

Development and Psychometric Evaluation of the
Military Suicide Attitudes Questionnaire (MSAQ)

by

Marcus VanSickle

Dissertation submitted to the Faculty of the
Medical and Clinical Psychology Graduate Program
Uniformed Services University of the Health Sciences
In partial fulfillment of the requirements for the degree of
Doctor of Philosophy, 2015

Dissertation Advisor:	Marjan G. Holloway, Ph.D.
Dissertation Chair:	David Krantz, Ph.D.
Dissertation Members:	Eric Getka, Ph.D., CDR Jeff Goodie, Ph.D., CDR Carrie Kennedy, Ph.D.



UNIFORMED SERVICES UNIVERSITY, SCHOOL OF MEDICINE GRADUATE PROGRAMS
Graduate Education Office (A 1045), 4301 Jones Bridge Road, Bethesda, MD 20814



FINAL EXAMINATION/PRIVATE DEFENSE FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE MEDICAL AND CLINICAL PSYCHOLOGY GRADUATE PROGRAM


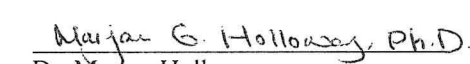

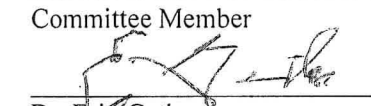

Name of Student: Marcus VanSickle

Date of Examination: May 12, 2015

Time: 8:00am

Place: B3004

DECISION OF EXAMINATION COMMITTEE MEMBERS:

	PASS	FAIL
 _____ Dr. David Krantz DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY Committee Chairperson	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 _____ Dr. Marjan Holloway DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY Dissertation Advisor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 _____ Dr. Jeffrey Goodie DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY Committee Member	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 _____ Dr. Erin Getka Walter Reed National Military Medical Center Committee Member	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 _____ Dr. Carrie Kennedy Marine Corps Embassy Security Group Committee Member	<input checked="" type="checkbox"/>	<input type="checkbox"/>



UNIFORMED SERVICES UNIVERSITY, SCHOOL OF MEDICINE GRADUATE PROGRAMS
Graduate Education Office (A 1045), 4301 Jones Bridge Road, Bethesda, MD 20814



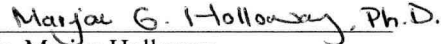
DISSERTATION APPROVAL FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE MEDICAL
AND CLINICAL PSYCHOLOGY GRADUATE PROGRAM


Title of Dissertation: "Development and Psychometric Evaluation of the Military Suicide Attitudes
Questionnaire (MSAQ)"

Name of Candidate: Marcus VanSickle
Doctor of Philosophy Degree
May 12, 2015

DISSERTATION AND ABSTRACT APPROVED:


DATE: 5-12-15
Dr. David Krantz
DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY
Committee Chairperson


5-12-15
Dr. Marjan Holloway
DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY
Dissertation Advisor


12 May 15
Dr. Jeffrey Goodie
DEPARTMENT OF MEDICAL AND CLINICAL PSYCHOLOGY
Committee Member


5-12-15
Dr. Erin Getka
Walter Reed National Military Medical Center
Committee Member


12 MAY 15
Dr. Carrie Kennedy
Marine Corps Embassy Security Group
Committee Member

COPYRIGHT STATEMENT

The author hereby certifies that the use of any copyrighted material in the thesis manuscript entitled: "Development and Psychometric Evaluation of the Military Suicide Attitudes Questionnaire (MSAQ)" is appropriately acknowledged and, beyond brief excerpts, is with the permission of the copyright owner.

A handwritten signature in black ink, appearing to read 'M. VanSickle', is written over a horizontal line.

Marcus R. VanSickle

May 15, 2015

ABSTRACT

Title of Dissertation: Development and Psychometric Evaluation of the Military Suicide
Attitudes Questionnaire (MSAQ)

Marcus VanSickle, M.S., 2015

Directed by: Marjan G. Holloway, Ph.D., Associate Professor, Medical and Clinical
Psychology Department

Background: To date, a culturally-sensitive psychological instrument has not been developed to evaluate military attitudes toward suicide. Understanding military attitudes towards suicide can inform research (e.g., program evaluation studies), clinical practice, and policy on community prevention efforts. **Purpose:** In response to the noted research gap, this dissertation aimed (1) to develop a culturally sensitive attitudinal measure on military suicide, titled, Military Suicide Attitudes Questionnaire (MSAQ), and (2) to evaluate its psychometric properties, using a military sample. **Methods:** The study was completed in two main stages: (1) measurement development; and (2) measurement evaluation. First, a team of military personnel, suicidologists, and researchers assisted with item development for MSAQ. Second, a cross-sectional design was used to evaluate the psychometric properties of the 35-item original MSAQ via an online questionnaire packet. An exploratory factor analysis followed by a confirmatory factor analysis was

conducted; the psychometric properties (i.e., concurrent, discriminant, and incremental validity; test retest reliability) of the newly developed MSAQ measure were also examined. **Results:** A total of 317 individuals met eligibility criteria (i.e., active duty and 18 years of age or older) for the online study and completed the online survey packet. The following 4-factor model (explaining 46.4% of the variance) based on 32-items of MSAQ was identified: (1) *Individual-Based* Rejection versus Acceptance; (2) Psychopathology; (3) *Unit-Based* Acceptance versus Rejection; (4) Immoral. The MSAQ was found to demonstrate high partial validity and reliability over time.

Discussion: The newly developed MSAQ is a promising measure, in need of further examination and replication, while filling a notable gap in the assessment of suicide attitudes within the U.S. military. The MSAQ is now a partially validated psychological instrument that has the potential for future use in advancing suicide prevention program evaluation efforts within the DoD. Overall, gaining knowledge of military attitudes within the community can support military leaders and policy makers to best tailor as well as target DoD anti-stigma campaign resources. Future directions for further validation of the MSAQ are discussed.

Acknowledgements

I would first like to acknowledge the Soldiers, Sailors, Airmen, and Marines who contributed their time and energy to participate in this project. Second, I would like to express my appreciation to my dissertation committee (Dr. Eric Getka, CDR Jeffrey Goodie, CDR Carrie Kennedy, Dr. David Krantz) as well as the subject matter experts (Dr. Michael Anestis, Dr. Peter Gutierrez, and Dr. Thomas Joiner) who contributed their time to this dissertation project. I would also like to express my gratitude to the United States Marine Corps and the United States Navy for giving me a multitude of diverse opportunities over the last 14 years of my life. It is to those Marines and Sailors I have had the pleasure of serving with that I dedicate this work. I would also like to express my sincerest gratitude to Dr. Marjan Holloway for her support, guidance, and mentorship throughout my doctoral education, without it I would not be where I am today. Finally, I would like to express my thanks to the USUHS faculty and military mentors who have given me so much over the years.

TABLE OF CONTENTS

CHAPTER 1: Introduction	11
Public Health Significance of Suicide	11
Suicide Prevention	12
DoD Suicide Prevention Efforts	14
Program Evaluation of DoD Suicide Prevention Efforts and Research Gaps	17
Attitudes	22
Attitudes Toward Suicide	26
Measurement of Attitudes Toward Suicide	27
Empirical Findings on Common Suicide Attitudinal Themes	29
Moral versus Immoral	29
Psychache versus Pathology	30
Acceptance versus Rejection	31
CHAPTER 2: Purpose and Significance of Dissertation	33
CHAPTER 3: Aims and Hypotheses.....	35
Aim 1	35
Aim 2	35
To conduct exploratory and confirmatory factor analyses of the Military Suicide Attitudes Questionnaire (MSAQ) in order to determine the latent structure of the measure.	35
Hypothesis 2.1.	35
Aim 3	35
Specific Aim 3a.	35
Hypothesis 3a.	36
Specific Aim 3b.	36
Hypothesis 3b.	36
Specific Aim 3c.	36
Hypothesis 3c.	36
Specific Aim 3d.	36
Hypothesis 3d.	36
Exploratory Aim 1	36
Hypothesis 1a.	37
CHAPTER 4: Method	38
Research Design and Procedures.....	38
Phase I. Measurement Development	38
Phase II. Measurement Evaluation	42
Eligibility Criteria.....	42
Procedure	43
Study Measures and Timeline of Administration.....	44

Measures	44
Participants	47
Human Subjects Protection	47
Power Analyses	47
CHAPTER 5: Data Analytic Strategy	48
CHAPTER 6: RESULTS	51
Aim 2: Exploratory and Confirmatory Factor Analyses of the MSAQ.....	55
Exploratory Factor Analysis	55
Confirmatory Factor Analysis	57
Factor 1: Individual-Based Rejection versus Acceptance	57
Factor 2: Psychopathology (weakness/attention-seeking).....	58
Factor 3: Unit-Based Acceptance versus Rejection	58
Factor 4: Immoral	58
Aim 3: Empirical Evaluation of the Psychometric Properties of the MSAQ.	59
Exploratory Aim 1: Evaluation of Demographic Factors and Military Attitudes Toward Suicide.	62
CHAPTER 7: DISCUSSION	64
Limitations and Strengths	70
Research and Practice Implications	74
Conclusion	75
REFERENCES	76
Figures	80
Tables	87
APPENDICES	107
Appendix A– Consent Form.....	107
Appendix B– Recruitment Venues, Posting Language, and Follow-Up Email	111
Appendix C: Demographic Questionnaire	113
Appendix D: Original Military Suicide Attitudes Questionnaire	115
Appendix E: Final Military Suicide Attitudes Questionnaire Means and SDs	117
Appendix E: Final Military Suicide Attitudes Questionnaire	119
Appendix F: Original MSAQ Items	121

Suicide is a significant public health problem within the United States (U.S.) and the Department of Defense (DoD). Globally, there is a suicide death every 40 seconds (57). Within the U.S., suicide is currently the tenth leading cause of death (18), and it is the number one cause of death within the military (13). In response to the problem of suicide, a number of national and DoD prevention programs have been designed and disseminated. One of the primary objectives of these suicide prevention programs has been to enhance awareness and knowledge about suicide. Furthermore, these programs have aimed to improve attitudes towards suicide such that (1) those who are distressed are more likely to overcome the stigma associated with suicide in order to disclose their suicidal thoughts and intentions to those available to help including medical professionals, and (2) those who are approached for help are more likely to demonstrate attitudes that promote acceptance and a non-stigmatizing stance toward suicidal individuals.¹

Overall, the expected outcomes of stigma reduction and an increased likelihood of bystander intervention are recognized as important endeavors in the national and military suicide prevention strategies (60; 67). Indeed, a clear link has been identified between accepting community attitudes and reduced suicide prevalence (62). Additionally, there has been a great emphasis placed on suicide prevention program evaluation, by both the National Strategy for Suicide Prevention and the DoD, in order to ensure that the help offered to suicidal individuals is evidence-informed at the very least, and preferably

¹ *Accepting* attitudes toward suicide is terminology that is commonly used in the suicidology literature to refer to a non-stigmatizing stance toward suicide death and individuals with suicidal thoughts and/or behaviors. Accepting attitudes toward suicide do not indicate an agreement with and/or approval of suicidal self-inflicted violence. Because the term, *accepting*, is commonly used in the scientific suicidology literature, the term is also used here in this dissertation to refer to previous and current findings.

evidence-based. However, although the national and the DoD suicide prevention advocates have implemented multiple campaigns to reduce the problem of suicide, a paucity of research exists on the efficacy in reaching their stated goals. Moreover, recent research has identified that the existing civilian-based psychological instruments (e.g., the widely used Suicide Opinion Questionnaire) for the measurement of the impact of such efforts in producing attitudinal change on suicide may not be an effective and culturally-sensitive tool in conducting program evaluation studies within the DoD (71).

The overall purpose of this dissertation was to develop a new, military-specific attitudinal measure of suicide, appropriate for use with active-duty military populations. This research expands on previous studies evaluating the most commonly used attitudinal measure (i.e., the Suicide Opinion Questionnaire), which have identified its factor structures as weak (3) and not helpful within a large military sample (71). The first step in this dissertation study was the development of a Military Suicide Attitudes Questionnaire (MSAQ) involving contributions by the author, assistance from mental health trainees and educators at USUHS, active duty service members, and subject matter experts in the field of suicidology. Additionally, a psychometric evaluation of the newly developed questionnaire was conducted. For this purpose, data were collected online from members of the active-duty armed services (Army, Navy, Air Force, and Marines) who consented to participate in the study. Exploratory and confirmatory factor analyses were used to identify and confirm latent variables within the newly developed measure for purposes of interpretation. Correlations were used to assess validity and reliability of the measure. Exploratory analyses were conducted comparing potential differences

based on demographic and military variables with previous attitudinal research in military samples.

This dissertation is organized in the following six sections: (1) Background, (2) Purpose and Significance, (3) Aims and Hypotheses, (4) Method (5) Data Analytic Plan, (5) Results, (6) Discussion, and (7) Limitations and Strengths. In the “Background” section, a review of the public health significance of suicide, prevention efforts, and attitudes toward suicide is provided. The “Purpose and Significance” section highlights the overall objective and importance of the proposed dissertation. Within the “Aims and Hypotheses” section, clear descriptions of the specific objectives of this dissertation as well as hypothesized expectations about its findings are provided. The “Methods” section provides an overview of the measures used, plan and procedures to develop the newly proposed measure, data collection strategy, and human subject protection considerations. Next, the “Data Analytic Plan” section provides information on the proposed statistical analyses. Within the “Results” section, the outcomes of all planned analyses are presented. The “Discussion” section provides a review of the findings and places them in context to previous research. Finally, the “Limitations and Strengths” of the dissertation are discussed.

CHAPTER 1: Introduction

PUBLIC HEALTH SIGNIFICANCE OF SUICIDE

Suicide remains a leading preventable public health problem globally, as well as within the United States (U.S.), and the U.S. Department of Defense (DoD). Around the world, 1 death every 40 seconds can be attributed to suicide (57). Suicide is currently the tenth leading cause of death for Americans and the third leading cause of death for those between the ages of 18 and 45 years old (18). In 2009, there were 36,891 deaths by suicide with an estimated cost of illness exceeding 38 billion dollars when accounting for medical and lost work costs (17). Rates of suicide remain significantly higher among men (20.67 per 100,000) compared with women (4.62 per 100,000) (18).

In recent years, suicide has become the leading cause of death for U.S. military service members, claiming more lives than combat and transportation accidents (13). In 2012, there were 304 confirmed suicides within the DoD, a rate of 22.7 per 100,000. Of these confirmed suicides, more than 90% were men, approximately 75% were Caucasian, and roughly half were junior enlisted (E1-E4) (67). Notably, only 13.5% of the suicide decedents were known to have had direct exposure to combat and only 7.5% of suicide deaths occurred while deployed. Of the military branches, the ground services presented with the highest rates. In 2012, the Army reported a rate of 29.7 per 100,000 and the Marines reported a rate of 24.3 per 100,000 (67). The Navy and Air Force reported significantly lower rates, 17.8 and 15 per 100,000 respectively (67).

While the rate of suicides within the DoD appears notably higher than civilian data, given the demographic composition of the armed services, military rates are lower than civilians when controlling for such demographic variables as age and gender (61). That stated, this gap has continued to narrow, and given the team environment existing

within the military, there is an increased risk for clustering of suicides, presenting an increased need for efforts aimed at suicide prevention within the military (61).

SUICIDE PREVENTION

The current national strategy for suicide prevention consists of strategic directions within each of the following domains: (1) surveillance, research, and evaluation; (2) healthy and empowered individuals and communities; (3) clinical and community preventive services; and (4) treatment and support services (60). Efforts towards violence prevention, such as the national strategy for suicide prevention, start broadly with a 4-step process using a public health framework. Within this framework, as outlined by both the Centers for Disease Control and Prevention as well as the World Health Organization (18; 57), the first step is to define the problem. This step involves identifying who, what, where, when, and how – i.e., through data collection from multiple sources on the prevalence and impact of the targeted issue. The second step involves identifying both risk and protective factors related to the identified public health problem. Factors identified in this step may be used later as points of intervention in reducing violence. Step three can be described as a piloting stage for intervention strategies to determine efficacy. In step four and the final stage of this framework, dissemination, implementation, and further evaluation of evidenced-based strategies occurs.

The public health framework guides our national and DoD-related efforts on suicide prevention. The surveillance data on suicide collected by the CDC and the DoD Suicide Event Report (DoDSER) address the objectives of the first step of the public health framework. This information provides an overview of the scope of the problem

and the year-to-year fluctuations in trends. In terms of the second step, a number of risk and protective factors for suicide have been well-established. Suicide risk factors include availability of lethal means, lack of perceived social support, hopelessness, history of traumatic life events, family history of suicide, mental illness, substance-related disorders, prior suicide attempts, impulsivity and/or aggression (60). supportive Protective factors for suicide include availability of health care, restriction of lethal means, social support, problem-solving skills, reasons for living, moral objections to suicide, and environments (60).

The third step of the public health framework on suicide emphasizes the importance of primary, secondary, and tertiary suicide prevention (60). Primary suicide prevention efforts, those most commonly utilized by the U.S. military, are universal strategies that target an entire population with the goal of enhancing protective factors and reducing risk factors (61). For instance, in recent years, the National Institute of Mental Health (NIMH) launched an educational campaign, titled, “Real Men - Real Depression” which aims to increase awareness about symptoms of depression among men. Secondary suicide prevention efforts target a specific group of individuals who are symptomatic (as a form of early intervention). For instance, the U.S. Marine Corps, over the past several years, has implemented the “Never Leave a Marine Behind” program which aims to educate frontline supervisors to recognize distressed Marines and refer them for help. Finally, tertiary suicide prevention efforts target those who have experienced suicidal thoughts and/or behaviors during their lifetime, in order to prevent the recurrence and subsequent exacerbation of symptoms (61). For instance, the intervention titled, Post Admission Cognitive Therapy (32) aims to prevent the recurrence

of a subsequent suicide attempt in psychiatrically hospitalized individuals following self-directed violence.

In terms of step four of the public health framework, emphasis (as previously noted) is placed on dissemination and community adoption of evidence-based practices. Once these practices are implemented within various community settings, further evaluation is warranted in order to ensure the program's success in meeting its stated objectives. In accordance with this necessary step, the national strategy for suicide prevention puts out a direct call to action for the identification and subsequent evaluation of community suicide prevention efforts that have already been disseminated and adapted for implementation in specific communities. In the section below, a brief description of suicide prevention public health programs, as adapted for the military is provided.

