprofessional relationships showed a poorly defined negative trend for the experimental group in contrast with a well-defined positive trend for the control group. The trend line analysis for the students' perception

of the overall training climate showed a moderately defined negative trend for the experimental group in contrast with a well-defined positive trend for the control group.

CHAPTER V – FINDINGS, CONCLUSIONS, AND RECCOMENDATIONS

The outcomes of the research were determined by the data used to measure the research objectives and the design of the study. The research objectives were achieved using archival data, according to the research plan in Chapter III. The analysis of the data revealed outcomes that were not predicted in the literature.

Summary of the Study

This study evaluates the Air Force's success in changing organizational culture through applying affective engagement to SAPR training. Air Force leaders directed a shift from awareness training to changing attitudes and values of members (Garamone, 2013). One strategy the Air Force applied at technical training campuses was using emotional engagement to influence desired behaviors (Zhao & Kuh, 2004). This research attempts to answer whether increasing the affective engagement of SAPR curriculum influences organizational culture on Air Force technical training campuses.

The research seeks to measure the efficacy of increasing the affective engagement of the SAPR curriculum by measuring changes in organizational culture on U.S. Air Force campuses. Student surveys measuring reaction to the curriculum are reviewed, as was student surveys measuring perceptions of the training climate. The archival data from these surveys is analyzed to measure the following research objectives (Smith, 2008).

Research Objective One

Research Objective One measures students' reaction to the revised SAPR curriculum. The SAPR curriculum provided to Air Force non-prior service technical training students was revised based on current literature regarding sexual assault

prevention (Holland et al., 2014). Key elements of the revised curriculum include shedding light on the link between alcohol use, hypermasculinity, and sexual assault (Corprew et al., 2014; Parkhill & Abbey, 2008). The SAPR curriculum was presented to Air Force technical training students in large classes of 45 to 150 students soon after arriving from BMT. Delivery methods that maximized emotional engagement were supported by literature (Bae et al., 2014; Zhao & Kuh, 2004). The students in the samples selected are representative of the overall population of Air Force non-prior service students attending their first technical training courses after BMT. Operationalized measurements assess performance aligned to the goals and objectives of the SAPR training (Vance, 2010). The planned behavior survey measures attitudes, control beliefs, and social norms (Fishbein & Ajzen, 2010) concerning behaviors linked to sexual assault prevention. Data from population samples that received the previous curriculum were compared to Likert scale data from population samples that received the revised curriculum. This reanalysis of archival data provides the researcher a posttest-only design with nonequivalent groups (Shadish et al., 2002). Survey scale means are analyzed using an independent samples *t*-test (Field, 2013). The objective is to determine whether student's reactions to the revised SAPR curriculum showed significant improvement over the previous format.

Findings

The data from the planned behavior survey does not show a statistically significant change in students' reactions to the curriculum. Changes in the overall Likert scale measuring planned behavior were not statistically significant between the samples of the population receiving the original and revised curriculum. However, subscales of

the planned behavior survey show significant differences concerning attitudes toward consent, and behaviors on the continuum of harm. The subscale results indicated attitudes relating to consent and continuum of harm behaviors to sexual assault were less favorable in the population sample that received the revised curriculum (Cameron-Lewis & Allen, 2013; U.S. Department of Defense, 2014a).

Conclusions

Changing the format of the curriculum did not correlate with a significant change in students' planned behavior between the groups. However, data from the subscale on mutual consent shows a statistically significant decline when the revised materials were used; as did data from the continuum of harm scale. The declines may reflect deficiencies in the training materials that still needs to be addressed. One cannot rule out the possibility that external factors influenced the outcome (Shadish et al., 2002), although unlikely because data was collected from several training groups at diverse locations. Another explanation points out these same students had recently received similar SAPR training only days before at BMT. It is possible students are feeling overwhelmed with a sudden emphasis on sexual assault prevention education. This reaction is consistent with literature suggesting young military members are experiencing SAPR fatigue (Desanctis, 2016; Meineke, 2014).