DOD SUICIDE PREVENTION EFFORTS

Efforts aimed at suicide prevention began DoD-wide in 1999 with the launch of the Suicide Prevention and Risk Reduction Committee (SPARRC). This committee intended to increase collaboration among services with the goal of reducing suicides (21) and was composed of the suicide prevention program managers from each branch of service (61). Previously, each branch utilized separate prevention programs (e.g., the Marine Corps Suicide Prevention Program [MCSPP]) tracking systems (e.g., Department of the Navy Suicide Incident Report [DoNSIR]). This type of division did not permit for communication among the different military branches. In response to this problem, SPARRC allowed for the creation of multiple working groups on suicide prevention and the creation of a standardized suicide reporting system in 2008, the Department of

Defense Suicide Event Report (DoDSER), where suicides can be reported, tracked, and compared among the services (21).

Inter-service communication has increased since the SPARRC and each service branch continues to report suicide events through the DoDSER. However, significant differences in populations, culture, and mission have maintained the need for individual branch and culturally-sensitive suicide prevention programs. Each military service within the DoD (Army, Navy, Air Force, and Marine Corps) varies significantly with regards to size, several demographic factors (i.e., gender, ethnicity, age, marital status, and education), and enlisted-to-officer ratios (1), all of which are related to suicide incidence. Significant differences have also been identified between the services on risk for suicide and the number of suicides and attempted suicides per year (21). While progress has been made to develop service-specific suicide prevention programs, as well as to better predict individual risk for suicide among military service members (11), there is a paucity of research on the efficacy of disseminated suicide prevention efforts, across all three noted levels, in the military as well as in the general civilian population. In the sections below, a very brief review of suicide prevention program initiatives within each branch of the U.S. military is presented.

Army. The Army's current suicide prevention program focuses on training its members to take care of one another, encouraging "soldiers to take care of soldiers" (61). The Army considers this a "holistic approach" designed to promote resiliency within its members as well as to increase the likelihood of peer and leadership intervention through their ask, care, escort (ACE) initiative (61). The stated objectives of this initiative, delivered in a three hour training, are to promote individual and group responsibility for

others, to increase awareness of stigma and its preventative effects on help seeking, to enhance knowledge and confidence to allow for identification and intervention for suicidal soldiers, and to improve awareness of resources available for assistance (14).

Navy. The Navy's current suicide prevention program characterizes suicide as the extreme end of a continuum of stress and encourages intervention efforts from peers and leadership (61). The Navy program provides education on warning signs for identification of suicidal individuals and methods to intervene through the PRESS model (54). Within this model, sailors are encouraged to Prepare through active connection with their peers and subordinates, Recognize symptoms of distress, Engage through intervention with other sailors, Send sailors to receive appropriate assistance, and Sustain through follow up (54).

Air Force. The Air Force maintains a comprehensive suicide prevention program aimed at primary prevention efforts at all levels of personnel with an emphasis on creating cultural and attitudinal changes throughout their leadership hierarchy (61). Their program has 11 tenets, specifically, leadership involvement, professional military education (PME), guidelines for commanders, community prevention, community education and training, investigation, stress management, integration of delivery of prevention services, limited patient privilege, behavioral health surveys, and epidemiological database and surveillance systems (68). One component of the Air Force's prevention efforts is LINK, an acronym reminding its airmen to Look for possible concerns, Inquire about concerns, Note level of risk, and Know referral sources and strategies (68). The goals of LINK are similar to those of the other service's acronym-named efforts, to decrease stigma of help seeking, improve early identification

by peers and supervisors, and to encourage leadership to connect airmen to necessary resources (68).

Marine Corps. The Marines suicide prevention efforts are mandatory training at all initial entry sites to include recruit training, Officer Candidate School, and The Basic School, ensuring that all Marines receive a basic level of training on suicide (39).

Additionally, the Marine Corps has included small-group discussions on suicide in its training through the Marine Corps Martial Arts Program (MCMAP). These discussions are led by a trained instructor and are intended to produce active engagement among participants. Programs such as these include evidenced-based methods for prevention (i.e., education, targeting, and referral) (60) and involve empirically supported principles for attitude and opinion change as one of their primary goals. The “Never Leave a Marine Behind” program was established as a USMC primary and secondary prevention effort (72). This training targets Marines separated by rank into 3 groups (Non-Commissioned Officers [NCO], Staff-NCO and Officer) with the goals of attitude change, improved knowledge, and increased likelihood of intervening (19).

PROGRAM EVALUATION OF DoD SUICIDE PREVENTION EFFORTS AND RESEARCH GAPS

Each branch of the U.S. Armed Forces has developed extensive programs to prevent suicidal self-directed violence among members. One of the most utilized suicide prevention efforts, as highlighted briefly above, has involved some form of gatekeeper training and such programs have built on existing lessons learned within the field of suicidology and evidence-informed practices. Suicide prevention gatekeeper training programs aim to increase participants’ knowledge of mental health issues and overall ability to intervene at a time of suicidal crisis. However, data that supports the

effectiveness of such programs is sparse. One review of military suicide prevention program effectiveness studies found all contained some form of methodological flaws, most of which may have significantly impacted the findings of reduced suicides (5). Within this review, the Air Force's program evaluation was identified as the best review and considered the least flawed in demonstrating effectiveness in suicide reduction (41). That stated, even this study had significant limitations. Specifically, their efforts focus on a reduction in number of suicides – an outcome variable that is difficult to identify (due to classification issues), low frequency, and cannot be evaluated until years after an intervention due to reporting timelines, making it difficult to make real time changes to improve effectiveness (1; 61).

The largest challenge faced in using best practice prevention strategies is the lack of research evidence on these strategies; whereas most research focuses on tertiary prevention (61). Lack of sound and timely evaluation remains a significant barrier to the implementation of many suicide prevention and intervention programs both at the program level and the national strategy level (4). Therefore, a recent report put forth by the Defense Health Board Task Force on the Prevention of Suicide by Members of the Armed Forces (22) recommends that every suicide prevention program contain an evaluation component.

Effective program evaluation studies and the reliability of their findings rest heavily on the measurement tools utilized by their investigators to monitor changes, in those trained, from pre to post training. However, a lack of standardized and military-culturally relevant psychological instruments to measure attitudinal change as well as other changes from pre to post training, continues to exist within the DoD. Total

incidence of suicide cannot be the only metric for evaluating prevention programs given the low base rate of suicides in the military, the length of time required to longitudinally monitor suicide-related outcomes, and the difficulty in classifying and tracking suicides (61). While the method of tracking suicide-related outcomes has shown some promise in measuring effectiveness of indicated prevention efforts (11) measurement tools are needed to better understand and subsequently track important factors of interest to suicide prevention.

Moreover, another highly utilized suicide prevention strategy within the DoD has involved a stigma reduction campaign, aimed at decreasing stigma and perceived barriers to care among service members and their families. Approximately one in five Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) service member reports symptoms associated with Posttraumatic Stress Disorder (PTSD) and/or Major Depressive Disorder (MDD), and yet, only about 50% of these individuals are reported to seek mental health treatment (61; 69). In addition, service members who screen positive for a mental disorder, compared to those who do not, are twice as likely to report concerns about stigma and perceived barriers to care (36). Currently, limited scientific evidence is available to assure service members that help-seeking efforts will not negatively impact one's military career. Therefore, the DoD Task Force Report on the Prevention of Suicide by Members of the Armed Forces has specifically recommended that suicide prevention specialists within the DoD have to "develop a Comprehensive Stigma Reduction Campaign Plan that attacks the issue on multiple fronts to encourage help-seeking behavior and normalizes the care of the 'hidden wounds'..." (ES-9) (22).

To address the strategic prevention objectives, described thus far, the DoD suicide prevention community of researchers, clinicians, and policy makers, appear to be most interested in shifting attitudes among military service members and leadership. Such a shift in attitudes pertaining to topics such as suicide, stigma, and perceived barriers to care, is instrumental, measurable, and must be systematically tracked to show progress. For example, civilian research suggests that suicide prevention training programs should increase accepting (i.e., non-stigmatizing) attitudes towards suicide behaviors as a mental health issue while decreasing permissive attitudes (42).

Overall, the attitudes within a community towards suicide must be clearly understood before change can happen. In fact, attitudes towards suicide may be postulated to significantly shape the occurrence of self-directed violence, in that communities with non-stigmatizing or accepting attitudes towards suicide as a mental health concern (as opposed to stigmatizing views) have fewer suicides (62). It should be noted that “*accepting*” is a commonly used term in the suicidology literature to indicate a non-stigmatizing stance towards those who die by suicide and those who report suicidal thoughts and/or behaviors. The use of the term, *accepting* highlights that suicidal individuals and their family members merit compassion and understanding. The term is not used to suggest that individuals, providers, or communities should maintain a permissive attitude toward suicide and suicidal behaviors. Research in suicidology has focused on the role of accepting attitudes towards suicide and other important health-related outcomes. For instance, people in areas with low suicide rates have been found to hold accepting attitudes towards suicide as a mental health issue and help-seeking (62). Persons within accepting communities are less likely to experience self-stigma and shame

related to suicide, factors which are associated with informal and professional help seeking behaviors (62). In sum, members of communities that hold less stigmatizing views related to suicide but rather see it as a mental health concern to be addressed, are less likely to hide thoughts and feelings related to suicide and are more likely to engage in help-seeking behavior.

To date, only one study has identified a direct relationship between attitude change and bystander intervention (65). Within this study, high school students who had received the intervention demonstrated a greater willingness to intervene with depressed peers than those who had not received the training. That stated, evidence can be found in other areas to support the concept that belief or attitude change leads to emotional and behavioral changes. On an individual level, changes in thoughts and beliefs are tied directly to emotional and behavioral change. The cognitive model for psychotherapy guides treatment for a variety of psychological disorders and operates through targeting negative automatic thoughts about events and negative core beliefs about ones self; ultimately creating lasting change (9). On a community level, attitudes toward gay marriage provide a compelling example. Research has demonstrated that attitude shifts toward acceptance of gay marriage have significantly contributed to action and policy change. The 11 states with the most accepting attitudes towards gay marriage have subsequently passed laws permitting gay marriage (47). Conversely, ten of the twelve states most strongly opposed to gay marriage have passed bans on gay marriage (47).

Consequently, for the DoD to run a successful suicide reduction campaign, a real change in the community's and its individual member's attitudes towards topics such as suicide, stigma, and perceived barriers to care must be shown. That stated, the military

has a particularly difficult hurdle to overcome given that male gender and less education, are associated with poorer knowledge and more stigmatizing attitudes toward suicide (7). An additional barrier to overcoming the impact of stigma and barriers to care, as well as measuring such attitudinal change, is that within the U.S. military there are real, work-related consequences associated with seeking mental health care such as administrative separation, medical separation, loss of security clearance, and loss of flight status for pilots associated with certain conditions. This highlights the need to develop a psychometrically sound as well as culturally sensitive and meaningful set of outcome measures to track progress from the time of pre- to post- implementation for various suicide prevention programmatic efforts.

However, to date, much of the research on attitudes within the DoD suicide prevention program has been conducted using civilian-based measures, many of which were developed decades ago. Therefore, one may argue that these measures are out-of-date and certainly not culturally sensitive for use in the military environment. This dissertation directly addressed this research gap in the military suicide prevention literature by developing and empirically evaluating a new attitudinal measure on suicide in order to support the overall suicide prevention efforts across DoD. In the following section, a discussion about attitude formation and attitudes in relation to suicide prevention is provided to set the stage for the development of a newly proposed psychological measure.

ATTITUDES

A basic understanding of individual and community attitudes towards suicide is imperative in terms of guiding strategic programmatic efforts to address negative

perceptions about suicide and to reduce stigma and perceived barriers to care. Yet, to date, a systematic effort to measure attitudes about suicide among military service members and the community as a whole has not been undertaken. This can partly be attributed to the fact that a military culturally-sensitive and effective tool for measuring such attitudes towards suicide is non-existent.

Furthermore, DoD evaluation efforts on suicide prevention as well as anti-stigma programs, as indicated previously, have been sparse and additionally handicapped by the fact that a psychometrically valid instrument for measuring attitudes towards suicide and subsequent changes in such attitudes has yet to be established. While attitude formation is not directly related to development of the proposed measure, an understanding of the development process and function of attitudes serves to support the targeting of attitude change in suicide prevention and the need to measure for change of time.

Attitudes are general and lasting evaluations of a person, object, or issue that impact our thoughts, affect our emotions, and guide our behaviors (12). The relationship between community attitudes toward suicide and its prevalence has been established (62). Attitudes have been a focal point of research within the field of social psychology since the early 1900's when it was first discovered they could be measured (48; 70). The focus of research has been split largely between the relationship between attitudes and behaviors, the formation of attitudes, and attitude change.

Theories of Attitude Formation. To begin, it is necessary to understand attitudes as well as how they are formed. Attitudes, in the basic sense, refer to how much we like or dislike a point of reference and are comprised of three main components: (1) content, (2) structure, and (3) function (50). First, *content*, within an attitude, refers to the

cognitive, affective, and behavioral information people associate with objects (e.g., suicide is immoral). Second, the *structure* of an attitude can either be uni- or bi-dimensional (e.g., like or dislike). For example, with regards to help seeking, a person may be perceived as weak for seeking assistance or strong for acknowledging that they need help. Finally, *function* refers to the psychological need served by the attitude (e.g., attitudes toward suicide may help someone “make sense” of or understand the act). Simply stated, attitudes are the product of one’s evaluation of an object based on cognitive, affective, and behavioral information available in one’s environment (50).

Multiple theories exist on how individuals form attitudes. One such theory, relevant to suicide prevention, is mere exposure (74). The theory of Mere Exposure suggests that positive attitudes towards a point of reference can be developed through repeated exposure to the object (74). Mere exposure would support the services delivery of suicide prevention training annually, especially training focused on attitude formation.

Observational learning is also tied to attitude formation and behaviors (6). This theory suggests that attitudes may be formed based on observing the reinforcements that one receives for a given behavior. In relation to suicide prevention, observational learning may perpetuate either stigma or acceptance, based on one’s observations of how individuals are responded to when reporting suicidal thoughts or behaviors.

The functional theory of attitude formation is likely the most relevant to understanding attitudes toward suicide. Daniel Katz suggests attitudes are actively formed to provide knowledge, communicate who we are, to receive acceptance from others, and to protect our ego (40). Here, the need to define one’s self, receive social approval, and justify beliefs or actions may provide understanding of negative attitudes

toward suicide within the military and also support for current methods employed to create attitudinal change (e.g., cultural shift, messages of acceptance from leadership, stigma reduction).

Attitude Change. Additional research has evaluated the formation of attitudes through attitude change. Specifically, viewing attitudes as fluid constructs that can be swayed along a continuum based on social pressures; the most prominent pressures being expert opinion and group consensus (52). This view places less importance on the individual parts of an attitude, but rather, its function and flexibility. However, each of these ways of “defining” an attitude acknowledges the importance of understanding attitudes, the function they serve, and that they can be adjusted with the right influence.

Attitude change has been thoroughly researched, especially given its application in modern marketing and persuasion related to health behaviors (12). Variables that have been studied include one’s behaviors (10) or level of active-participation in an activity (73) to who communicates the message aimed to produce attitude change (38) and how frequently the message is delivered (51). Other theories have focused more heavily on the cognitive and emotional experience related to attitudes, most famously, Cognitive Dissonance Theory, which postulates attitude change may result as a method of reducing dissonance when presented with information that conflicts with previously held beliefs (28).

Attitudes and Behavior. Given the understanding of attitudes and how they are formed, it is important to understand their relationship to action. Whether or not attitudes and behaviors are related was originally a point of contention. Original research on this subject suggested no such link existed, specifically, that one’s expressed attitudes or

intentions were not predictive of their actions (45). These findings were later refuted by the Theory of Reasoned Action, which supported the link between attitudes and actions with the inclusion of social norms into the relationship (30). Later, this theory was updated and further supported by the inclusion of perceived behavioral control – whether or not a person believed they could follow through with the desired action (2). Given this link between attitude and action, how attitudes are formed is an important topic for research, especially in the context of creating attitude change toward suicide.

Furthermore, the fluidity of attitudes serves to support that attitudes can be changed and should be assessed. While this is not directly applicable to developing a measure to assess attitudes, it serves as a basis of support to take on such a task.

ATTITUDES TOWARD SUICIDE

Attitudes toward suicide held by community members, family members, health care providers, and co-workers, of course, including one's own personal attitudes, largely impact one's desire to seek assistance (59). Negative attitudes toward suicide (i.e., weak, shameful, sinful, or selfish) from community members, leadership, and/or healthcare professionals further stigmatize individuals considering suicide, limiting their perceived options for assistance and increasing their acceptance of suicide as their “only option” (59). Conversely, accepting attitudes (i.e., non-stigmatizing) toward suicide behaviors have been demonstrated to reduce stigma and therefore increase help-seeking behaviors and decrease suicide incidents (62). Given the relationship between attitudes and suicide, the importance of having valid methods to assess such attitudes cannot be overstated.

Measuring of Attitudes Toward Suicide

Attitudinal research related to suicide has largely been focused on non-clinical populations, with a primary focus on health care providers. A recently published review of more than 2,200 articles (43) found that the three most widely used and most broadly applicable psychological scales to measure suicide attitudes and opinions are the Suicide Opinion Questionnaire (SOQ), the Attitudes Toward Suicide Scale (ATTS), and the Suicide Attitudes Questionnaire (SUIATT), with the SOQ being used most often (43) and the SUIATT only being used to compare opinions among various countries.

The SOQ is a 100-item self-report measure used to assess attitudes towards suicide and is composed of 65 attitudinal items and 35 “factual” items (26). The SOQ uses a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). The SOQ has utilized college students and health professionals for development (43). Domino and colleagues originally conceived 8 subscales (unpublished, for full review see (46)) for this measure but since then, several factor structures and scales have been established for this measure with the most commonly used being the 5-factor structure (α ranging from .30 to .83 (43)) (63; 64) and the 8 clinical scale model α ranging from .23 to .75 (43)) (25; 43). The 5-factor structure was demonstrated to account for 77% of the variance in responses within college samples during its initial validation (64) however, this finding has never been replicated (3). A meta-analysis of the SOQ identified multiple other factor structures, with varying efficiency, leading to the conclusion that the existing factor structures are not stable and should not be used for interpretation (3). A 4-component model using a military sample was identified by this author accounting for only 30% of the variance in responses (71). Therefore, the SOQ may not be an applicable and culturally-relevant measure for today’s military.

The ATTS is 34-item self-report measure used to measure attitudes toward suicide in the general population using a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree) (51). The development of this measure was influenced by both the SOQ and SUIATT and utilized both college students and members of the general population from Sweden (43). A total of 10 factors have been identified for the interpretation of this measure, accounting for approximately 60% of total variance in responses (α ranging from .38 to .86 (43)).

The SUIATT is a 63-item (5-point Likert scale) self-report measure used to compare attitudes towards suicide among different countries (23). This measure is largely irrelevant to the current study but referenced due to its prominence in attitudinal research.

Additional attitudinal measures exist with a focus on attitudes toward certain aspects of suicide. Specifically, the Suicide Potential Lethality Scale (49) is a self-report measure evaluating knowledge about suicide. It is composed of 13 multiple-choice items (e.g., “Persons who are most likely to succeed in committing suicide are...”). It has been evaluated among mental health professionals, health professionals, and college students (49). The Attitudes Toward Suicide Prevention Scale (35) is a 14 item self-report measure designed to assess healthcare professionals’ attitudes toward prevention. The Attitudes Toward Assisted Suicide Questionnaire (58) is comprised of 102 self-report items and also assesses healthcare professionals’ attitudes towards suicide. This measure produces factors capturing positivity, acceptability, religiosity, professional role and care, manipulation, personality traits, mental illness, and discrimination.

In summary, a paucity of literature exists specifically related to attitudes towards suicide within a military population. None of the current measures of suicide opinions were developed to be military specific. Further, the current leading measure (the SOQ) was originally published over 30 years ago (1982) which presents multiple potential concerns regarding relevance. Previous research conducted by this author identified few similarities in opinions toward suicide between military personnel and civilian age equivalent participants. Significant differences between gender and age were present and measures of opinion found to be useful with civilian respondents were not well suited for military personnel. Notably, in research on a military sample using the SOQ, these findings only accounted for approximately 30% of the variance (as compared to 77% accounted for in civilian research (64)) with a four component model and a component unique to the military was identified, stigma associated with suicide.

Empirical Findings on Common Suicide Attitudinal Themes

There are many prevailing themes of attitudes held toward suicide. The factors identified in the various measures of attitudes toward suicide have shared many common traits such as acceptability, religiosity, and mental illness. Findings from these studies suggest that attitudes towards suicide fall on continua and reflect three prevailing themes: (1) moral versus immoral, (2) psychache versus pathological, and (3) acceptance versus rejection.

Moral versus Immoral

This continuum addresses the content of attitudes. Factors identified on the Suicide Opinion Questionnaire (SOQ) capture attitudes along the continuum between moral and immoral. Factors such as “social disintegration” (e.g., “The higher incidence

of suicide is due to the lesser influence of religion”), “Importance of Religion” (e.g., “The higher incidence of suicide is due to the lesser influence of religion”), and “Suicide is Morally Bad” (e.g., “Suicide is a very serious moral transgression”) exemplify this construct (25; 64).

Using the Attitudes Toward Suicide Scale (ATTS), exploratory factor analyses have identified factors along this continuum including “Punishment After Death” (e.g., “People who attempt suicide are going to be punished in the other world”) and “Hiding Suicidal Behavior” (e.g., “Families who lose a daughter or son from suicide should hide this from their neighbors”) (53).

Psychache versus Pathology

Similarly, existing factors from other measures capture attitudes along the continuum between psychache (an extreme and unbearable psychological pain (66)) and pathology. Within the SOQ, the factors “Personal Defect” (e.g., “I would feel ashamed if a member of my family committed suicide”) and “Emotional Perturbation” (e.g., “Most persons who attempt suicide are lonely or depressed”) attempt to capture attitudes within this construct (64). Additionally, within the scales “Suicide Reflects Mental Illness” (e.g., “Most persons who attempt suicide are lonely or depressed”), “Cry for Help” (e.g., “Those who threaten to commit suicide rarely do so”), “Impulsivity” (e.g., “Most suicide are triggered by arguments with a spouse”), and “Suicide Reflects Aggression/Anger” (e.g., “Many suicide notes reveal substantial anger towards the world”) demonstrate the prevalence of this continuum (25).

Using the ATTS, factors related to attitudes viewing suicide along the continuum between psychache and pathology include “Relational Issues” (e.g., “It is mainly

loneliness that drives people to suicide”) and “Predictability” (e.g., “Most suicides are impulsive actions”) (31). Additional factors on the ATTS include “Suicide as a Sign of Mental Illness” (e.g., “People who attempt suicide are mentally ill”) and “Communicating Psychological Problems” (e.g., “A person who thinks and plans suicide should tell this to his/her friends and thereby ask for help”) (53).

Acceptance versus Rejection

This continuum addresses the structure of attitudes. Factors supporting this continuum have been identified within the SOQ, “acceptability” (e.g., “People with incurable diseases should be allowed to commit suicide in a dignified manner”), “Right to Die” (e.g., “Suicide prevention centers actually infringe on a person’s right to take his life”), “Suicide is Normal” (e.g., “Almost everyone has at one time or another thought about suicide”), and the ATTS, “Acceptance of Suicide” (e.g., “There may be situations where the only reasonable resolution is suicide”) and “Preventability” (e.g., “If someone wants to commit suicide, it is their business and we should not interfere”) (31).

Additionally, multiple factors related to stigma contribute to this factor such as the SOQ factor “Stigma Associated with Suicide” (e.g., “People who commit suicide must have a weak personality structure”) (71).

Additional support for each continuum is found using Q-sort methodology with adolescents. Researchers identified the existence of 3 primary attitudes: (1) “Opposing suicide-moral minded”, (2) “Understanding-empathizing suicidal person”, and (3) “ambivalent” (15). Further research with adolescents identified that less than 20% perceived mental illness as a major contributor to suicide (44). Findings from investigating suicide opinions within a non-clinical military sample also support the

existence of the three identified continuums. Using the SOQ, these continuums exist within the components of “Acceptability” (e.g., “Suicide is acceptable for aged and infirmed persons”), “Emotional Perturbation” (e.g., “Suicide attempts are typically preceded by feelings that life is no longer worth living”), and “Stigma Associated with Suicide” (e.g., “People who commit suicide must have a weak personality structure”) (71).

In summary, these three themes (moral vs. immoral, psychache vs. pathology, and moral vs. immoral) are pervasive in the suicide attitude literature. On each major measure of suicide attitudes, factor analysis has identified these as measureable latent variables. These repeated findings suggest these themes should serve as a foundation for new measure development in suicide attitude research.

CHAPTER 2: Purpose and Significance of Dissertation

Historically, attitudes towards suicide have been examined exclusively in civilian samples. A paucity of literature exists specifically related to attitudes towards suicide within a military population. Such attitudes held by military personnel of all ranks and all branches of services need to be closely examined and understood as the basis of any systematic programmatic efforts to change negative attitudes associated with suicide as well as to reduce stigma within the DoD community. However, given that none of the existing psychological measures of suicide attitudes were specifically developed for use within the military culture and community, we currently lack a psychometrically valid instrument for measuring military attitudes on suicide. The proposed dissertation study addresses this research gap and is based on the earlier research performed by this author.

Recent findings, from this author's master's thesis, identified few similarities in attitudes toward suicide between military personnel and civilian age equivalent individuals. Most notably, using the SOQ, the 77% variance in responses accounted for (which has been found to be unstable across other studies replicating the factor structure of the measure), based on a civilian sample was reduced to a 30% variance accounted for, based on a large military sample. While the differences in variance are most likely attributable to sample differences, there is also the potential this difference is due to the instability of the SOQ. However, each interpretation suggests the need for a new attitudinal measure. Some key departures from the civilian literature were related to acceptability of suicide-related behaviors. Specifically, female gender and higher education were predictive of less accepting opinions in the military sample (71). In addition, stigma associated with suicide was a component unique to the military

identified through this research. The departures from the civilian literature on suicide attitudes were significant and require further examination through a culturally-sensitive measure of suicide attitudes among military personnel.

Furthermore, there is an identified and urgent need to evaluate the efficacy of suicide prevention programs, particularly those aimed at changing attitudes and producing cultural change as well as reducing the stigma associated with suicide (61). Yet, existing psychological measures on suicide attitudes are not specifically designed for the military population and in fact, have been found ineffective in capturing the attitudes held by those serving as frontline supervisors in the military (71). Of course, given the identified links between community attitudes toward suicide as well as the desire to increase bystander intervention and the link between attitudes and action (2), suicide prevention efforts targeting attitudes are well intentioned and supported. As stated, there is simply a need to do a better job of systematically measuring suicide attitudes among military service members and tracking changes over time across the various military communities.

Therefore, the purpose of this dissertation was to develop and empirically evaluate a military-specific suicide attitudinal measure. In summary, such a measure is needed for a greater understanding of attitudes toward suicide within the military to pinpoint target attitudinal areas most in need of organizational attention and subsequent change through education and outreach efforts. The newly developed measure on military suicide attitudes would be expected to serve an important function in the context of future suicide program evaluation initiatives within the DoD such that a positive

change in negative attitudes toward suicide can be reliably measured and systematically tracked over time.

CHAPTER 3: Aims and Hypotheses

Aim 1

To develop a culturally-sensitive psychological instrument, titled, the Military Suicide Attitudes Questionnaire (MSAQ), to measure attitudes regarding suicide among military service members.

Aim 2

To conduct exploratory and confirmatory factor analyses of the Military Suicide Attitudes Questionnaire (MSAQ) in order to determine the latent structure of the measure.

Hypothesis 2.1.

A three-factor solution will emerge as significant: (1) Moral versus Immoral; (2) Psychache versus Pathological; and (3) Acceptance versus Rejection.

Aim 3

To empirically examine the psychometric properties of the MSAQ.

Specific Aim 3a.

To evaluate the concurrent validity of the MSAQ using the Stigma of Suicide Scale.

Hypothesis 3a.

Individual-based rejection attitudes toward suicide as measured by the MSAQ will be positively correlated with stigma as measured by the SOSS.

Specific Aim 3b.

To examine the discriminant validity of the MSAQ.

Hypothesis 3b.

Unit-based acceptance attitudes toward suicide as measured by the MSAQ will not be strongly correlated with stigma attitudes as measured by the SOQ.

Specific Aim 3c.

To examine the incremental validity of the MSAQ.

Hypothesis 3c.

The MSAQ will demonstrate incremental validity by remaining significantly related to stigma (SOSS) after controlling for the stigma associated with suicide component of the SOQ.

Specific Aim 3d.

To examine the test-retest reliability of the MSAQ.

Hypothesis 3d.

The MSAQ will demonstrate strong test-retest reliability based on measurement at time 1 (baseline) and time 2 (two-weeks post-baseline).

Exploratory Aim 1

To evaluate the relationship between demographic factors (e.g., education, sex, rank, branch of service, and exposure to suicide) and military attitudes toward suicide.

Hypothesis 1a.

Higher levels of education, female sex, branch of service, higher rank, and exposure to suicide will predict more accepting (i.e., non-stigmatizing) responses on the MSAQ.

CHAPTER 4: Method

RESEARCH DESIGN AND PROCEDURES

This study was designed to develop an attitudinal measure and used a cross-sectional design to evaluate the psychometric properties of the MSAQ. Study analyses utilized data collected explicitly for this purpose from active-duty members of the U.S. Army, Navy, Air Force, and Marine Corps. The study was completed in two main stages: (1) measurement development; and (2) measurement evaluation. Figure A provides an overview of the study design and procedures.

Phase I. Measurement Development

Overview. A theoretical-rational deductive method of scale development was used to develop the Military Suicide Attitudes Questionnaire. This method is recommended for measure development once a specific need has been clearly established and for measures that may be based on a theoretical framework established from a review of relevant literature (16). This method guides item development to ensure construct validity through the inclusion of items developed from experience, relevant theories, consultation with experts and members of the target audience, and focus groups (37). Specific to the MSAQ, this method also increases the cultural appropriateness of the measure, by including language and items unique to the military population. A recommendation of 4 – 10 items per hypothesized theme is provided so that each

construct may be assessed adequately (16). Finally, it is recommended that the developed measure be subjected to factor analysis, analysis of internal consistency, test-retest reliability, and measures of incremental, discriminant, and concurrent validity (37).

One alternative method to measure development is the inductive strategy used in the development of the Minnesota Multiphasic Personality Inventory (MMPI) (34). Items developed using this strategy are not based on theory but are generated in large numbers and then factor analyzed in target populations. Using the MMPI as an example, generated items were validated in multiple clinical and non-clinical populations to establish normative response patterns. The inductive strategy also permits decreased face validity, increasing the difficulty to respond in an overly positive or overly negative manner. However, given the purpose of this dissertation, the specific nature of the MSAQ, and the availability of relevant literature related to common themes of attitudes toward suicidal behavior, the deductive strategy was chosen.

Step 1. MSAQ Item Generation. The first step within this stage was item development. Given the three main identified themes in suicide attitude research, moral versus immoral, psychache versus pathological, and acceptance versus rejection, items were constructed to capture attitudes within each identified theme.

In “Moral versus Immoral”, items were constructed in consideration of attitudes in the following domains: (1) right versus wrong; (2) ethical versus unethical; (3) goodness versus evil; (4) rewarded versus punished by God; and (5) accepted by religion versus rejected by religion. In “Psychache versus Pathological”, items were constructed in consideration of attitudes in the following domains: (1) distress communication versus malingering; (2) resilience versus weakness; (3) help-seeking versus attention-seeking;

(4) rational versus secondary gain-focused; and (5) stoicism versus cowardice. In “Acceptance/Understanding versus Rejection”, items were constructed in consideration of attitudes in the following domains: (1) respect versus disrespect; (2) association versus avoidance; (3) inclusion versus exclusion; (4) empathy versus blame; and (5) desire to help versus resistance to help (See Table 1).

Items for each of the three themes, according to each of the five domains, were generated by the author of this dissertation with the assistance of two separate groups. The first group consisted of civilian and military members of the USUHS *Laboratory for the Treatment of Suicide-Related Ideation and Behavior* at USUHS. These individuals ranged from having an undergraduate to graduate degree in Psychology or a related field, with a minimum of 3 months and a maximum of 10 years of education and/or work experience in military suicide prevention. The two military service members in this group were both Ensigns in the U.S. Navy, serving as first and second year graduate students, with no prior military experience. The second group consisted of 6 active duty service members from the Army (N = 2), Navy (N = 1), Air Force (N = 1), and Marines (N = 2). These individuals ranged from 3 to 15 years of military service and ranged from E-4 to O-4 in pay grade. These individuals were selected by the author to contribute items given their varied career fields and experience levels. This step served in lieu of a formal focus group among members of the target population.

Individuals who contributed to the item development process from each participating group were asked to independently create items based on the hypothesized constructs. These individuals were given the themes presented in Table 1 and asked to develop a total of 10 items per theme they believed would capture attitudes toward

suicide within the active-duty military population. Item contributors emailed their developed items to the author of this dissertation, who compiled the items into a master list. This master list was then reviewed for duplicate items and adjusted for spelling and grammatical errors. Approximately 20 of the submitted items were slightly modified by the author to allow for clearer interpretation prior to the review process (e.g., “A service member who dies of suicide has made a wrong decision because he/she failed their unit and leadership” – “Suicide by a service member fails his/her unit and leadership”). With the assistance of these two groups, 260 potential items were generated for inclusion in the MSAQ. These items were clearly delineated to fit into at least one of the three a-priori selected constructs mentioned earlier. In addition, 17 items were generated and labeled as “other” as contributors considered them important but could not categorize any of them into the three construct classifications. Appendix F provides a listing of all 277 items suggested for the MSAQ.

Step 2. MSAQ Item Selection. Members of the *Laboratory for the Treatment of Suicide-Related Ideation and Behavior* were then instructed to rate each of the 260 generated items based on their “fit” to their designated construct. Based on average ratings, the item total was reduced to 92 items, including 25 items for each of the 3 a-priori selected constructs (total of 75) and all 17 items in the “other” category.

These 92 items were submitted to expert reviewers with instructions to rank order the items based on their importance and fit to the 3 a-priori selected identified constructs – or importance/relevance for the “other” category items. This review panel included Mike Anestis, Ph.D., a clinical psychologist and suicidologist; Pete Guitierrez, Ph.D., a clinical psychologist and suicidologist; Thomas Joiner, Ph.D., a clinical psychologist and

suicidologist; CDR Carrie Kennedy, Ph.D., a clinical psychologist and U.S. Navy Officer, and David Krantz, Ph.D., a health psychologist. These individuals were asked to review the 92 items independently from one another, and subsequently rate their agreement with the utility of the item for inclusion in the MSAQ measure on a Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Average scores were obtained for the 92 items and served as the basis of selecting the top 35 items for the final MSAQ measure to be evaluated in the next phase of the study. In summary, the MSAQ consisted of 35 items, mapped into three suicide attitudinal themes. The three suicide attitudinal themes consisted of ten items each per theme, with the additional 5 items being placed into an “other” theme, in that reviewers determined the items to be important but did not see a fit into one of the three hypothesized themes.

Phase II. Measurement Evaluation

To evaluate the psychometric properties and factor structure of the MSAQ, an assessment packet (see section on measures below for a review of instruments included in the packet) along with a demographic questionnaire was administered online using “SurveyGizmo” and made available to interested study participants, recruited through snowball and nonprobability sampling, through a variety of social media outlets with high military traffic and via email (see Appendix B).

Eligibility Criteria

Voluntary participants were included in this study if they met three criteria: 1) agreed to participate following a review of the informed consent (see Appendix A), (2) they were at least 18 years of age, and 3) they were currently serving on active duty in the

U.S. military. In addition to the informed consent document, two screener questions based on the inclusion criteria were used: 1) “Are you currently on active-duty in the U.S. Armed Forces?” and 2) “Are you currently at least 18 years of age?” No additional exclusion criteria were used in the study. A total of 317 service members met criteria and participated in this study.

Procedure

Recruitment. Snowball sampling (word of mouth) and nonprobability convenience sampling (social network sites – full list of sites and recruitment language is available in Appendix B) were used to recruit participants for this study. A total of 317 individuals, reporting to be active duty military service members, participated in the study. Recruitment for test-retest analyses was concluded three weeks into data collection well after the minimum number of 29 participants was met. In total, 130 participants were contacted to complete the follow up assessment with a completion rate of 39% (N = 51). Respondents were not compensated for their participation in the study.

Informed consent. Given the recruitment style used in this study, in person informed consent was not feasible. Therefore, an electronic informed consent was obtained from participants. Participants were presented with an IRB-approved informed consent document outlining the purpose and procedures of the study as well as potential risks and benefits of participation (Appendix A). If individuals agreed to participate, they were asked to select the “Next” button located at the bottom of the screen, which moved them forward to the eligibility criteria screening questions and the remaining survey items.