Recommendations

The data and literature suggest delaying training and employing smaller class sizes may improve outcomes. However, the outcome of this study demonstrates changing curriculum, as done in this study, is insufficient to bring about a change in students' planned behavior. The affective engagement methods used in this study to

modify the curriculum included; narrative storytelling (Estes, 2009), engagement with characters (Bae et al., 2014), and humor in safe learning environments (Hoad et al., 2013). The literature supports all these methods to foster emotional engagement and influence behavior. However, the mass briefing format used in the classes may not be optimal for creating an emotional connection (Beattie & Thiele, 2016). Therefore, the Air Force could consider changing the training venue to a small group setting that would allow for greater interaction with peer influencers (Dupain & Lombardi, 2014) and the characters in the stories. The timing of the training should be reassessed; students setting through a series of mass briefings, often within hours of arriving by bus from BMT, is not conducive to building emotional engagement, and may further add to the students' feeling of SAPR fatigue (Meineke, 2014). The literature states, men may not find SAPR training relevant if they perceive they are being consistently cast in the role of a rapist (Newlands & O'Donohue, 2016; Parkhill & Abbey, 2008). This may lead to males attending the training feeling alienated or disaffected by the message.

The data and the literature suggest delaying the training and reducing the class size should make this element of SAPR training more effective. Delaying the training from immediately after BMT, where SAPR topics are extensively discussed, to a few weeks later may reduce feelings of SAPR fatigue (Meineke, 2014). Reducing the size of training classes should help create the emotional connection needed to affect behavior. The training should place greater emphasis on the importance of obtaining mutual consent, and the detrimental influence of behaviors on the continuum of harm. Employing positive psychology for proactive prevention of sexual assault (Wang & Ku, 2010) may prevent alienating the male population during SAPR training.

Research Objective Two

Research Objective Two assesses the changes in organizational tolerance of sexual assault over time. Reducing sexual assault is a growing concern within the military as leaders realize the impact it has on human capital and long-term costs to the nation (Hankin et al., 1999; Scully, 2013). Air Force training students, like college students, are a particularly impressionable population (AETC, 2012; Potter & Stapleton, 2012). To monitor the organizational climate, training groups periodically sample students' perceptions of the training environment (AETC, 2015b). One scale of the training-climate survey measures students' perception of organizational tolerance of sexual assault. Training group evaluators brief Likert scale data to commanders providing a snapshot of the training climate for early detection of problems within the culture (Tabaghdehi et al., 2015). The data is reported to headquarters Second Air Force for trend analysis. The archival data from the training-climate survey was analyzed as a time series with control and experimental groups to illustrate how perceptions vary over time (Devine, 2003; Goodwin, 2010). This research plots the survey results as an interrupted time series covering a period of 11 quarters; spanning the time when the curriculum was fielded (Shadish et al., 2002). This data describes how perceptions of organizational tolerance of sexual assault vary over time.

Findings

The time series data collected by the survey showed a positive trend having a good fit to the regression line for the control group. This analysis shows the students' perception of the organizational climate is diminishing tolerance for sexual assault among their peers and leaders. The experimental group, on the other hand, has a moderate fit to

the regression line before the curriculum changed. However, after the curriculum changed, the data shows an increased tolerance for sexual assault and a good fit to the regression line.

The slope of the regression line before the curriculum changed was close to that of the control group. However, the experimental group shows a profound discontinuity in the slope of the regression lines where the curriculum changed. Since the correlations to the regression lines were moderate to good, the researcher cannot discount the results. Therefore, students' perception in the experimental group was that peers and leaders are becoming more tolerant of sexual assault under the revised curriculum.

Conclusions

The data shows the groups receiving the revised SAPR training do not perform as well as the control groups. Therefore, either the revised training is not effective, or there are other unknown influences on the results. Although correlation does not prove causation, likewise it cannot disprove causation. Nor can correlation disprove alternate causes (Shadish et al., 2002).

Increased tolerance of sexual assault is not the desired result of SAPR education (Holland et al., 2014). However, since the results show the revised training is correlated to negative trend over time, the researcher must reject the assumption that enhanced SAPR training would have no impact on student perceptions of organizational tolerance of sexual assault.

The interrupted time series model used is a strong quasi-experimental design for examining the effects of interventions over time (DeGue, 2014; Wagner et al., 2002). One known vulnerability of the time series design is the potential for the outcome to be

influenced by external factors (Shadish et al., 2002). The use of a control group, in this case, helps isolate the effects of external factors that may affect outcomes in the data (Wagner et al., 2002).

Recommendations

The student's downward trending perceptions of sexual assault tolerance in the experimental groups warrants conducting a follow-up study to identify the causes. An explanatory sequential mixed-methods study may explain the results of the data collected in the training surveys (Creswell & Plano Clark, 2011). This research approach would help determine if the curriculum changes influenced the results of the survey data.

Research Objective Three

Research Objective Three assesses the changes in organizational tolerance of sexual harassment over time. The Air Force is concerned with reducing sexual harassment due to its impact on human capital resources and links to sexual assault behaviors (Antecol & Cobb-Clark, 2001; DeGue, 2014). The literature suggests the population of Air Force non-prior service students are in an emerging adulthood age that is identified with increased risk of offending and being victims of sexual harassment (Clodfelter et al., 2010) and that sexual harassment creates a hostile learning environment (Weizel, 2012). This research objective is assessed in the same manner as research objective two, by performing a secondary analysis of archived training-climate survey data. As with research objective two, the time series analysis is employed using an experimental group and a control group to isolate the influence of external factors (Shadish et al., 2002).

To monitor the organizational climate, training groups periodically sample students' perceptions of the training environment (AETC, 2015b). One scale of the training-climate survey measures students' perception of organizational tolerance of sexual harassment. Training group commanders look to the Likert scale data to provide a snapshot of the training climate for early detection of sexual harassment problems within the training culture (Tabaghdehi et al., 2015). The data was reported to headquarters Second Air Force for trend analysis. The archival data from the training-climate survey was analyzed as an interrupted time series with control and experimental groups to isolate effects of external factors (Devine, 2003; Goodwin, 2010). Time series analysis derived from the training-climate survey illustrates how perceptions of organizational tolerance of sexual harassment vary over time.

Findings

The control group's time series data depicts a positive trend having a good correlation to the regression line. The experimental group had little to no correlation to the regression line until the time of the curriculum change. At that point, the data reflect a negative trend having a very good correlation to the regression line. The weak correlation of experimental group's pretreatment data to the regression line, indicating the data was occurring in a largely random pattern, disallows the determination of a regression discontinuity at the point where the curriculum changed. Therefore, the research does not refute the assumption that revising the curriculum would have no effect on students' perception of organizational tolerance of sexual harassment.

Conclusions

Although the slopes of the trend lines show a more negative trend after the curriculum changed, there is no regression discontinuity at that point. The data does not indicate the trend changed direction since it had no defined direction initially. The largely random pattern in the experimental group's data before the treatment started suggests the slope of the trend line did not change at the time of the intervention. Therefore, the results of the data are inconclusive as to whether enhanced SAPR training had any impact on students' perception of organizational tolerance of sexual harassment. Increased tolerance of sexual harassment is not the desired result of SAPR education (Holland et al., 2014). However, since the results show the revised training is not correlated to a regression discontinuity at the point in time where the curriculum changed, the researcher cannot reject the assumption that enhanced SAPR training would have no impact on student perceptions of organizational tolerance of sexual harassment.

Recommendations

In light of the results, there is no data suggesting the revised SAPR training had any measurable impact on the training climate for the experimental group. Although the data is inconclusive, the literature is consistent in identifying the need for sexual harassment prevention training. Sexual harassment behaviors are included in the continuum of harm because, an environment that tolerates sexual harassment is more tolerant of sexual assault (U.S. Department of Defense, 2013a) Sexual harassment erodes social norms and poisons organizational cultures. Avina and O'Donohue (2002) suggest sexual harassment represents a violation of social norms, making more egregious

violations of the social norm possible. For these reasons, the DoD (2014a) stated a need for change to a culture of dignity and respect as a cultural imperative.