Follow-up assessments. Upon completing the initial battery, participants were asked to provide their email address if they agreed to complete a follow-up assessment after two weeks (for the purpose of evaluating test-retest reliability). An additional survey was created in SurveyGizmo consisting only of the demographic items, the MSAQ, and a request to provide their email address for purposes of matching their responses with their original assessment. A master list of respondent completion dates and email addresses was developed to accomplish timely follow up assessments. At the two-week mark for each participant, an email was sent to each participant from this author's university email account with a link to complete the follow up assessment. The master list was updated after each participant completed the follow up with an average completion time of two-weeks.

STUDY MEASURES AND TIMELINE OF ADMINISTRATION

Data for this study was collected at two specific time intervals: baseline and two-week follow up. Based on time to completion estimation from the software used for administration, it was expected that the baseline assessment would take approximately 30-40 minutes to complete and the follow up assessment would take approximately 5 minutes to complete. Table 2 summarizes the measures used at each time point.

Measures

The assessment battery administered consisted of a demographics questionnaire (including exposure to suicide on the baseline assessment), the Military Suicide Attitudes Questionnaire, the Perceived Barriers to Care measure, the Stigma of Suicide Scale, and the Suicide Opinions Questionnaire.

Demographics. The demographic questionnaire included 9 items designed to collect information on general demographics such as sex, marital status, ethnicity, military service branch, military rank, and education level (see Appendix C). At baseline assessment, an additional item soliciting information regarding exposure to suicide was also included in the demographic questionnaire. This item asked participants to indicate if they had been exposed to suicide behavior within their military unit, within their family or friend network, or if they had never previously been exposed to suicide behavior.

Suicide Opinion Questionnaire (24). The SOQ is a 100-item self-report measure used to assess attitudes towards suicide and is composed of 65 attitudinal items and 35 “factual” items. The SOQ uses a 5-point Likert scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree) and takes approximately 15 minutes to complete. Domino and colleagues originally conceived 8 subscales (unpublished, for full review see (46)) for this measure but since then several factor structures and scales have been established for this measure with the most commonly used being the 5-factor structure (63; 64) and the 8 clinical scale model (25; 43).

For the purpose of this dissertation, the previously established 4-component structure for the SOQ was used (71). This model is the only one known to have been confirmed using a military sample and is therefore the most relevant for points of comparison in this dissertation. These components include 1) Erroneous Assumptions about Suicide ($\alpha = .93$), 2) Emotional Perturbation ($\alpha = .83$), 3) Acceptability ($\alpha = .54$), and 4) Stigma Associated with Suicide ($\alpha = .68$). Erroneous assumptions about suicide consists of 32 items and includes opinions that demonstrate a lack knowledge of suicide (i.e. “Many victims of fatal automobile accidents are unconsciously motivated to commit

suicide”). Emotional perturbation consists of 16 items and includes opinions attributing suicide to emotional problems (i.e. “Individuals who are depressed are more likely to commit suicide”). Acceptability consists of 8 items and includes opinions suggesting suicide should be an acceptable option (i.e. “We should have suicide clinics where people who want to die could do so in a painless and private manner”). Stigma associated with suicide consists of 6 items and includes opinions that may contribute to stigma surrounding help-seeking for suicide (i.e. “Those who commit suicide are cowards who cannot face life’s challenges”).

Stigma of Suicide Scale (8). The SOSS is a 58-item measure to assess stigma toward suicide in the general community. Each item is a single word where participants are asked to rate its relevance to suicide using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The SOSS takes approximately 10 minutes to complete. It has demonstrated strong internal consistency overall ($\alpha = .90$) and for each of its identified components: stigma ($\alpha = .95$), isolation/depression ($\alpha = .88$), and normalization/glorification ($\alpha = .86$). These three components account for 59% of the total variance in responses (8) and were used to assess concurrent validity against identified factors for the SOQ.

Military Suicide Attitudes Questionnaire. The MSAQ is a 35-item measure to assess attitudes toward suicide in a military population. Thirty of the included items are statements related to the three hypothesized themes (10 each), the additional five items were included as “other” given their rated importance. The MSAQ uses a 5-point Likert scale response option from 1 – Strongly Disagree to 5 – Strongly Agree. The MSAQ takes approximately 5 minutes to complete.

Participants

Participants for this study were recruited from the active-duty military population. To be included in this study, persons must have been serving on active-duty (Enlisted or Officer) within one of the four branches of the armed services (Army, Navy, Air Force, or Marines) and be at least 18 years of age. Additionally, persons must have been able to read and comprehend English to complete the included questionnaires. Persons were excluded from the study if they were not serving in an active-duty status, under the age of 18, or unable to complete the included questionnaires. A minimum number of 25 participants from each branch of service was desired.

HUMAN SUBJECTS PROTECTION

This study was approved through the Institutional Review Board (IRB) of the Uniformed Services University of the Health Sciences (USUHS). An administrative review was conducted due to the research being anonymous in nature (i.e., for those who participated in the primary study only – test-retest participants were asked to provide email contact information), conducted via the web, and having an expected minimal risk to study participants. Study participants were provided an electronic informed consent.

POWER ANALYSES

A total sample of 300 active-duty service members was desired. Power recommendations for factor analytic studies were based on a ratio of participants to measure items, ranging from 3 to 10 participants per item with a minimum number of 100 participants recommended to conduct analyses (27). Given the intent of randomly dividing the recruited sample for purposes of conducting the exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), a minimum recommended sample is 200

participants. That stated, dependent on response patterns, smaller sample sizes have been demonstrated to be acceptable (33).. For test-retest reliability and other correlation analyses, a minimum of 29 responses was desired to find a medium effect size (.3) (29). A target of 300 participants was set to allow for factor analyses and the additional analyses proposed for this dissertation.

CHAPTER 5: Data Analytic Strategy

The current study utilized online responses from active-duty military adult participants. Data collection began immediately following IRB approval and continued until the desired number of participants was obtained (approximately 5 weeks). Collected data was exported from the online software SurveyGizmo into SPSS v.22 software for the purpose of cleaning and analyzing responses. For the confirmatory factor analysis, STATA v.12 was used due to its ability to conduct structural equation modeling, a notable deficit in SPSS software. Outlined below is a detailed explanation of the analyses conducted for each specific aim and hypothesis.

Aim 2. To conduct exploratory and confirmatory factor analyses of the Military Suicide Attitudes Questionnaire (MSAQ) in order to determine the latent structure of the measure.

Performed Analyses. Exploratory factor analysis (EFA) was conducted using SPSS v.22. The EFA used a VARIMAX rotation on the first half of the randomized sample (Group A) with all items included. An orthogonal solution was used, as opposed to oblique, due to the hypothesized independence of the factors and verification of independence through the use of an oblique rotation. Factors were selected based on Eigenvalues greater than 1 and a review of the scree plot, which clearly identified four

distinct factors. All items with a loading less than .35 on to the identified factors were eliminated from the measure to improve goodness of fit (20).

Confirmatory factor analysis (CFA) was conducted using STATA v.12 on the second half of the randomized sample (Group B) utilizing the identified factors and including the items retained from the EFA. A structural equation model was established using each identified factor as a latent variable and the related items as predictors.

Aim 3. To empirically examine the psychometric properties of the MSAQ.

Specific Aim 3a. To evaluate the concurrent validity of the MSAQ using the Stigma of Suicide Scale.

Performed Analyses. Pearson's product-moment correlation coefficient analyses were conducted to evaluate the concurrent validity of the MSAQ with the SOSS. An alpha level of $p < .05$ was used to determine statistical significance.

Specific Aim 3b. To examine the discriminant validity of the MSAQ.

Performed Analyses. Pearson's product-moment correlation coefficient analyses were conducted to evaluate the discriminant validity of the MSAQ with the SOQ. An alpha level of $p < .05$ was used to determine statistical significance.

Specific Aim 3c. To examine the incremental validity of the MSAQ.

Performed Analyses. Partial correlation analyses were conducted to evaluate the incremental validity of the MSAQ with the SOSS while controlling for the SOQ. An alpha level of $p < .05$ was used to determine statistical significance.

Specific Aim 3d. To examine the test-retest reliability of the MSAQ.

Performed Analyses. Pearson's product-moment correlation coefficient analyses were conducted to evaluate the test-retest reliability of the MSAQ. An alpha level of $p < .05$ was used to determine statistical significance.

Exploratory Aim 1. To evaluate the relationship between demographic factors (e.g., education, sex, branch of service, and exposure to suicide) and military attitudes toward suicide.

Performed analyses. Multiple linear regression analyses were conducted using the identified factors of the MSAQ as outcome variables and sex, education, exposure, and branch of service as predictor variables.

CHAPTER 6: RESULTS

This chapter includes the presentation of findings on the factor structure and psychometric properties of the Military Suicide Attitudes Questionnaire (MSAQ). The demographic characteristics of each sample group are presented first and summarized using descriptive statistics. To address the second aim of this study, identifying the latent structure of the MSAQ, results from the exploratory and confirmatory factor analyses are presented. Next, results regarding the validity and reliability of the MSAQ are presented using a series of correlational analyses and partial-correlation analysis. Finally, the exploratory aim of this study, evaluating the relationship between service member demographic factors and suicide attitudes, is addressed using a series of multiple linear regressions. Of note, the results for the first aim of this study, measure development, have been combined with the development process of the MSAQ in the Method section of this dissertation to avoid redundancy.

Participants: A total of 545 respondents began the survey on SurveyGizmo and 317 of these individuals (i.e., 58%) met eligibility criteria for the study (active duty and 18 years of age or older) and completed, at minimum, the MSAQ, which was one of the four measures included in the online survey packet. No data was collected from the 228

participants that did not meet the eligibility criteria, however, a review of online feedback suggested most were disqualified because they were no longer in an active-duty status. This sample was randomly divided into two groups (A and B) using the SPSS “randomize” option for purposes of conducting the exploratory and confirmatory factor analyses of the MSAQ. Additionally, a follow-up sample was identified from those willing to provide their email address for re-assessment. Figure B shows an outline of participant flow.

Demographic and Military Characteristics of Overall Sample (N = 317): The overall sample was largely Caucasian (82.6%) and male (71.0%). The relationship status of this sample was largely divided between single (41.6%) and married (48.3%). Military ranks reported were much more diverse among enlisted pay grades including 12.9% between the grades of E1-E3, 26.2% between the grades of E4-E5, and 12.3% between E6-E9. Officers were largely clustered between O1-O3 (36.9%) and O4-O6 (10.4%). No flag officers participated and warrant officers were the minority included (1.3%) in this study. All branches of the four major armed forces were represented in the sample, 41.0% of which were Air Force, 29.3% were Navy, followed by Army at 15.1%, and the Marines made up the remaining 14.5%. This sample was highly educated with 55.2% reporting a Bachelor’s degree or higher, 12.0% reported having completed an Associate’s degree, and 24.0% reported having some college but no degree. With regards to prior exposure to suicide, a majority of the sample reported having been exposed to suicide within their military unit (54.6%) and only 20.2% of the sample reported having never previously been exposed to suicide. See tables 7 and 7a for complete demographic and exposure information.

Demographic and Military Characteristics of Group A (n = 158): Group A participants were largely similar to the overall sample. Specifically, this group was also largely Caucasian (84.8%) and male (74.1%). Relationship status was primarily married (51.9%) and single (39.9%). The reported military ranks were also similar in that they were diverse across the enlisted pay grades and more heavily weighted toward junior officers (O1-O3) among officer participants. Reported military branches by participants were also similar with the heaviest concentration in the Air Force followed by Navy, Army, and Marines. Education levels were also comparable, in that the majority of the sample reported having completed a Bachelor's degree or graduate education (55.7%). Over half of this sample (54.4%) also reported prior exposure to suicide in their military unit with only 18.3% reporting no prior exposure to suicide. See Tables 8 and 9 for full demographic and exposure details.

Demographic and Military Characteristics of Group B (n = 159): Demonstrative of good randomization, Group B was very similar to Group A demographically. Participants were 67.9% male and 80.5% Caucasian. Marital status was clustered again on single (43.4%) and married (44.7%). Military ranks reported were similarly well divided across enlisted pay grades and clustered between O1-O3 for officer ranks (38.4%). Military branch reported, followed the trend of the heaviest concentration being Air Force and Navy participants. Army and Marines made up approximately 30% of the sample. Group B was also highly educated with 54.7% reporting a Bachelors or Graduate degree. More than half of this sample also reported exposure to suicide within their unit (54.7%) and only 20.8% of this sample reported no prior exposure to suicide

within their military unit or family. See Tables 8 and 9 for full demographic and exposure details.

Measurement Completion Rate (n = 265): Of the 317 participating respondents, a significant fall off was noted after completing the MSAQ. A total of 265 participants (83.6%) continued through all measures completing at least 95% of all measures. This sample was used for purposes of evaluating convergent and divergent validity between the MSAQ and other included measures. No significant differences existed between completers and non-completers with regards to demographic or military characteristics. See tables 10 and 10a for full demographic and exposure details for this group.

Demographic and Military Characteristics of the Retest Sample (n = 51): Comparable to the other groups used in this dissertation, these participants were nearly 68.6% male and 86.3% Caucasian. Marital status of these participants was similarly clustered on single and married (82.1%), however, a larger percentage of this sample was married. Military ranks reported were also diverse across enlisted pay grades and heavily weighted toward junior officers in the officer ranks (47.1%). In contrast to the previous groups, the military branches reported for this group were slightly higher for the Navy (33.3%), followed by Air Force, Army, and Marines. This group was also significantly more educated than the other participant groups with 74.5% reporting having completed a Bachelor's or Graduate degree. Exposure to suicide was not reassessed at time 2. See table 11 for full demographic details on this sample.

Missing data: Missing data was evaluated for each participant group. In total, less than 5% of items were missing per participant and less than 10% of each item was left blank. Missing data was corrected using the replace with mean function by series in

SPSS v.22. The establishing of different participant groups corrected for the majority of missing data.

AIM 2: EXPLORATORY AND CONFIRMATORY FACTOR ANALYSES OF THE MSAQ.

The second aim of this dissertation was to conduct exploratory and confirmatory factor analyses of the MSAQ in order to determine the latent structure of the measure. A three-factor solution was expected to emerge as significant: (1) Moral versus Immoral; (2) Psychache versus Pathological; and (3) Acceptance versus Rejection.

Exploratory Factor Analysis

An exploratory factor analysis was conducted on all 35 items of the MSAQ using Principal Components Analysis (PCA) with a VARIMAX rotation using the responses from “Group A.” Prior to conducting the EFA with a VARIMAX rotation, an oblique rotation was assessed to determine if significant correlation existed between factors, finding no significant correlation. The hypothesis of orthogonal factors and the lack of significant correlation between factors, support the use of a VARIMAX rotation. Table 12 shows the loadings of each item to its respective factors (items $< .35$ were not included). Four distinct factors were visible on the Scree plot (Figure C) identified by the leveling off of factors prior to the beginning of the downward trend. Further review was conducted to determine the potential impact of including the next three factors (given their Eigenvalue greater than one). Each of the additional three factors accounted for approximately 3% of the variance in responses and consisted of only one independent item. Given these findings, the analysis was repeated saving the first four factors. The Kaiser-Meyer-Olkin measure of sampling adequacy was .85, above the recommended value of .6, and the Bartlett’s test of sphericity was significant, $(\chi^2(595) = 2350.11, p <$

.01). PCA was used to identify and compute composite scores for the underlying factors of the MSAQ. The first factor explained 24.8% of the variance, the second factor explained 11.5% of the variance, the third factor explained 5.2%, and the fourth factor explained 4.9% of the variance. This four-factor model explained a cumulative total of 46.4% of the variance in the MSAQ.

Items that most strongly correlated with the first identified factor indicated attitudes of individual-based rejection versus acceptance (e.g. “People who attempt suicide shouldn’t be eligible for promotion or leadership billets” $\lambda = .78$; “I don’t want to be in a unit with someone who has a history of a suicide attempt or suicidal thoughts” $\lambda = .71$) and are presented in Table 12a. Items that most strongly correlated with the second identified factor suggested attitudes toward suicide as psychopathology (weakness or attention seeking) (e.g. “Those who attempt suicide just want attention” $\lambda = .76$; “Only cowards commit suicide” $\lambda = .67$) and are presented in Table 12b. Items that most strongly correlated with the third identified factor suggested attitudes of unit-based acceptance versus rejection (e.g. “A service member who attempts suicide requires help and support from his military unit as well as leadership” $\lambda = .76$; “Unit support can help prevent suicide” $\lambda = .62$) and are presented in Table 12c. Items that most strongly correlated with the fourth identified factor in this analysis suggested attitudes toward suicide as immoral (e.g., “Suicide is not acceptable to my religious beliefs” $\lambda = .72$; “Choosing suicide is morally wrong” $\lambda = .70$) and are presented in Table 12d.

Due to the constructs that each factor appears to measure, these factors have been labeled as (1) Individual-based rejection versus acceptance, (2) Psychopathology (weakness/attention-seeking), (3) Unit-based acceptance versus rejection, and (4)

Immoral. Each factor was re-computed using reverse scoring for negatively correlated items so that higher scores on each factor indicated stronger attitudes toward the factor name (e.g. higher scores on factor 1 indicated a greater endorsement of stigma/rejection attitudes). Item 14 was dropped from the measure at this time.

Confirmatory Factor Analysis

Confirmatory factor analyses were conducted using “Group B” on each factor identified through the exploratory factor analysis. Structural Equation Modeling (SEM) in STATA v.12 was used to conduct the CFA for each identified factor and its items independently. Model fit was identified using the three most common measures of fit: root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). RMSEA values of .05 -.08 are considered “acceptable” and .01-.05 “close” fits. CFI and TLI values between .90 and .95 are considered “acceptable” and .95 to .99 are considered “close” fits. Scores of .0 or 1.0 are considered “perfect” fits, respectively. Given that latent variables have no scale, the first assessment item’s coefficient for each CFA is constrained to 1 to allow for measurement.

Factor 1: Individual-Based Rejection versus Acceptance

The model for Factor 1 fit the hypothesized theme of “accepting versus rejecting”, with specified items indicative of stigma or rejecting attitudes toward, suicide. Error variance was covaried for responses to items 18 and 34, 31 and 33, 15 and 18, and 18 and 25. The standardized results can be seen in Figure D. The overall model was a good fit, $\chi^2 = (23, 159) = 39.49$, RMSEA = .07, CFI = .95, and TLI = .92. See Table 3 for item level analyses.

Factor 2: Psychopathology (weakness/attention-seeking)

The model for Factor 2 fit the hypothesized theme of “psychache versus pathological”, with specified items indicative of attitudes attributing suicide to weakness or attention seeking. Error variance was covaryied for responses to items 7 and 20. The standardized results can be seen in Figure E. The overall model was a good fit, $\chi^2 = (26, 159) = 40.16$, RMSEA = .06, CFI = .94, and TLI = .92. See Table 4 for item level analyses.