The data from this study does not support continued use of the revised SAPR training curriculum. Therefore, the recommendation is to discontinue the revised SAPR training modules addressing sexual harassment and replace them with more effective course materials. Future training materials should continue to address reducing sexual harassment to foster a culture of dignity and respect.

Although the data from the experimental group does not show a regression discontinuity at the time the curriculum changed, it does show a discontinuity in the second quarter of fiscal year 2015. The Air Force should conduct a review of archived data to determine what might explain the acute downturn shown for organizational tolerance of sexual harassment. A mixed-methods study may explain this downturn in the experimental group data (Creswell & Plano Clark, 2011).

Research Objective Four

Research objective four assesses the changes in organizational tolerance of unprofessional relationships over time. Unprofessional relationships are a form of misconduct unique to military organizations. Air Force instructions (U.S. Air Force, 1999) define unprofessional relationships as on or off-duty relationships that could reasonably result in the appearance of favoritism, misuse of one's office or position. Unprofessional relationships are characterized by a power imbalance between the members involved (AETC, 2015a). Forming a relationship with a member where one has rank or positional authority over the other is detrimental to good order and discipline and is punishable under the Uniform Code of Military Justice (Joint Service Committee on

Military Justice, 2012). This research objective was assessed in the same manner as research objectives two and three, by performing a secondary analysis of archived training-climate survey data. As with research objectives two and three, the time series analysis is employed using an experimental group and a control group to isolate the influence of external factors (Shadish et al., 2002).

Findings

Time series data derived from the training climate survey illustrates how perceptions of organizational tolerance of unprofessional relationships change over time. The data from the control group depicts a positive trend having a good correlation to the regression line. The experimental group's data showed little if any correlation to the regression line either before or after the curriculum changed. A nearly random pattern of data from the experimental group continued after the point where the curriculum changed. Without at least a moderate correlation to the regression line, it is not possible to determine if a regression discontinuity exists at the point where the curriculum changed.

Conclusions

The control group experienced a positive trend with a good correlation to the regression line. The experimental group could not be defined as a trend because the fit to the regression line was almost non-existent either before, or after, the curriculum changed. The trend analysis does not show strong regression discontinuity at the point where the curriculum changed. Therefore, the results of the trend line analysis (Phillips & Phillips, 2015) cannot refute the assumption that enhanced SAPR training had no

impact on students perceptions of organizational tolerance of unprofessional relationships.

Recommendations

Military commanders at all levels understand the importance of detecting perceptions of organizational tolerance of unprofessional relationships because of the negative influence these relationships can have on good order and discipline (AETC, 2015a). When institutional safeguards to detect and prevent unprofessional relationships are allowed to fail, the result can be a toxic culture that turns a blind eye to egregious behavior (Risen, 2013). Therefore, it is essential to train students to recognize and report unprofessional relationships to prevent toxic leadership patterns that exploit the imbalance of power present in military training environments (U.S. Air Force, 1999).

In the case of this study, there is no evidence suggesting the revised training had an effect on student's perception of organizational tolerance of unprofessional relationships. However, literature and command priorities emphasize the importance of preventing unprofessional relationships. Therefore, the researcher recommends further revising SAPR training materials to provide greater emphasis on recognizing and reporting unprofessional relationships. A qualitative study to identify possible training objectives could help the Air Force create more relevant training materials technical training students.

Research Objective Five

Research objective five assesses the changes in organizational culture with respect to sexual misconduct over time. The objective determines the differences in perception of organizational tolerance of sexual assault, sexual harassment, and unprofessional

relationship behaviors in the manner previously described for research objectives two, three and four. The research employs a secondary analysis of archived training-climate survey data.

Training groups periodically sample students' perceptions of the training environment to monitor the organizational climate (AETC, 2015b). The scales of the training climate survey measures students' perception of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationships. In this study, the archival data from the training climate survey is analyzed as a time series with control and experimental groups to illustrate how perceptions vary over time (Devine, 2003; Goodwin, 2010). The time series data reflects changes in perceptions of the training environment with respect to sexual assault, sexual harassment, and unprofessional relationships.

Findings

The data for the control group reflects a positive trend that has a good correlation to the regression line. The experimental group shows little, if any, correlation to the regression line before the curriculum changed. After the curriculum changed, the data reflect a negative trend having a moderate correlation to the regression line. The almost nonexistent correlation of experimental group's pretreatment data to the regression line disallows the determination of a regression discontinuity at the point where the curriculum changed. Therefore, the research does not refute the assumption that revising the curriculum would have no effect on students' perception of organizational culture.

Conclusions

As with research objective, two, three and four, the time series analysis employed a control group to isolate the influence of external factors (Shadish et al., 2002). The control group experienced a positive outcome that is a good correlation to the regression line. The experimental group, on the other hand, was not identified as a trend because the fit to the regression line was almost non-existent either before the curriculum changed. The trend analysis does not show strong regression discontinuity at the point where the curriculum changed. Therefore, the results of the trend line analysis (J. J. Phillips & Phillips, 2015) cannot refute the assumption that enhanced SAPR training had no impact on students perceptions of organizational culture.

The findings of the data show there is no significant improvement in the experimental group over the control group. On the contrary, the data appears to contradict assumptions that implementing a curriculum predicated on emotional engagement (Wang & Ku, 2010) would measurably reduce attitudes and beliefs linked to sexual assault behaviors (DeGue et al., 2012). Furthermore, the data appears to contradict assumptions that changes in attitudes and values would result in measurable changes in perceptions of organizational tolerance of sexual assault, sexual harassment, and unprofessional relationships. The results of the study suggest, there is no impact on the organizational culture of the technical training enterprise because of SAPR training in the affective domain; contrary to the literature on the subject.

Recommendations

The data demonstrates changing the only curriculum, as done in this study, does not bring about a change in students' perception of the organizational climate. The data

and the literature suggest a single session of SAPR training does not result in a lasting change in attitudes toward sexual assault prevention (Anderson & Whiston, 2005). These attitudes and beliefs form the foundations of organizational culture (Watkins & Leigh, 2010). Recommendations to improve the effectiveness of SAPR training include delaying the training to reduce SAPR fatigue, reducing class sizes, eliminating some training modules and replacing others, employing positive psychology to show *what right looks like* and conducting additional explanatory research. In addition to these recommendations, the data derived from this research underscores the need for ongoing evaluation and quality improvement processes in SAPR education and training (Gedney et al., 2015).

Implications for Human Capital Development

Practitioners in human capital development are reminded of the difficulties in changing organizational cultures (Watkins & Leigh, 2010). The affective domain in which cultural values reside is ill defined and difficult to measure (Miller, 2010). In addition to training curriculum, the right leadership must be in place to affect a change in organizational culture (Kotter, 2011). Furthermore, organizations are complex organisms made of human beings (Holton & Swanson, 2009). Although the literature has many recommendations for moving sexual assault prevention education away from awareness training and addressing beliefs and attitudes (DeGue, 2014), there are few examples of measured success in this endeavor. This research points to the need for further research and experimentation into methods of delivering and measuring affective education.

Limitations

All research has limitations, parts of the subject the researcher could not assess or were beyond the researcher's control (Roberts, 2010). This research is limited by the inability of the researcher to contact subjects outside of the Air Force's major technical training bases. Different results may be obtained at Air Force flying training or other service training bases. Another limitation of the study is the available time to conduct research. A longitudinal study, though time-consuming, may help to determine if changes made in the training environment have lasting effects. Although the design of the study includes a control group to improve external validity, the use of an interrupted time series is always susceptible to external influences that can confound the results (Shadish et al., 2002). The use of archival data, in the form of the training climate survey, limits the type, frequency, and sample size of measurement. Furthermore, archival data limits the researcher to measuring an outcome rather than a more deliberate measure of the process (Shadish et al., 2002) A more deliberate survey used only for the purpose of the research would not have these limitations.