Factor 3: Unit-Based Acceptance versus Rejection

The model for Factor 3 fit they hypothesized theme of “accepting versus rejecting” with specified items indicative of attitudes accepting suicide as a mental health issue and a willingness to assist. Error variance was covaried for responses to items 12 and 35. The standardized results can be seen in Figure F. The overall model was a good fit, $\chi^2 = (19, 159) = 26.76$, RMSEA = .05, CFI = .97, and TLI = .95. See Table 5 for item level analyses.

Factor 4: Immoral

The model for Factor 4 fit they hypothesized theme of “moral versus immoral” with specified items indicative of attitudes viewing suicide on a scale of morality. Items 23 and 28 were removed from the model at this time. The standardized results can be seen in Figure G. The overall model was a good fit, $\chi^2 = (17, 159) = 25.25$, RMSEA = .06, CFI = .96, and TLI = .93. See Table 6 for item level analyses.

Contrary to our expectations of a 3-factor solution, a 4-factor solution emerged from the MSAQ utilizing the hypothesized constructs. Notably, the construct of “acceptance versus rejection” split between individual and unit based acceptance versus

rejection. Specifically, the items in the individual-based factor included items directly related to the individuals' attitudes toward suicide and the items in the unit-based factor were related to attitudes toward unit responsibility. After factor analysis, the final measure totals at 32 items and is best interpreted by the four identified factors (see Appendix E).

AIM 3: EMPIRICAL EVALUATION OF THE PSYCHOMETRIC PROPERTIES OF THE MSAQ.

The third aim of this dissertation was to empirically examine the psychometric properties of the MSAQ. Given the identified factor structure of the MSAQ, and the lack of a direct comparison for the total measure or its factors, only partial validity analyses were conducted. Direct comparisons for the “psychopathology” and “immoral” factors were not present in either of the additional attitude measures. However, including the SOQ and SOSS did allow for factor level comparisons of validity of the first and third factors of the MSAQ.

The first step of this aim was to evaluate the concurrent validity of the MSAQ factor “Individual-based rejection versus acceptance” using the Stigma of Suicide Scale. It was hypothesized that Individual-based rejection versus acceptance attitudes toward suicide, as measured by the MSAQ, would be positively correlated with stigma as measured by the SOSS.

In order to assess the concurrent validity, a Pearson's product-moment correlation coefficient analysis was conducted between responses on the stigma factor ($M = 2.32$, $SD = .59$) of the SOSS and the Individual-based rejection versus acceptance factor ($M = 2.15$, $SD = .60$) of the MSAQ using the “all measures” sample group, $r(263) = .63$, $p < .001$. Given the identified positive relationship, the null hypothesis could not be rejected.

The second step of this aim was to examine the discriminant validity of the MSAQ factor “Unit-based acceptance versus rejection.” It was expected that stigma attitudes toward suicide, as measured by the SOQ, would not be strongly correlated with accepting attitudes as measured by the MSAQ.

In order to assess the discriminant validity of the MSAQ a Pearson’s product-moment correlation coefficient analysis was conducted between responses on the stigma factor ($M = 2.32$, $SD = .64$) of the SOQ and the Unit-based acceptance versus rejection factor ($M = 4.30$, $SD = .49$) of the MSAQ using the “all measures” sample group finding a weak significant negative relationship, $r(263) = -.15$, $p < .05$. Given this finding, the null hypothesis could not be rejected.

The third step of this aim was to examine the incremental validity of the MSAQ factor “Individual-based rejection versus acceptance.” It was expected that the “Individual-based rejection versus acceptance” MSAQ factor would demonstrate incremental validity by remaining significantly related to stigma, as measured by the SOSS, after controlling for the stigma associated with suicide component of the SOQ.

In order to assess incremental validity a partial correlation analysis was conducted between the stigma factor for the SOSS ($M = 2.32$, $SD = .59$) and the Individual-based rejection versus acceptance factor for the MSAQ ($M = 2.15$, $SD = .60$), while controlling for the stigma factor of the SOQ ($M = 2.31$, $SD = .65$) using responses from the “all measures” sample group. A significant positive correlation was found between the SOSS and MSAQ after controlling for the SOQ, $r(263) = .42$, $p < .001$. Given this identified positive relationship, the null hypothesis could not be rejected.

The final step of this aim was to examine the test-retest reliability of the MSAQ.

It was expected that the MSAQ would demonstrate strong test-retest reliability based on measurement at time 1 (baseline) and time 2 (two-weeks post-baseline).

In order to assess test-retest reliability of the MSAQ, participants were asked to provide their email address if they were willing to be contacted (via email) two weeks after completing the baseline assessment to complete a second assessment. At time two, to ease the time burden, only basic demographic items, MSAQ responses, and email addresses were collected. Additionally, given the need for only 29 participants for appropriate power, only participants who responded within the first 3 weeks of administration were contacted for the follow up assessment.

In total, 130 participants who provided email addresses were contacted for follow up assessment. Of the participants contacted, approximately 39% (51) completed the follow up assessment with an average response time of 14 days. Pearson's product-moment correlation coefficient analyses were conducted in order to test hypothesis 3c finding significant results. Test-retest reliability between total score for time 1 ($M = 3.22$, $SD = .28$) and time 2 ($M = 3.20$, $SD = .27$) results were significant, $r(49) = .76$, $p < .001$. Further test-retest analyses were conducted by factor to assess reliability of each construct. For the first factor, Individual-based rejection versus acceptance, strong reliability was found between time 1 ($M = 2.02$, $SD = .57$) and time 2 ($M = 2.14$, $SD = .61$), $r(49) = .89$, $p < .001$. For the next factor, immoral, a strong reliability was also found between time 1 ($M = 2.67$, $SD = .77$) and time 2 ($M = 2.66$, $SD = .72$), $r(49) = .86$, $p < .001$. Strong reliability was also found for psychopathology between time 1 ($M = 2.01$, $SD = .59$) and time 2 ($M = 1.97$, $SD = .59$), $r(49) = .83$, $p < .001$. A weaker, but still statistically significant reliability was found for Unit-based acceptance versus rejection

between time 1 ($M = 4.38$, $SD = .40$) and time 2 ($M = 4.40$, $SD = .27$), $r(49) = .59$, $p < .001$. Given the overall findings, the null hypothesis could not be rejected.

EXPLORATORY AIM 1: EVALUATION OF DEMOGRAPHIC FACTORS AND MILITARY ATTITUDES TOWARD SUICIDE.

The exploratory aim of this dissertation was to evaluate the relationship between demographic factors (e.g., education, sex, branch of service, and exposure to suicide) and military attitudes toward suicide. It was expected that higher levels of education, female sex, branch of service, and exposure to suicide would predict (be associated with) more accepting (non-stigmatizing) responses on the MSAQ. All findings are presented in Table 13.

A multiple regression was conducted using education level [less than 9th grade, 9th-12th grade no diploma, high school graduate or equivalent, some college no degree, associate degree, bachelor's degree, and graduate or professional degree], sex [male, female], branch of service [Army, Navy, Air Force, and Marines], and exposure to suicide [yes, no] as independent factors and the MSAQ Individual-based rejection versus acceptance factor as the dependent factor. No significant relationship was found among these factors, $R^2 = .00$, $F(4, 304) = .34$, $p = .85$, *ns*.

A multiple regression was conducted using education level [less than 9th grade, 9th-12th grade no diploma, high school graduate or equivalent, some college no degree, associate degree, bachelor's degree, and graduate or professional degree], sex [male, female], branch of service [Army, Navy, Air Force, and Marines], and exposure to suicide [yes, no] as independent factors and the MSAQ Psychopathology factor as the dependent factor. No significant relationship was found among these factors, $R^2 = .01$, $F(4, 312) = .47$, $p = .76$, *ns*.

A multiple regression was conducted using education level [less than 9th grade, 9th-12th grade no diploma, high school graduate or equivalent, some college no degree, associate degree, bachelor's degree, and graduate or professional degree], sex [male, female], branch of service [Army, Navy, Air Force, and Marines], and exposure to suicide [yes, no] as independent factors and the MSAQ Unit-based acceptance versus rejection factor as the dependent factor. A significant relationship was found, where these factors accounted for 4.2% of the variance in unit-based acceptance versus rejection, $R^2 = .04$, $F(4, 312) = 3.39$, $p < .05$. Specifically, education showed a significant positive correlation with Unit-based acceptance, $\beta = .06$, $t(310) = 2.82$, $p < .01$.

A multiple regression was conducted using education level [less than 9th grade, 9th-12th grade no diploma, high school graduate or equivalent, some college no degree, associate degree, bachelor's degree, and graduate or professional degree], sex [male, female], branch of service [Army, Navy, Air Force, and Marines], and exposure to suicide [yes, no] as independent factors and the MSAQ Immoral factor as the dependent factor. No significant relationship was found among these factors, $R^2 = .02$, $F(4, 311) = 1.54$, $p = .19$, *ns*.

CHAPTER 7: DISCUSSION

The present study sought to develop and evaluate the Military Suicide Attitudes Questionnaire (MSAQ). To date, a psychological instrument that is specifically designed to measure the attitudes of active-duty military service members towards suicide has not been available. Therefore, the development and empirical examination of the MSAQ was conceptualized to address this notable gap. The newly developed and partially validated 32-item MSAQ, as presented in this dissertation (see Appendix E), is recommended for future use by researchers who either in the course of conducting suicide prevention program evaluation studies or other projects require tracking of military attitudes toward suicide. However, further examination and replication of MSAQ findings, as presented here are needed in order to solidify the utility, validity, and reliability of the MSAQ. If the MSAQ performs well in future psychometric evaluations, the measure can be additionally used in the following manner: (1) providers and medical leaders can utilize data derived from the MSAQ for the tracking of attitudes towards suicide among patients as well as their military treatment facility providers, and (2) military leaders and policy makers who are interested to gain a more in-depth understanding of community attitudes

toward suicide can utilize data derived from the MSAQ for the tailoring of targeted DoD anti-stigma campaign resources.

The first phase of this study, which focused on measure development, utilized information from existing suicidology literature as well as guidance derived from subject matter experts (researchers and active-duty service members (representing all four major branches of the armed services)). Additionally, once item generation for the new measure was complete, these items were subsequently rated by the nation's top suicidologists and other psychology experts for the selection of the most suitable final items to be included in the MSAQ. The inclusion of target population members and subject matter experts in the item development and review process increased the construct validity and cultural sensitivity within the MSAQ. The second phase of this study, which focused on the psychometric evaluation of the MSAQ, utilized standard as well as more complex statistical analyses (e.g., structural equation modeling) in order to arrive at the final MSAQ measure. Notably, given the lack of instruments to which the MSAQ could be compared to in its entirety, only factor-level analyses of validity could be conducted. A total of 317 respondents met eligibility criteria for the study and completed, at minimum, the MSAQ, which was one of the four measures included in their online survey packet.

The overall sample that participated in this study was comprised of members from all four major branches of the U.S. Armed Forces. Multiple occupations and all pay grades were represented with the exception of flag level officers (O7-O10). Given the sampling method, and the desire to have members from multiple branches of service, the sample is not directly comparable to any specific branch or service, rather it is a sampling from each. While this serves to assess feasibility of the measure with the armed services,

it may also limit generalizability (e.g., Veterans, National Guard, and/or Reserves). For the analyses within this study, randomization of the sample was effective in that Group A and Group B did not significantly differ from one another or the overall sample.

First, the newly developed 35-item MSAQ was examined empirically via an exploratory factor analysis (i.e., Principal Components Analysis with a VARIMAX rotation) conducted using half of the participant pool. This statistical strategy helped identify the latent structure of the MSAQ, accounted for approximately half of the total variance in responses, and resulted in four meaningful and interpretable factors that held closely to the hypothesized outcome, while removing only 1 item from the measure. The a-priori expectation was that a three-factor solution to the MSAQ would emerge consisting of (1) Moral versus Immoral; (2) Psychache versus Pathological; and (3) Acceptance versus Rejection.

Findings from the exploratory factor analysis suggested a four-factor solution to the MSAQ but with closer inspection, two of the factors (both emphasizing ‘Acceptance versus Rejection’) were very closely tied conceptually, with identifying attitudes in the direction of individual-based rejection and the next identifying attitudes in the direction of unit-based acceptance. The factor of ‘*Individual-Based* Rejection versus Acceptance’ was the first to be observed and explained almost 25% of the variance in the MSAQ. The items in this factor reflected *individual* attitudes related to accepting or rejecting a suicidal person where higher scores are indicative of more rejecting attitudes. The factor of ‘Psychache versus Pathological’ was the second to be observed and explained almost 12% of the variance in the MSAQ. The factor of ‘*Unit-Based* Acceptance versus Rejection’ was the third to be observed – this time reflecting *unit-based* attitudes related

to accepting or rejecting a suicidal person and accounting for 5% of the variance in the MSAQ, here, higher scores were indicative of more accepting (non-stigmatizing) attitudes toward individuals exhibiting suicide behaviors. Finally, the factor of ‘Moral versus Immoral’ was the fourth factor to be observed and explained almost another 5% of the variance in the MSAQ. Notably, the confirmatory factor analysis, using the second half of participants, confirmed the factor model with strong goodness of fit statistics while removing only 2 additional items. The end result of a 32-item measure with a replicated factor model is significant.

The factor structure identified for the MSAQ has some commonalities with previous factors found for the SOQ within a military sample (71), however with several key additions. In comparison to the SOQ factors (erroneous assumptions about suicide, emotional perturbation, acceptability, and stigma associated with suicide), the MSAQ accounts for attitudes related to psychopathology, acceptance, and stigma within its factor structure. Notably, the items loading to these factors hold together much stronger conceptually, can be easily interpreted, and address both individual and unit attitudes towards suicide. The SOQ factor of “Erroneous Assumptions about Suicide” is not present in the MSAQ, possibly due to the lack of “factual” items included, however this allows for a more clear attitudinal measure using only 32 items as compared to the 100 included in the SOQ.

Item level review of the MSAQ identified notable patterns of scores across participants. Specifically, mean responses to items suggest the overall sample holds strong attitudes that the military unit carries significant responsibility in helping those in a suicidal crisis. Additionally, this sample reported attitudes that suicide is detrimental to

unit functioning, and that seeking assistance for suicidal behaviors takes courage and should not result in punishment or harm to one's career. One caveat to this point, the sample did lean towards having reservations about working with leaders who had a history of suicidal behavior. The sample was more equivocal regarding how one should seek help, with many leaning towards "man up and tough it out." Notably, the sample did not overly endorse attitudes that suicide attempts were to gain attention or be excused from duty. These response patterns suggest several areas for garnering individual support for suicide prevention as well as areas for intervention. Specifically, capitalizing on service member's attitudes of unit responsibility and increasing awareness of methods of treatment.

Finally, a psychometric evaluation of the MSAQ was conducted by examining the concurrent, discriminant, and incremental validities of its factor structure and test-retest reliability for the entire measure. Overall, all forms of partial validity and reliability were observed as predicted and suggested solid psychometric properties for the MSAQ. More specifically, in terms of concurrent validity, the MSAQ '*Individual-Based* Rejection versus Acceptance (i.e., Factor 1) showed a significant positive correlation with the stigma factor of the Stigma of Suicide Scale (a validated measure of stigma). This finding on concurrent validity supports the notion that the MSAQ selected factor is indeed assessing stigma. In terms of discriminant validity, the MSAQ '*Unit-Based* Acceptance versus Rejection' (i.e., Factor 3) showed a small, but still statistically significant, negative correlation with the stigma factor of the Suicide Opinions Questionnaire. This finding supports the discriminant validity of the unit-based acceptance versus rejection factor. Moreover, in terms of incremental validity, a

significant positive correlation was found between the SOSS and MSAQ stigma-related factors, after controlling for the stigma associated with the suicide component of the Suicide Opinion Questionnaire, demonstrating the MSAQ accounts for unique variance in responses.

Test-retest reliability was fully assessed over a two-week longitudinal period for the MSAQ total score as well as for each of the four identified factors of the MSAQ. In all of these analyses, a significant correlation between time 1 and time 2 of measurement was found. The test-retest reliability was notably weaker, although statistically significant, for the unit-based acceptance versus rejection factor of the MSAQ when compared to the total response and other three identified factors. These findings suggest attitudes of military units may be less stable over time than the more individually based opinions towards rejection, psychopathology, and immorality. Given the context of a rapidly changing active-duty population and high operational tempo, these findings should be expected, and may lend credibility to the sensitivity of the MSAQ. However, this is a finding that should be investigated in future research and validation efforts of this measure.

Based on the dissertation findings, outlined above, the MSAQ appears to offer a number of advantages over the existing psychological instruments that measure attitudes toward suicide. First, the MSAQ demonstrates a clear-cut factor structure and shows consistently high validity and reliability in terms of serving as a measure of suicide attitudes within the military. Second, the MSAQ consists of 32 items and the length of administration for the measure averaged six minutes. Third, the measure is culturally sensitive to the needs of the DoD in terms of measuring attitudes on suicide among

service members while using language that is most appropriate and understandable in the military occupational setting. This third contribution is assumed based on the construct and face validity of the measure. Further, reading level assessment of items ranged from 4th to 11th grade, making it accessible to the target population. Finally, in comparison with the current “gold standard” suicide opinion questionnaire (i.e., the Suicide Opinions Questionnaire consisting of 100 items) developed in 1982, the MSAQ appears to fare far better among respondents. Given the order in which the assessments were administered to participants, it was ascertained that the SOQ measure created the largest “fall out” point for participants. Additionally, qualitative data pointed to difficulties with the SOQ measure (e.g., comments posted on message forums). For instance, participants selected the “neutral” response for multiple items because they “did not know the answer”, the SOQ “has too many items, did not complete”, and it “seemed irrelevant” – all of which, though anecdotal in nature, appear to have introduced significant problems in administration and interpretation of this measure.

Limitations and Strengths

Several limitations should be considered in interpretation of these findings. The foremost limitation of the study is the sampling method utilized. Using a convenience sample limited respondents to those who have access to a computer and those who frequented the sites in which the assessment was linked. Furthermore, having a voluntary test-retest pool may have selected individuals who were highly motivated to participate in this research. In addition, the time required to complete the survey (30-40 minutes) may have discouraged participation from many active-duty service members.