Recommendations for Further Research

The findings of the data show there is no significant improvement in the experimental group over the control group. The data from the training climate surveys reflect a positive trend for the control group over 11 quarters, which fits well with the regression line. This trend contrasts with the experimental group, which reflects no positive trend. This result indicates the possible influence of co-interventions in the control group that was unknown to the researcher (Wagner et al., 2002). Therefore, the Air Force should consider conducting a sequential explanatory, mixed-methods study to

explain the possible influence of possible co-interventions on the control population samples. A sequential study may identify the message students are receiving through external sources including other programs, and current social norms that may have influenced the results of the time series.

Although not part of this study, anecdotal comments collected by the planned behavior survey, and comments from Air Force senior leaders suggest the timing of the training is not optimal. One recommendation is to review student comments as the basis for a qualitative study to determine the best time and topics for this training. A qualitative assessment could determine students' views on the type, timing, and message of sexual assault prevention, sexual harassment prevention, and unprofessional relationships training they receive. This type of study may help researchers determine if students are receiving the right message at the right time. A qualitative study would present an opportunity to explore the phenomenology of SAPR fatigue discussed in the literature.

Measuring students' planned behavior before and after receiving the enhanced SAPR training using a repeated measures *t*-test would minimize the effects of environmental factors on the student population. Finally, including this study in the meta-analysis of this and other Air Force SAPR training programs may isolate the effects of co-interventions on the non-prior service student population in the Air Force.

APPENDIX A – Planned Behavior Survey

Survey item	Responses						
1. What is your squadron							
2. What is your gender?	Male						Female
3. The Accessions 2.1 scenarios describe situations I, or my friends, might encounter.	Likely	1	2	3	4	5	Unlikely 6
4. Communicating my desire for intimacy with my intended partner will be…	Easy	1	2	3	4	5	Difficult 6
5. Intervening in a situation to prevent sexual assault will be…	Easy	1	2	3	4	5	Difficult 6
6. Most of my friends would not approve of someone using alcohol to get sex.	True	1	2	3	4	5	False 6
7. I expect I will intervene in a situation to prevent a sexual assault.	Likely	1	2	3	4	5	Unlikely 6
8. Most of my friends would not use derogatory language to refer to another's gender.	Agree	1	2	3	4	5	Disagree 6
9. I am confident that I can discuss my intimacy desires with my partner before engaging in sexual activity.	True	1	2	3	4	5	False 6
10. I expect I would intervene if I witnessed someone sexually harassing another person.	Likely	1	2	3	4	5	Unlikely 6
11. My friends would intervene if they knew someone was trying to use alcohol or drugs to make me incapacitated.	Agree	1	2	3	4	5	Disagree 6
12. Fewer sexual assaults occur when people openly communicate their desires for intimacy.	Agree	1	2	3	4	5	Disagree 6
13. Getting consent isn't about making assumptions; it's about both people being on the same page.	Agree	1	2	3	4	5	Disagree 6
14. Most of my friends would discuss what they want and don't want with their intimate partners.	True	1	2	3	4	5	False 6
15. It is OK to insist your partner respect your desires and limits.	True	1	2	3	4	5	False 6
16. By becoming intoxicated, I increase the chances that I will engage in sex without giving/receiving consent.	Agree	1	2	3	4	5	Disagree 6
17. Creating a climate that discourages drunk sex will be…	Beneficial	1	2	3	4	5	Of No Value 6
18. Creating a climate that discourages sexual harassment will be…	Beneficial	1	2	3	4	5	Of No Value 6

Planned behavior survey instrument.

Training-climate survey

Instructions for the survey administrator.

Instructions for the survey administrator

This survey instrument is designed to assess the climate of the training environment including classroom, laboratory, living and social areas. It is important to assure students of the anonymity of their responses. Have course personnel leave the area until the students return the surveys. To ensure trust with the students is maintained, Do not allow course personnel access to completed surveys, to maintain trust with the students. Emphasize that no names or class numbers are to be on the survey.

Students are encouraged to add comments to any rated area regardless of how they rate it. But it is important they add comments to all items rated "Strongly Disagree" or "Disagree." To help ensure we gather comments, make sure students are afforded ample time to write in comments. Do not allow pressure to finish early reduce the opportunity of some to finish.

This survey does not replace student critiques, end-of-course critiques or anonymous drop boxes; nor is it a form of restricted reporting for sexual assault. (Restricted reporting allows victims to confidentially disclose information about the assault to specified individuals and receive medical treatment, counseling, and advocacy without automatically triggering an official investigative process.)

Read the following instructions to the class at the beginning of the survey.

Instructions: This is a survey of the climate in the training environment, including dormitory areas. No names will be collected. We are about to ask some questions about experiences you may have had with sexual assault. This is not a restricted reporting forum – which means we will investigate and potentially prosecuted that anything you tell us. If you are a victim of sexual assault, you are not obligated to report in this survey – you don't have to answer these questions. You have completely confidential reporting options available to you through your installation Sexual Assault Response Coordinator (SARC) at XXX-XXXX and the DoD Safe Helpline at www.safehelpline.com. Mark each statement below with your level of agreement at the right. Please provide comments for any item marked "Strongly disagree" or "Disagree." Continue on back if needed. Return this survey to the survey administrator when complete.

Secure the completed surveys before allowing course personnel into the area.

Figure A1. Sample instructions for survey administrator

Glossary of terms for the training climate survey

Survey administrators provide each student taking the survey with the following list of standardized definitions. Survey designers included the glossary of terms to ensure students understand service-specific definitions of terms used in survey items.

Glossary of Terms

Fraternization. Fraternization is a personal relationship between an officer and an enlisted member that violates the customary bounds of acceptable behavior in the Air Force and prejudices good order and discipline, discredits the armed services, or operates to the personal disgrace or dishonor of the officer involved.

Hazing. Hazing is any conduct whereby a military member or members, regardless of service or rank, without proper authority causes another military member or members, regardless of service or rank, to suffer or be exposed to any activity which is cruel, abusive, humiliating, oppressive, demeaning, or harmful.

Maltraining. Maltraining is any practice not designed to meet a course training objective. Examples of maltraining include but are not limited to using abusive, excessive physical exercise or unnecessarily rearranging the property of an Airman to correct infractions. Any practice for the purpose of inducing an Airman to self-eliminate is considered maltraining.

Maltreatment (physical). Physical maltreatment includes, but is not limited to, poking, hitting, thumping, pushing, grabbing, threats of violence, physical violence, physical intimidation, hazing, or any unnecessary physical contact.

Maltreatment (verbal) Verbal maltreatment is any language that degrades, belittles, demeans, or slanders an individual or group based on color, national origin, race, religion, age, ethnic group, gender, or physical stature. Includes, but is not limited to, (1) the use of profanity and any insinuation of immoral, unethical, illegal, or unprofessional conduct; (2) crude, offensive language in rhymes or prose as memory devices (mnemonics); and/or (3) training tools that contain profane words, offensive language, or inappropriate sexual or gender references. Any language that establishes a hostile environment constitutes and promotes sexual harassment or disrespect to men and/or women.

Reprisal. Reprisal is any act of retaliation.

Professional Relationships. Professional relationships include faculty, staff, trainees, cadets, students, recruiters, recruits, applicants, Recruiter Assistance Program (RAP) personnel, and detachment staff. Personnel in each category are encouraged to communicate freely regarding their careers, classroom performance, duties, and missions. This type of communication enhances performance, morale, and discipline and improves the training environment. At the same time, it preserves proper respect for authority and focuses on the mission.

Unprofessional Relationships. Unprofessional relationships include relationships involving faculty, staff, trainees, cadets, students, recruiters, recruits, applicants, and/or Recruiter Assistance Program (RAP) personnel. Whether pursued on or off duty, relationships are unprofessional when they detract from the authority of superiors or result in (or reasonably create the appearance of) favoritism, misuse of office or position, or the abandonment of organizational goals for personal interests. Unprofessional relationships include relationships between officers; between enlisted members; between officers and enlisted members; between recruiters and recruits, applicants, or RAPpers; between RAPpers and recruits or applicants; and between military personnel and civilian employees or contractor personnel.