Conducting web-based research also poses a significant limitation to the study in that we were unable to guarantee the research participants were active-duty service members. A number of checks existed including the participant screening items and the demographics sheet in which participants were asked to provide military-related information. Additionally, participants received no financial compensation for participating in the study. Also, a review of email addresses provided for follow-up assessment included 31 military email addresses (N = 112, 34.7%). Despite these checks, it is possible but unlikely that non-active military personnel completed the survey; therefore, future validation research should make an effort to assess participants in person or implement a strategy for confirming active duty status.

An additional limitation exists regarding participant demographics. This sample contained significantly more officers, females, Caucasians, and those with higher educational attainment than the general military population. This was likely influenced by the data collection strategy used for the current study and therefore, the generalizability of this study's findings needs to be closely examined in future research. That stated, in the exploratory aim of this study, gender, education, branch of service, and exposure to suicide (as predictors) were regressed to each of the identified factors. Results of regression analyses failed to indicate significant results with the exception of education on the Unit-Based Acceptance versus Rejection factor.

Given the significant number of officers present in this sample, subsequent regression analyses were conducted to determine if military rank predicted differences in response to the identified factor structure. Rank was dichotomized, using enlisted and officer as the predictor variable for each factor. Only one significant difference was

found, specifically, that officers were significantly more likely to report attitudes toward suicide as immoral. All regression results are presented in Table 13. These results would suggest these factors did not play a significant role in determining the factor structure of the MSAQ, however, further research should be conducted with a more representative sample of each branch of service.

One final possible limitation to this dissertation was the lack of assessment for social desirability in responding during the validation of the MSAQ. A significant body of literature suggests social desirability influences response styles to measures and interviews. However, it has also been posited that given the presence of social desirability in responding from early age – controlling for social desirability may contribute to the loss of true variance in responses (56). Further, common practice in developing attitudinal measures toward suicide or military-specific measures have not included controls for social desirability (8; 26; 36). Given these reasons in addition to the length of the assessment packet, the decision was made to not include an additional measure for social desirability. However, the strong negative responses toward the military handling of suicide which was provided on online recruitment sites may suggest some anecdotal evidence that social desirability may not have been a significant factor in response styles to the MSAQ. It is possible that social desirability did have a significant effect on these findings and the inclusion of a social desirability scale should be considered for future research validating the MSAQ.

Despite the noted limitations, a number of strengths are noted. First and foremost, the MSAQ is the first attitudinal measure toward suicide designed specifically for use within a military population. Given the public health significance of suicide and the

desperate need for robust and well-designed program evaluation research within the DoD (61), there is a notable need for validated instruments for use with the military, specifically for tracking of attitudinal change (i.e., what many have labeled as a culture shift). The MSAQ was developed through a rigorous scientific process involving experts in the fields of suicidology and military psychology as well as contributions from all five dissertation committee member scientists.

The sampling method utilized ensured a sample including all four major branches of the armed forces stationed globally. In addition, it included members from nearly every pay grade (i.e., no flag officer participation) and several occupation fields. The specific focus on active-duty service members allowed for findings unique to the active force, such as the factor on unit-based acceptance versus rejection, which parallels previous findings on organizational barriers to mental health care in an active-duty sample (71). This specific focus also allows for the cultural specificity necessary for future evaluations of active-duty suicide prevention training. However, the lack of inclusion of national guard, reserve, and retired service members does limit the generalizability of this measure solely to active-duty members. Future research with these populations should be considered to expand the utility of the MSAQ.

The sample size is also an identified strength of this study. Having more than 300 participants allowed for both exploratory and confirmatory factor analyses on randomized halves of the participant pool. For all analyses within this study, the total participant number exceeded minimum power recommendations. The analyses supported the factor structure and psychometrics of this newly developed measure, which appears to be a

promising addition to the existing pool of measures available to researchers interested in military suicide prevention.

Research and Practice Implications

The MSAQ provides a useful and partially validated tool for assessing attitudes toward suicide among military service members – and may be adapted and examined in the future for use among Veterans. The MSAQ can be used in a variety of research and practice arenas, in the years to come, pending further examination and testing. The MSAQ may serve to gauge attitudes toward suicide in the military community, and given the established relationship between community attitudes toward suicide and suicide incidence, this would serve as a useful marker for the tracking of risk across military units. Additionally, the MSAQ may fill the identified gap in measuring effectiveness of military suicide prevention programs. Given that all services are currently using number of suicides as a marker for effectiveness for their suicide prevention programming – a noted limitation – the MSAQ may serve as a proxy measure for effectiveness by providing data on pre and post attitude change on suicide. Suicide prevention programs, using a measure such as MSAQ, can be better tailored to the specific needs of a specific community. For instance, if a group of service members from a specific community score notably higher than the normative sample on stigma towards suicidal individuals, training can specifically target this domain. One may argue that targeted trainings may become a cost-effective approach to utilizing scarce resources in suicide prevention across the DoD.

In the years to come, pending further evaluation, the MSAQ may also be useful with clinical populations in the U.S. Military. While suicide attitude research has

traditionally evaluated the attitudes of individuals regarding suicide in non-clinical samples, recently, significant research has been conducted investigating implicit attitudes toward suicide to identify individuals at risk for suicide behaviors (55). Future research with those at risk for suicide may serve to establish a baseline of attitudes for use in identifying change in this group or identifying individuals who may be at risk for suicidal behaviors. Additionally, future research may consider administering this measure to military service members who have had suicidal thoughts and behaviors such that any potential attitudinal differences on suicide among healthy versus patient samples can be established. This process may serve to establish normative responses for potential cut-off points when used within a clinical population. It is important to note that use of the MSAQ with clinical populations, at this point, is considered premature and providers are urged to be cautious in their science-to-practice implementation until additional research on the MSAQ has been performed.

Conclusion

This dissertation study resulted in the development and the empirical evaluation of the Military Suicide Attitude Questionnaire using primary data collected online. The MSAQ is the first of its kind and has the potential of meeting significant research, clinical, and policy needs within the U.S. Military. The analyses conducted within this dissertation served to demonstrate the interpretability, reliability, and validity of the MSAQ which has now been partially validated. The MSAQ appears to be a promising measure for future use within military populations but requires additional testing and evaluation. Future research directions with this measure should include a service-wide trial to re-evaluate the factor structure with a larger, non-convenience sample.

REFERENCES

1. 2011. Population representation in the military services
2. Ajzen I. 1991. The theory of planned behavior. *Journal of Organizational Behavior and Human Decision Processes* 50:179-211
3. Anderson A. 2007. *A psychometric exploration of the suicide opinion questionnaire*. Dissertation. The University of Akron, Akron, OH
4. Aseltine R, & DeMartino, R. 2004. An outcome evaluation of the SOS suicide prevention program. *American Journal of Public Health* 94:446-51
5. Bagley, Munjas, Shekelle. 2010. A systematic review of suicide prevention programs for military or veterans. *Suicide and Life Threatening Behavior* 40:257-65
6. Bandura A. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall
7. Batterham PJ, Calear AL, Christensen H. 2013. Correlates of suicide stigma and suicide literacy in the community. *Suicide & life-threatening behavior* 43:406-17
8. Batterham PJ, Calear AL, Christensen H. 2013. The Stigma of Suicide Scale. Psychometric properties and correlates of the stigma of suicide. *Crisis* 34:13-21
9. Beck J. 2011. *Cognitive Behavior Therapy: Basics and Beyond*. Guilford Publications, Inc.
10. Bem D. 1967. Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review* 74:183-200
11. Bryan CJ, David Rudd M, Wertenberger E, Etienne N, Ray-Sannerud BN, et al. 2014. Improving the detection and prediction of suicidal behavior among military personnel by measuring suicidal beliefs: an evaluation of the Suicide Cognitions Scale. *Journal of affective disorders* 159:15-22
12. Cacioppo J, Petty, R., & Crites, S. 1994. Attitude Change. In *Encyclopedia of Human Behavior*: Academic Press

13. Center AFHS. 2014. Surveillance snapshot: manner and cause of death, active component, U.S. armed forces, 1983-2013. *Medical Surveillance Monthly Report* 21:21
14. Center SPR. 2014. Army ACE Suicide Intervention Program.
15. Choi MK, Seo JM. 2011. [Attitudes of adolescents toward suicide: Q-methodological approach]. *Journal of Korean Academy of Nursing* 41:539-49
16. Clark L, Watson D. 1995. Constructing validity: Basic issues in objective scale development. *Psychological Assessment* 7:309-19
17. Control CfD. 2014. WISQARS.
18. Control TCfD. 2014. Learn about the costs of violent deaths.
19. Corps USM. 2012. Call to action for preventing Marine suicides.
20. Costello A, & Osborne, J. 2005. Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation* 10:1-9
21. Defense Do. 2010. The challenge and the promise: strengthening the force, preventing suicide and saving lives.
22. Defense Do. 2010. Report of the Department of Defense Task Force on the Prevention of Suicide by Members of the Armed Forces.
23. Diekstra R, & Kerkhof, A. 1989. Attitudes towards suicide: The development of a suicide-attitude questionnaire (SUIATT). In *Suicide and its Prevention: The Role of Attitude and Limitation*, ed. R Diekstra, Maris, R., Platt, S., Schmidtke, A., & Sonneck, G.: Leiden: E.J. Brill. Number of.
24. Domino G, Gibson, L., Poling, S., & Westlake, L. . 1980. Students' attitudes toward suicide. *Social Psychiatry* 15:127-30
25. Domino G, MacGrego, J., & Hannah, T. 1988-1989. Collegiate attitudes toward suicide: New Zealand and United States. *Omega* 19:351-64
26. Domino G, Moore, D., Westlake, L., & Gibson, L. 1982. Attitudes toward suicide: A factor analytic approach. *Journal of Clinical Psychology* 38:257-62
27. Fabrigar L, Wegener, D., MacCallum, R., & Strahan, E. 1999. Evaluating the use of exploratory factor analysis in psychological research. *Journal of Psychological Methods* 4:272-99
28. Festinger L. 1957. *A Theory of Cognitive Dissonance*. California: Stanford University Press
29. Field A. 2009. *Discovering Statistics Using SPSS* Thousand Oaks, CA: SAGE
30. Fishbein M, & Ajzen, I. 1975. *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley
31. Foo XY, Alwi MN, Ismail SI, Ibrahim N, Osman ZJ. 2014. Religious commitment, attitudes toward suicide, and suicidal behaviors among college students of different ethnic and religious groups in Malaysia. *Journal of religion and health* 53:731-46
32. Ghahramanlou-Holloway M, Cox, D., & Greene, F. 2012. Post-admission cognitive therapy: A brief intervention for psychiatric inpatients admitted after a suicide attempt. *Cognitive and Behavioral Practice* 19:233-44
33. Guadagnoli E, & Velicer, W. 1988. Relation of sample size to the stability of component patterns. *Psychological Bulletin* 103:265-75

34. Hathaway S, McKinley J. 1940. A multiphasic personality schedule (Minnesota): Construction of the schedule. *Journal of Psychology* 10:249-54
35. Herron J, Ticehurst, H., Appleby, L., Perry, A., & Cordingley, L. 2001. Attitudes toward suicide prevention in front-line health staff. *Suicide and Life Threatening Behavior* 31:342-7
36. Hoge CW, Castro CA, Messer SC, McGurk D, Cotting DI, Koffman RL. 2004. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England journal of medicine* 351:13-22
37. Holmbeck G, Devine K. 2009. An author's checklist for measure development and validation manuscripts. *Journal of Pediatric Psychology* 34:691-6
38. Hovland C, & Weiss, W. 1951-1952. The influence of source credibility on communication effectiveness. *Public Opinion Quarterly* 15:635-50
39. Ireland R, Ghahramanlou-Holloway, M., & Brown, D. . 2013. Ongoing efforts to address the public health problem of military suicide within the United States Department of Defense. In *Military health care: from pre-deployment to post-separation*, ed. JAA Hendricks. Abingdon: Routledge. Number of.
40. Katz D. 1960. The functional approach to the study of attitudes. *Public Opinion Quarterly* 24:163-204
41. Knox, Litts, Talcott, Feig, Caine. 2003. Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: cohort study. *British Medical Journal* 327:1376
42. Kodaka M, Inagaki M, Postuvan V, Yamada M. 2013. Exploration of factors associated with social worker attitudes toward suicide. *The International journal of social psychiatry* 59:452-9
43. Kodaka M, Postuvan V, Inagaki M, Yamada M. 2011. A systematic review of scales that measure attitudes toward suicide. *The International journal of social psychiatry* 57:338-61
44. Lake AM, Kandasamy S, Kleinman M, Gould MS. 2013. Adolescents' attitudes about the role of mental illness in suicide, and their association with suicide risk. *Suicide & life-threatening behavior* 43:692-703
45. Lapiere R. 1934. Attitudes vs. actions. *Social Forces* 13
46. Lester D. 2009. An attempt to improve the Suicide Opinion Questionnaire (SOQ). *Omega* 60:383-95
47. Lewis G, Oh S. 2008. Public support and state action on same sex marriage. *State and Local Government Review* 40
48. Likert R. 1932. A technique for the measurement of attitudes. *Archives of Psychology* 140:1-55
49. Litman R, & Farberow, N. 1961. Emergency evaluation of self-destructive behavior. In *The Cry For Help*, ed. N Farberow, & Schneidman, E. New York: McGraw-Hill. Number of.
50. Maio G, Haddock G. 2010. *The Psychology of Attitudes and Attitude Change*. London: SAGE Publications Ltd.
51. McCullough J, & Ostrom, T. 1974. Repetition of highly similar messages and attitude change. *Journal of Applied Psychology* 59:395

52. Moussaid M, Kammer JE, Analytis PP, Neth H. 2013. Social influence and the collective dynamics of opinion formation. *PloS one* 8:e78433
53. Nader IW, Tran US, Baranyai P, Voracek M. 2012. Investigating dimensionality of Eskin's attitudes toward suicide scale with Mokken scaling and confirmatory factor analysis. *Archives of suicide research : official journal of the International Academy for Suicide Research* 16:226-37
54. Navy US. 2014. Frontline Supervisors Training: Manual for instructors and students.
55. Nock MK, Park JM, Finn CT, Deliberto TL, Dour HJ, Banaji MR. 2010. Measuring the suicidal mind: Implicit cognition predicts suicidal behavior. *Psychological science*:1-7
56. Ones D. 1996. Role of social desirability in personality testing for personnel selection: The red herring. *Journal of Applied Psychology* 81:660-79
57. Organization WH. 2014. Suicide rates.
58. Ouzouni C, & Nakakis, K. 2009. Attitudes towards attempted suicide: the development of a measurement tool. *Health Science Journal* 3:222-31
59. Pompili M, Mancinelli, I., & Tatarelli, R. 2003. Stigma as a cause of suicide. *The British Journal of Psychiatry* 183:173-4
60. Prevention USDoHaHSHOotSGaNAAfS. 2012. National strategy for suicide prevention: goals and objectives for action. , Washington, DC.
61. Ramchand R, Acosta, J., Burns, R., Jaycox, L., & Pernin, C. 2011. RAND report
62. Reynders A, Kerkhof AJ, Molenberghs G, Van Audenhove C. 2014. Attitudes and stigma in relation to help-seeking intentions for psychological problems in low and high suicide rate regions. *Social psychiatry and psychiatric epidemiology* 49:231-9
63. Rogers JR, DeShon RP. 1992. A reliability investigation of the eight clinical scales of the Suicide Opinion Questionnaire. *Suicide & life-threatening behavior* 22:428-41
64. Rogers JR, DeShon RP. 1995. Cross-validation of the five-factor interpretive model of the Suicide Opinion Questionnaire. *Suicide & life-threatening behavior* 25:305-9
65. Ruble AE, Leon PJ, Gilley-Hensley L, Hess SG, Swartz KL. 2013. Depression knowledge in high school students: effectiveness of the adolescent depression awareness program. *Journal of affective disorders* 150:1025-30
66. Shneidman E. 1993. Suicide as psychache. *Journal of Nervous and Mental Disease* 181:145-7
67. Smolenski D, Reger, M., Alexander, C., Skopp, N., Bush, N., Luxton, D., & Gahm, G. 2012. Department of Defense Suicide Events Report
68. Talcott WC, P. 2001. U.S. Air Force Suicide Prevention Program.
69. Tanielian T, & Jaycox, L. 2008. Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery. RAND
70. Thurstone L. 1928. Attitudes can be measured. *American Journal of Sociology* 33

71. VanSickle M. 2013. *Opinions on Suicide and Perceived Barriers to Care in a Sample of United States Marine Non-Commissioned Officers: Implications for Future Frontline Supervisors' Suicide Prevention Training Programs.* Uniformed Services University of the Health Sciences
72. Walsh A. 2013. Marine and family programs prevention services update. .
73. Watts WA. 1967. Relative persistence of opinion change induced by active compared to passive participation. *Journal of personality and social psychology* 5:4-15
74. Zajonc R. 1968. Attitudinal effects of mere exposure. *Journal of personality and social psychology* 9:1-27

Figures

Figure A. Research Design.

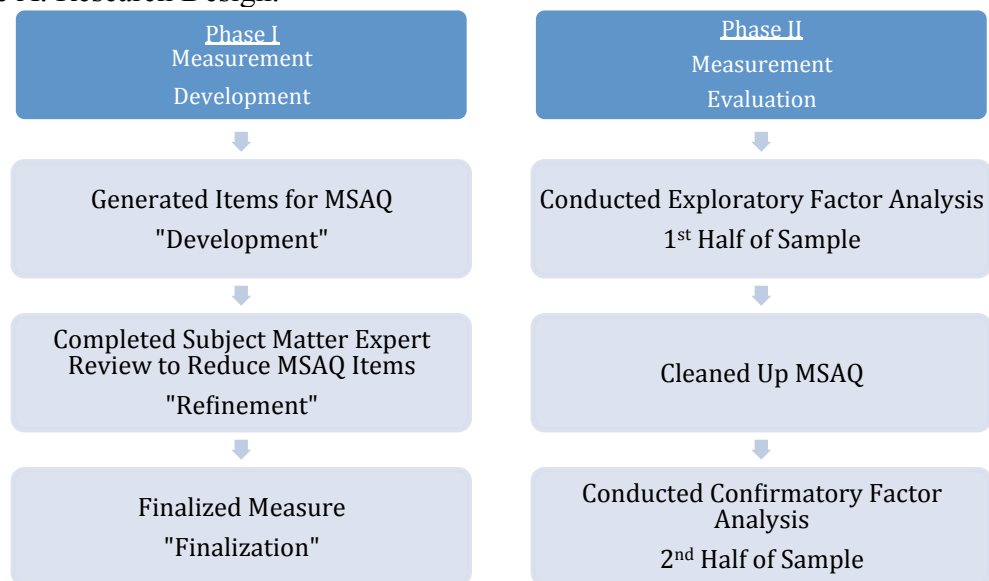


Figure B. Participant Flow Diagram.