Figure A2. Glossary of terms for training-climate survey

Instructions: This is a survey of the climate in the training environment, including dormitory areas. No names will be collected. We are about to ask some questions about experiences you may have had with sexual assault. This is not a restricted reporting forum – which means that anything you tell us will be investigated and potentially prosecuted. If you are a victim of sexual assault, you are not obligated to report in this survey – you don't have to answer these questions. You have completely confidential reporting options available to you through your installation Sexual Assault Response Coordinator (SARC) at XXX-XXXX and the DoD Safe Helpline at www.safehelpline.com. Mark each statement below with your level of agreement at the right. Please provide comments for any item marked "Strongly disagree" or "Disagree." Continue on back if needed. Return this survey to the survey administrator when complete.

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
1. I know several methods for providing student feedback.	SA	A	N	D	SD
2. I feel I can submit a critique at any time and on any subject without the fear of reprisal.	SA	A	N	D	SD
3. I have NOT witnessed or experienced maltreatment or maltraining from instructors, staff or MTLs.	SA	A	N	D	SD
4. Maltreatment & maltraining do not occur within my unit.	SA	A	N	D	SD
5. I can report maltreatment or maltraining without the fear of reprisal.	SA	A	N	D	SD
6. Hazing, bullying or cyber bullying is not tolerated within the culture of my peers.	SA	A	N	D	SD
7. I am confident in my understanding of fraternization and unprofessional relationships.	SA	A	N	D	SD
8. Unprofessional relationships/fraternization (including social media contact) with instructors, MTLs or prior-service students is not tolerated within my leadership's culture.	SA	A	N	D	SD
9. I can report unprofessional relationships/ fraternization without the fear of reprisal.	SA	A	N	D	SD
10. Sexual harassment by instructors, MTLs or prior-service students is not tolerated within my leadership's culture.	SA	A	N	D	SD
11. Student-on-student sexual misconduct/harassment is not tolerated within the culture of my peers.	SA	A	N	D	SD
12. Sexual assault does not occur between NPS students and instructors, MTLs or prior-service students.	SA	A	N	D	SD
13. Student-on-student sexual assault is not tolerated within the culture of my peers.	SA	A	N	D	SD
14. Student-on-student sexual assault does not occur among my peers in the MTF.	SA	A	N	D	SD
15. I know where and how to report sexual harassment, sexual assault and unprofessional relationships anonymously.	SA	A	N	D	SD
16. My chain of command is accessible to me.	SA	A	N	D	SD
Comments:					

Figure A3. Training-climate survey instrument

Note: The survey instrument is provided to the students in paper or electronic format.

APPENDIX B – IRB Approval Letter

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 16090603
PROJECT TITLE: Applying Affective Engagement to Change Organizational Culture: A Secondary Analysis of Sexual Assault Prevention and Reporting Outcomes on U.S. Air Force Technical Training Campuses
PROJECT TYPE: New Project
RESEARCHER(S): Stephen B. Ellis
COLLEGE/DIVISION: College of Science and Technology
DEPARTMENT: Human Capital Development
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 09/07/2016 to 09/06/2017
Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX C – U.S. Air Force Data Approval Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS SECOND AIR FORCE (AETC)

JUL 27 2016

MEMORANDUM FOR MR. STEPHEN ELLIS, PRINCIPLE RESEARCHER

FROM: 2 AF/CC
721 Hangar Rd, Ste 102
Keesler AFB MS 39534-2804

SUBJECT: Letter of Permission to Perform Research

1. Mr. Ellis has proposed conducting research by re-analyzing data collected by the 2 AF Training Climate Survey instituted by the previous Second Air Force Commander in 2013 and the Accessions 2.1 planned behavior survey implemented to provide class feedback. The data he will be analyzing does not contain personally identifiable information. I have determined the proposed research is appropriate in context and is unique to my organization.

2. I approve the use of survey data collected by my organization as described in the attached proposed research methodology.

3. My point of contact on this matter is Mr. Steve Ellis, (228) 376-8661 or e-mail stephen.ellis.8@us.af.mil.

MARK ANTHONY BROWN
Major General, USAF
Commander

Attachment:
Research methodology, July 2016

cc:
AFRL 711 HPW/IR

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