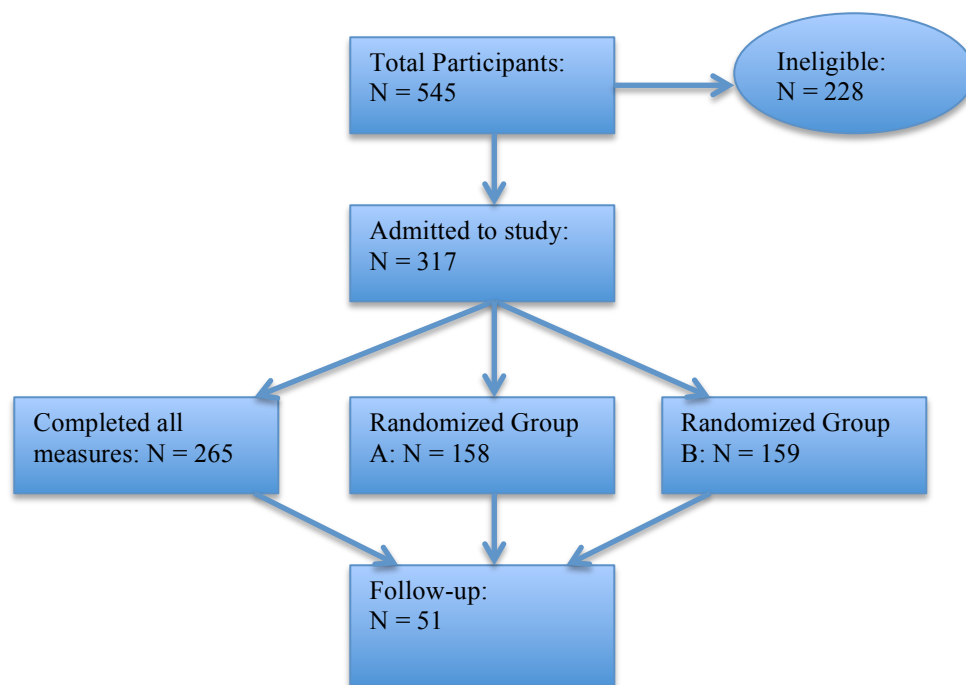


Figure C: MSAQ Principal Components Analysis Scree Plot

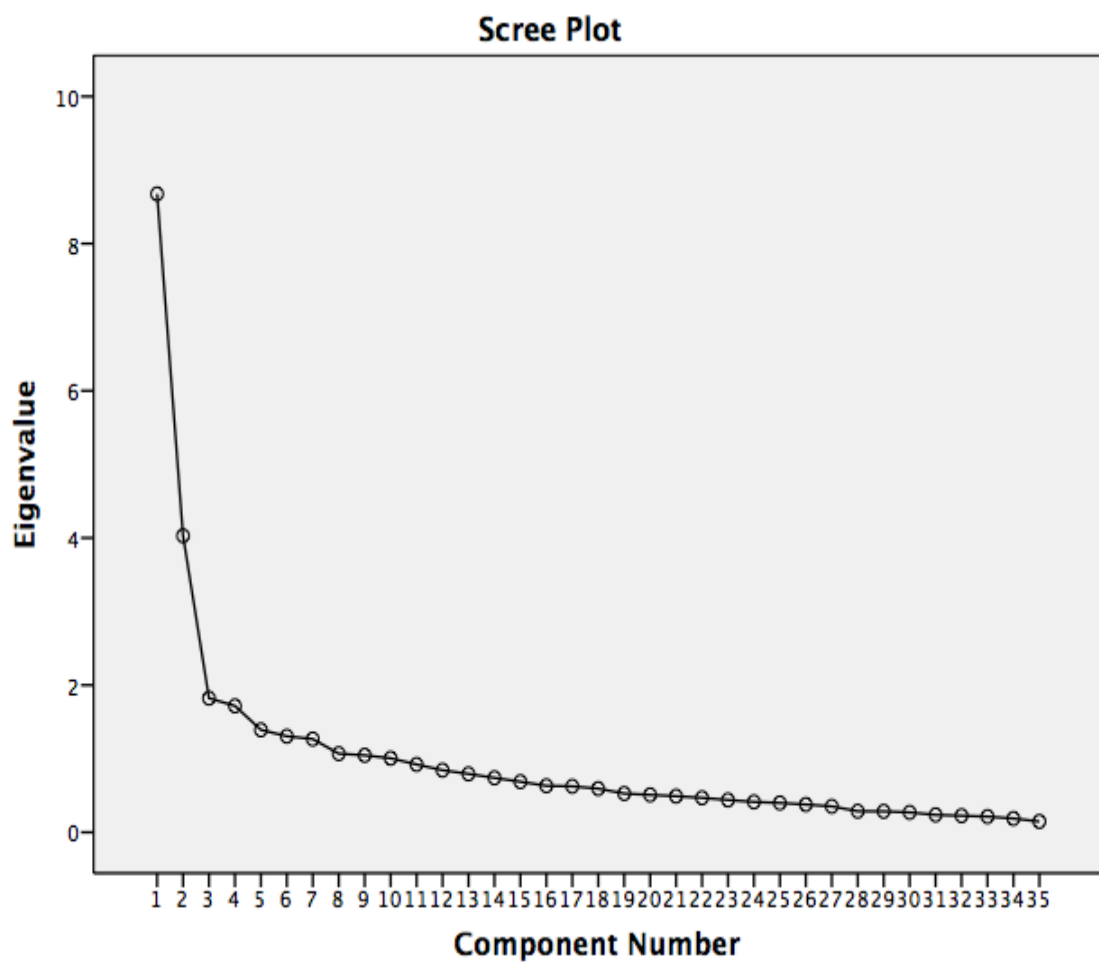


Figure D: SEM Path Model between items and Factor 1: Individual-Based Rejection versus Acceptance.

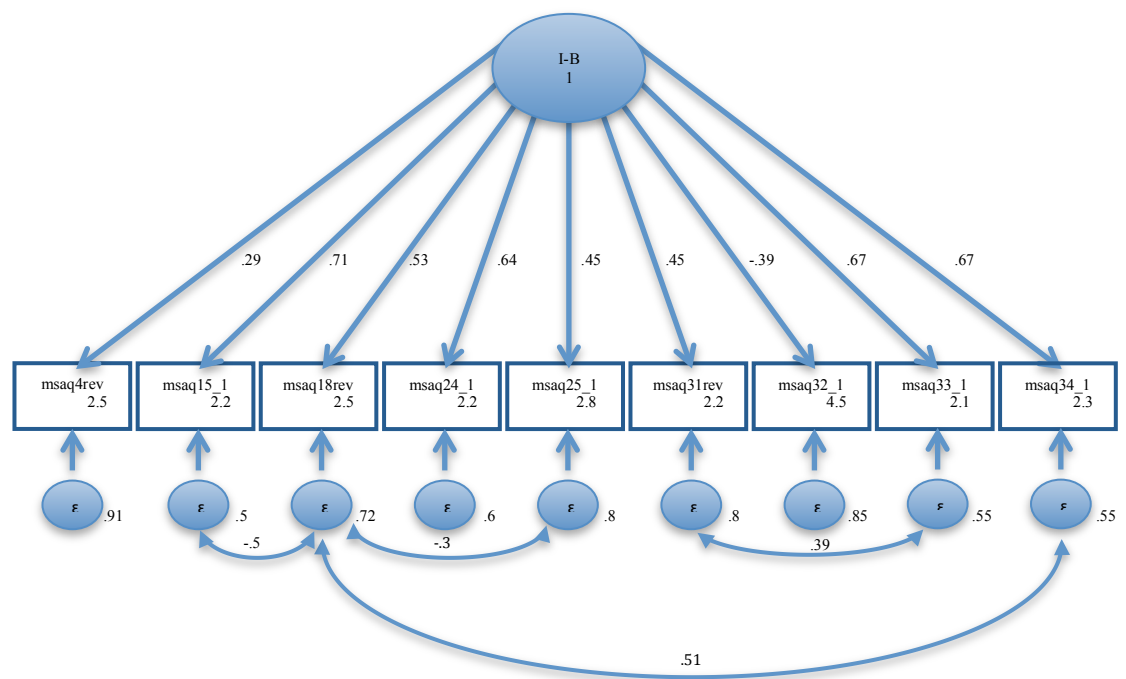


Figure E: SEM Path Model between items and Factor 2: Psychopathology

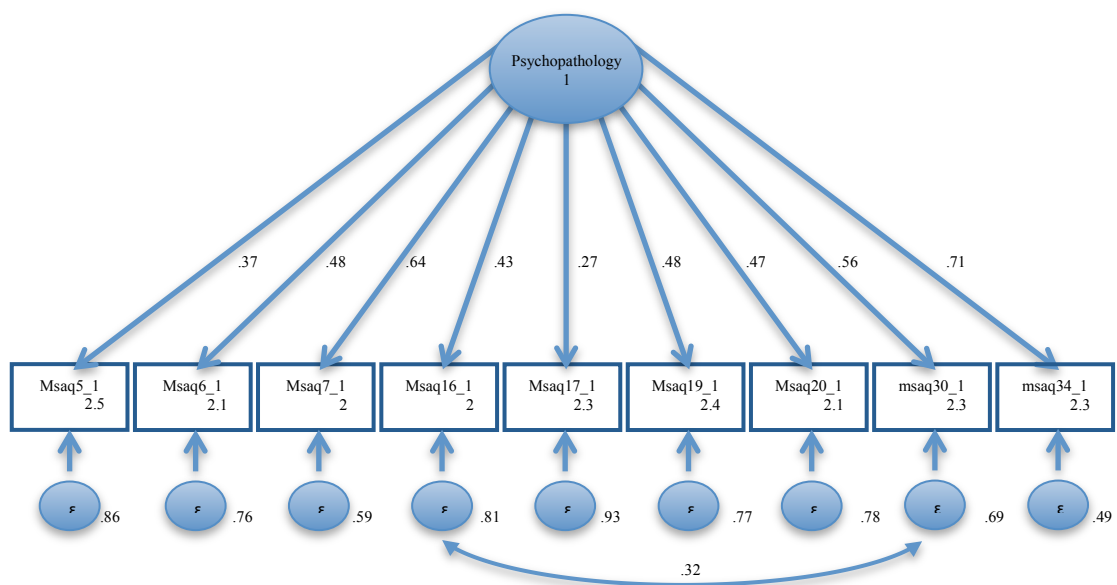


Figure F: SEM Path Model between items and Factor 3: Unit-Based Acceptance versus Rejection

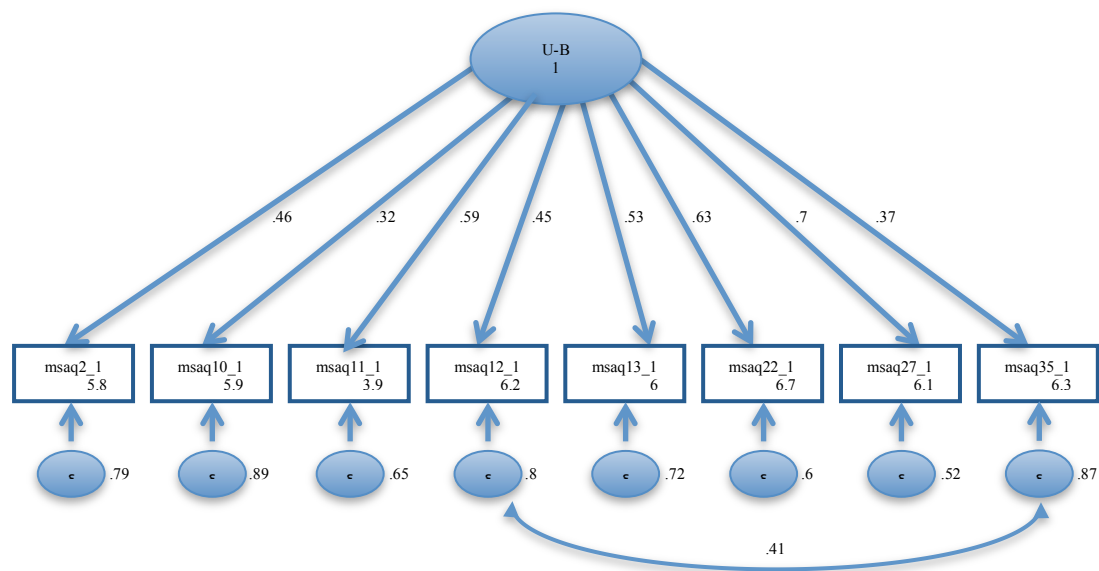
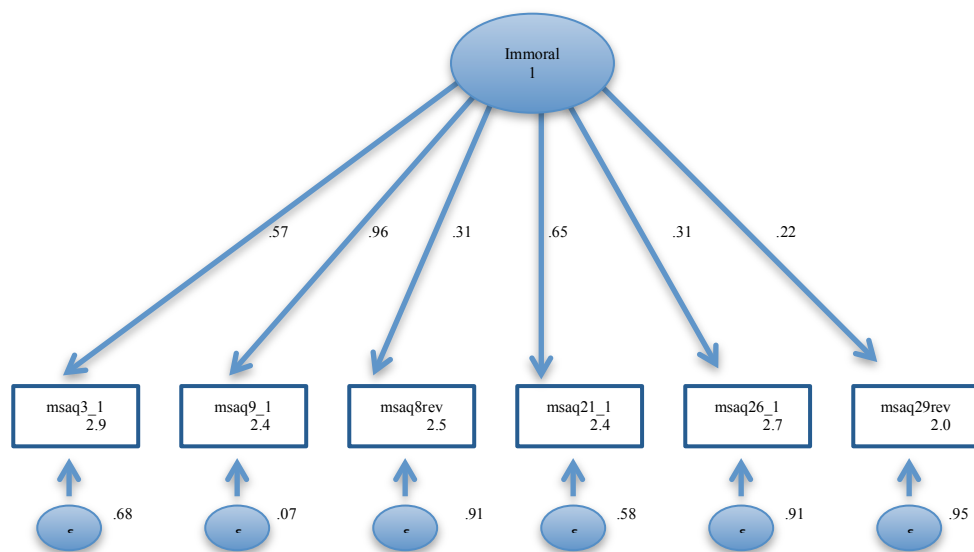


Figure G: SEM Path Model between items and Factor 4: Immoral



Tables

Table 1. Hypothesized Themes.

Moral vs. Immoral	Psychache vs. Pathological	Acceptance vs. Rejection
Right vs. Wrong	Distress vs. Malingering	Respect vs. Disrespect
Ethical vs. Unethical	Resilience vs. Weakness	Association vs. Avoidance
Goodness vs. Evil	Help-seeking vs. Attention-seeking	Inclusion vs. Exclusion
Rewarded vs. Punished	Rational vs. Secondary gain	Empathy vs. Blame
Accepted vs. Rejected (by religion)	Stoicism vs. Cowardice	Help vs. Ignore

Table 2. Summary of Measures and Administration Times

Measure	Time 1 Baseline	Time 2 2-Weeks Post Baseline
Demographic Questionnaire (5 mins)	X	X
Military Suicide Attitudes Questionnaire (MSAQ) (5 mins)	X	X
Stigma of Suicide Scale (SOSS) (10 mins)	X	
Suicide Opinions Questionnaire (SOQ) (15 mins)	X	
Perceived Barriers to Care (5 mins)	X	

Table 3. Factor 1 (Individual-Based Rejection versus Acceptance)

Item	B	SE B	z
4	1	(constrained)	
15	3.72	1.09	3.43***
18	1.92	.82	3.12**
24	3.46	1.02	3.39***
25	2.87	.95	3.03**
31	2.07	.67	3.11**
32	1.95	.66	2.97**
33	3.88	1.13	3.45***
34	4.07	1.24	3.29***

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4: Factor 2 (Psychopathology)

Item	B	SE B	z
1	1	(constrained)	
5	1.69	.48	3.53***
6	1.60	.41	3.95***
7	1.13	.34	3.30***
16	.62	.24	2.55*
17	1.06	.29	3.60***
19	1.29	.38	3.36***
20	1.43	.39	3.70***
30	1.67	.42	3.99***

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5. Factor 3 (Unit-Based Acceptance versus Rejection)

Item	B	SE B	z
2	1	(constrained)	
10	.67	.21	3.12**
11	1.71	.39	4.33***
12	.91	.24	3.87***
13	1.11	.27	4.08***
22	1.18	.25	4.76***
27	1.37	.30	4.55***
35	.72	.22	3.37***

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 6. Factor 4 (Immoral)

Item	B	SE B	z
3	1	(constrained)	
9	1.75	.26	6.80***
8	.50	.14	3.57***
21	1.28	.20	6.46***
23	-.19	.12	-1.60
26	.54	.15	3.61***
28	-.01	.11	-.11
29	.35	.13	2.66**

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Demographic, Occupational, and Educational Characteristics of Total Sample

<i>Characteristics</i>	Military Respondents (N = 317)	
	N	%
Demographic		
Gender		
Male	225	71
Female	92	29
Marital Status		
Single	132	41.6
Married	153	48.3
Divorced	29	9.1
Separated	3	0.9
Ethnicity		
White	262	82.6
Hispanic or Latino	22	6.9
Asian	12	3.8
Other	11	3.5
Black or African American	6	1.9
Native Hawaiian or Pacific Islander	2	0.6
American Indian or Alaska Native	2	0.6
Military Rank		
E1 – E3	41	12.9
E4 – E5	83	26.2
E6 – E7	30	9.5
E8 – E9	9	2.8
W1 – W5	4	1.3
O1 – O3	117	36.9
O4 – O6	33	10.4

Military Branch		
Army	48	15.1
Navy	93	29.3
Air Force	130	41
Marines	46	14.5
Education		
No Diploma	2	0.6
High School or Equivalent	26	8.2
Some College, No Degree	76	24
Associate Degree	38	12
Bachelor's Degree	92	29
Graduate or Professional Degree	83	26.2

Table 7a. Exposure of Total Sample

<i>Characteristics</i>	Military Respondents (N = 317)	
	N	%
Exposure		
Exposure in Unit	173	54.6
Exposure Family or Friend	164	51.7
Exposure Total (Endorsed Either Unit, Family/Friend, or Both)	253	79.8
Endorsed No Exposure	64	20.2

Table 8. Demographic, Occupational, and Educational Characteristics, Groups A,B

<i>Characteristics</i>	Military Respondents in Group A (N=158)		Military Respondents in Group B (N=159)	
	N	%	N	%
Demographic				
Gender				
Male	117	74.1	108	67.9
Female	41	25.9	51	32.1
Marital Status				
Single	63	39.9	69	43.4
Married	82	51.9	71	44.7
Divorced	12	7.6	17	10.7
Separated	1	0.6	2	1.3
Ethnicity				
White	134	84.8	128	80.5
Hispanic or Latino	8	5.1	14	8.8
Asian	7	4.4	5	3.1
Other	6	3.8	5	3.1
Black or African American	2	1.3	4	2.5
Native Hawaiian or Pacific Islander	0	0	2	1.3
American Indian or Alaska Native	1	0.6	1	0.6
Military Rank				
E1 - E3	21	13.3	20	12.6
E4 - E5	40	25.3	43	27
E6 - E7	18	11.4	12	7.5
E8 - E9	4	2.5	5	3.1
W1 - W5	0	0	4	2.5
O1 - O3	56	35.4	61	38.4
O4 - O6	19	12	14	8.8
Military Branch				
Army	27	17.1	21	13.2
Navy	52	32.9	41	25.8
Air Force	59	37.3	71	44.7
Marines	20	12.7	26	16.4
Education				
No Diploma	2	1.3	0	0
High School or Equivalent	15	9.5	11	6.9
Some College, No Degree	33	20.9	43	27
Associate Degree	20	12.7	18	11.3
Bachelor's Degree	39	24.7	53	33.3
Graduate or Professional Degree	49	31	34	21.4

Table 9. Exposure of Groups A & B

<i>Characteristics</i>	Military Respondents in Group A (N=158)		Military Respondents in Group B (N=159)	
	N	%	N	%
Exposure				
Exposure in Unit	86	54.4	87	54.7
Exposure Family or Friend	82	51.9	82	51.6
Exposure Total (Endorsed Either Friend, Unit, Family/Friend, or Both	129	81.6	126	79.2
Endorsed No Exposure	29	18.3	33	20.8

Table 10. Demographic, Occupational, and Educational Characteristics of All Measures

<i>Characteristics</i>	Military Respondents who Completed All Measures (N = 265)	
	N	%
Demographic		
Gender		
Male	189	71.3
Female	76	28.7
Marital Status		
Single	107	40.4
Married	129	48.7
Divorced	26	9.8
Separated	3	1.1
Ethnicity		
White	227	85.7
Hispanic or Latino	17	6.4
Asian	9	3.4
Other	8	3
Black or African American	2	0.8
Native Hawaiian or Pacific Islander	1	0.4
American Indian or Alaska Native	1	0.4
Military Rank		
E1 – E3	31	11.7
E4 – E5	70	26.4
E6 – E7	22	8.3
E8 – E9	8	3
W1 – W5	4	1.5
O1 – O3	101	38.1
O4 – O6	29	10.9
Military Branch		
Army	40	15.1
Navy	74	27.9
Air Force	111	41.9
Marines	40	15.1
Education		
No Diploma	2	0.8
High School or Equivalent	18	6.8
Some College, No Degree	62	23.4
Associate Degree	33	12.5
Bachelor's Degree	84	31.7
Graduate or Professional Degree	66	24.9

Table 10a. Exposure of All Measures

<i>Characteristics</i>	Military Respondents who Completed All Measures (N = 265)	
	N	%
Exposure		
Exposure in Unit	148	55.8
Exposure Family or Friend	141	53.2
Exposure Total (Endorsed Either Unit, Family/Friend, or Both)	219	82.7
Endorsed No Exposure	46	17.4

Table 11. Demographic, Occupational, and Educational Characteristics of Follow Up

<i>Characteristics</i>	Military Respondents (N = 51)	
	N	%
Demographic		
Gender		
Male	35	68.6
Female	16	31.4
Marital Status		
Single	10	19.6
Married	37	72.5
Divorced	3	5.9
Separated	1	2
Ethnicity		
White	44	86.3
Hispanic or Latino	4	7.8
Asian	0	0
Other	1	2
Black or African American	1	2
Native Hawaiian or Pacific Islander	1	2
American Indian or Alaska Native	0	0
Military Rank		
E1 – E3	9	17.6
E4 – E5	4	7.8
E6 – E7	2	3.9
E8 – E9	2	2.9
W1 – W5	0	0
O1 – O3	24	47.1
O4 – O6	10	19.6
Military Branch		
Army	14	27.5
Navy	17	33.3
Air Force	16	31.4
Marines	4	7.8
Education		
No Diploma	0	0
High School or Equivalent	2	3.9
Some College, No Degree	8	15.7
Associate Degree	3	5.9
Bachelor's Degree	16	31.4
Graduate or Professional Degree	22	43.1

Tables 12a – 12d. Factor Loadings based on Principal Components Analysis with VARIMAX Rotation for the MSAQ (items <.35 not shown)

Table 12a. Individual-Based Rejection versus Acceptance, 9 Items ($\alpha = .85$)

Item Number	Item	Factor Loading
33	People who attempt suicide shouldn't be eligible for promotion or leadership billets.	.78
31	Admitting thoughts of suicide shouldn't harm someone's career.	-.71
34	I would feel uncomfortable if I learned someone I was working with was suicidal.	.71
24	I don't want to be in a unit with someone who has a history of a suicide attempt or suicidal thoughts.	.71
15	I wouldn't respect my leader if I knew he/she had expressed suicidal thoughts.	.65
25	Suicide violates our military core values.	.50
18	People who attempt suicide should be given time to receive help.	-.46
4	Seeking help for suicide requires courage.	-.43
32	A person who attempts suicide must be in a lot of pain.	-.41

Table 12b. Psychopathology (weakness/attention seeking), 9 Items ($\alpha = .82$)

Item Number	Item	Factor Loading
17	Those who attempt suicide just want attention.	.76
6	Only cowards commit suicide.	.67
20	Suicidal individuals weren't strong enough for the military in the first place.	.66
19	Claiming to be suicidal is done to get out of duty.	.56
30	I don't have any respect for those who wish to kill themselves.	.56
5	Suicide is selfish.	.52
16	If a service member dies by suicide, he or she did it so that their family can get benefits/money.	.48
7	The best way to deal with psychological problems is to "man-up" and tough it out.	.46
1	The names of those who commit suicide should be removed from military memorials.	.45

Table 12c. Unit-Based Acceptance versus Rejection, 8 Items ($\alpha = .80$)

Item Number	Item	Factor Loading
13	A service member who attempts suicide requires help and support from his military unit as well as leadership.	.76
12	Suicide hurts unit functioning.	.71
27	People who attempt suicide would benefit from support from their unit members.	.71
11	Unit support can help prevent suicide.	.62
22	I have a duty to help those who are feeling suicidal.	.60
35	Suicide hurts unit morale.	.52
2	Military duty requires us to help those who are struggling with suicidal thoughts.	.51
10	A service member who attempts suicide deserves understanding and empathy.	.50

Table 12d. Immoral, 8 Items ($\alpha = .72$)

Item Number	Item	Factor Loading
21	Suicide is not acceptable to my religious beliefs.	.72
9	Choosing suicide is morally wrong.	.70
3	It's wrong for a service member to attempt suicide.	.48
8	I would trust a service member who has made a suicide attempt to make ethical decisions.	-.47
26	Those who commit suicide don't think about how it will affect their unit.	.44
29	I can understand how the stressors of military life can lead someone to think about suicide.	-.42
23	A service member who dies by suicide must have thought it was the only way out of their pain.	.39
28	Avoiding people who are suicidal may make them more likely to kill themselves.	-.38

Table 13. Multiple Regressions Findings for Exploratory Analyses

	B	SE B	β
Individual-Based Rejection vs. Acceptance			
Sex	.04	.08	.03
Education	.02	.03	.05
Exposure	-.05	.09	-.03
Branch	.02	.04	.05
Rank	.04	.08	.03

Notes: $R^2 = .00$, *ns.* All findings non-significant

Psychopathology

Sex	.08	.08	.06
Education	-.01	.04	.06
Exposure	.01	.08	.01
Branch	.00	.04	.00
Rank	-.09	.10	-.08

Notes: $R^2 = .01$, *ns.* * $p < .05$, ** $p < .01$, *** $p < .001$

Unit-Based
Acceptance vs.
Rejection

Sex	-.09	.06	-.08
Education	.06	.02	.16**
Exposure	-.03	.07	-.03
Branch	.00	.03	.01
Rank	.13	.09	.13

Notes: $R^2 = .04$, $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

Immoral

Sex	-.05	.09	-.03
Education	.04	.03	.07
Exposure	-.13	.10	-.07
Branch	.07	.04	.09
Rank	.30	.13	.21*

Notes: $R^2 = .02$, *ns.* * $p < .05$, ** $p < .01$, *** $p < .001$

APPENDICES

Appendix A– Consent Form

Dear Ma'am or Sir,

We appreciate your willingness to consider our request to serve as a participant in this study. Your responses to the following questionnaires will help advance our scientific approach to understanding and preventing suicide in the military. In the sections below, you will find information to help you choose whether or not you want to participate in this study.

1. INTRODUCTION OF THE STUDY

You are being asked to be in a research study entitled, “Development and Psychometric Evaluation of the Military Suicide Attitudes Questionnaire” at the Uniformed Services University of the Health Sciences (USUHS), Bethesda, Maryland. This information sheet provides information about the research study. Once you understand the study, you can decide if you want to take part in this research study. Your decision to take part is voluntary. This means you are free to choose if you want to take part in this study. By completing and submitting the questionnaire, you have consented to participate in this study.

This research is being conducted by LTJG Marcus VanSickle, a clinical psychology PhD student at Uniformed Services University of the Health Sciences, is conducting the research. He is working under the supervision of his academic advisor, Dr. Marjan Holloway, a licensed clinical psychologist and tenured professor at the Uniformed Services University of the Health Sciences.

2. PURPOSE AND PROCEDURES

The purpose of this study is to learn about military attitudes toward suicide. The questions asked will be related to your opinions about mental health problems and suicide. This information will help us understand more about attitudes that military service members have towards suicide. We will use this information in the future to enhance behavioral health care efforts within the Department of Defense. Researchers, clinicians, and policy makers may benefit from the information you share so that their suicide prevention efforts are informed by your knowledge and experience.

This research study consists of 4 separate questionnaires. It will take you approximately 30 minutes to complete the questionnaire. When filling out the questionnaires, you may skip any questions you do not wish to answer. Once you have completed the questionnaire, please consider providing your email address to participate in a brief, 5-minute, follow up survey in approximately 2 weeks. No personally identifying information will be requested or recorded.

What am I being asked to do?

- **Step 1.** Read the information presented on this screen. If you choose to participate in the study, please select the 'Next' button at the bottom of the page. By selecting the 'Next' button you are electronically providing your informed consent to participate in this study.
- **Step 2.** Complete the survey. Please attempt to answer all questions to the best of your ability. You have the option to stop your participation at any time.
- **Step 3.** If you are interested in completing a very brief (5-minute) follow-up survey 2-weeks from now, you may provide us your email address.
- **Step 4.** Complete the brief follow-up survey online in 2-weeks. You will be contacted by email in 2-weeks and provided a link to the follow-up survey.

3. POSSIBLE BENEFITS FROM BEING IN THIS STUDY

You may benefit by having an opportunity to share with researchers your perspective and experiences. Other service members may benefit from the knowledge generated through this study and the enhancement of behavioral health care efforts within the Department of Defense. However, no benefit can be guaranteed. Within the next year, we plan to present our findings at national conferences and through the publication of scientific papers.

4. COMPENSATION

There is no financial compensation for your participation in this research.

5. ALTERNATIVE PROCEDURES/TREATMENT

The only alternative to participating in this study is, not participating.

6. POSSIBLE RISKS OR DISCOMFORTS FROM BEING IN THIS STUDY

You may experience slight discomfort or negative thoughts and emotions as a result of completing the attached survey, as some questions ask your opinions about mental health problems and suicide. Please use your judgment and stop at any time if you are too upset to continue.

What are the resources available to me if I become distressed during my participation?

1. National Suicide Prevention Lifeline; www.suicidepreventionlifeline.org; 1-800-273-TALK (8255)
2. Military OneSource; www.militaryonesource.com; 1-800-342-9647

7. RIGHT TO WITHDRAW

You may decide to stop taking part in the study at any time. Your relations with the faculty, staff, and USUHS will not be changed in any way if you decide to end your participation in the study.

8. RECOURSE IN THE EVENT OF INJURY

If at any time you believe you have suffered an injury or illness as a result of participating in this research project, you should contact the Director of Human Research Protections Programs at the Uniformed Services University of the Health Sciences, Bethesda, Maryland 20814-4799 at (301) 295-9534. This office can review the matter with you, can provide information about your rights as a subject, and may be able to identify resources available to you. If you believe the government or one of the government's employees (such as a military doctor) has injured you, a claim for damages (money) against the federal government (including the military) may be filed under the Federal Torts Claims Act. Information about judicial avenues of compensation is available from the University's General Counsel at (301) 295-3028.

9. PRIVACY AND CONFIDENTIALITY

All information you provide as part of this study will be confidential and will be protected to the fullest extent provided by law. Your responses to our questionnaire will be maintained in password-protected archives in the Laboratory for the Treatment of Suicide-Related Ideation and Behavior. All records related to this study will be accessible to those persons directly involved in conducting this study and members of the USUHS Institutional Review Board (IRB), which provides oversight for protection of human research volunteers. In addition, the IRB at USUHS and other federal agencies that help protect people who are involved in research studies may need to see the information you give us. Other than those groups, records from this study will be kept private to the fullest extent of the law. Scientific reports that come out of this study will not use your name or identify you in any way. If you are a military member, please be advised that under Federal Law, a military member's confidentiality cannot be strictly guaranteed.

10. CONTACT FOR QUESTIONS OR PROBLEMS

If you have questions about this research, you should contact LTJG Marcus VanSickle at (301) 295-3271 of USUHS, Bethesda, Maryland 20814. Even in the evening or on weekends, you can leave a message at that number. If you have questions about your rights as a research subject, you should call the Director of Human Research Protections Programs at USUHS at (301) 295-9534. She is your representative and has no connection to the researcher conducting this study.

****IF YOU HAVE ANY QUESTIONS PLEASE FEEL FREE TO ASK THEM****

By clicking submit you indicate that you have read the explanation of this study on this form, the procedures have been reviewed, and all your questions have been answered. You understand the nature of the study and volunteer to participate in it. You attest that you meet the requirements for participation in this study. You understand that the study is designed for research purposes and not to be of direct benefit to you.

Thank you again for your time and willingness to contribute to our research.

Appendix B– Recruitment Venues, Posting Language, and Follow-Up Email

Recruitment Venues

Facebook Groups/Pages
APA Division 19
USUHS Military Clinical Psychology
Personal Facebook Page
Reddit
United States Military
United States Navy
United States Army
United States Air Force
United States Marine Corps
SurveyGizmo

Facebook: “Hello, I’m recruiting military men and women age 18 and older for my dissertation research. If you’re willing to spend just 30-40 minutes to share your attitudes and opinions towards suicide please click the link below for a more detailed description of the survey.

- <http://www.surveygizmo.com/s3/1912477/MSAQ>

Thank you in advance for your help and please share this post with your military friends and family!”

Post-Survey: “Thank you for taking our research survey! Your responses are very important to us.”

Please remember that, if you voluntarily submitted your email address to us, we will be contacting you two weeks from today to complete a very brief (5-minute) reassessment.

To help advance this research even further please ask the other active duty military members in your life to participate in this research.

We encourage you to share the survey link below with family members, friends, and colleagues.

- <http://www.surveygizmo.com/s3/1912477/MSAQ>

Follow Up Email: “Dear Participant, thank you for completing the initial Military Suicide Attitudes Questionnaire and agreeing to a very brief follow up assessment!

Below is a link for the brief follow up survey. All you have to do is click it and answer a few questions taking 5-minutes of your time. Please don't forget to provide your email address again in the box provided so that we may link your responses.

Please click this link <http://www.surveymoz.com/s3/1977438/Attitude-Survey-Follow-up>

Feel free to email me if you have any problems completing the survey.

Thank you again for contributing to this research!

Very Respectfully,

Marcus VanSickle

Appendix C: Demographic Questionnaire

1) Gender

- ☐ Male
- ☐ Female

2) Marital Status

- ☐ Single
- ☐ Married
- ☐ Divorced
- ☐ Separated
- ☐ Widowed

3) Ethnicity

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or Pacific Islander
- ☐ White
- ☐ Other

4) Military Rank

- ☐ E1-E3
- ☐ E4-E5
- ☐ E6-E7
- ☐ E8-E9
- ☐ W1-W5
- ☐ O1-O3
- ☐ O4-O6
- ☐ O7-O10

5) Primary MOS (number)

____ _ (enter text/number)

6) Primary MOS (title)

7) Current branch of military service

- ☐ Army
- ☐ Navy
- ☐ Air Force
- ☐ Marines
- ☐ Coast Guard

8) Education Level

- ☐ Less than 9th Grade
- ☐ 9th to 12th Grade, No Diploma
- ☐ High School Graduate or Equivalent
- ☐ Some College, No Degree
- ☐ Associate Degree
- ☐ Bachelor's Degree
- ☐ Graduate or Professional Degree

9) Exposure to suicide (please select all that apply)

- ☐ Someone within my military unit has died by suicide or attempted suicide
- ☐ Someone close to me (family or friend) has died by suicide or attempted suicide
- ☐ I don't know anyone who has died by suicide or attempted suicide

Appendix D: Original Military Suicide Attitudes Questionnaire

- 1 The names of those who commit suicide should be removed from military memorials.
- 2 Military duty requires us to help those who are struggling with suicidal thoughts.
- 3 It's wrong for a service member to attempt suicide
- 4 Seeking help for suicide requires courage
- 5 Suicide is selfish
- 6 Only cowards commit suicide.
- 7 The best way to deal with psychological problems is to 'man-up' and tough it out.
- 8 I would trust a service member who has made a suicide attempt to make ethical decisions
- 9 Choosing suicide is morally wrong
- 10 A service member who attempts suicide deserves understanding and empathy.
- 11 Unit support can help prevent suicide
- 12 Suicide hurts unit functioning
- 13 A service member who attempts suicide requires help and support from his military unit as well as leadership.
- 14 Suicide is always a cry for help.
- 15 I wouldn't respect my leader if I knew he/she had expressed suicidal thoughts
- 16 If a service member dies by suicide, he or she did it so that their family can get the survivor benefits/money.
- 17 Those who attempt suicide just want attention
- 18 People who attempt suicide should be given time to receive help
- 19 Claiming to be suicidal is done to get out of duty
- 20 Suicidal individuals weren't strong enough for the military in the first place
- 21 Suicide is not acceptable to my religious beliefs
- 22 I have a duty to help those who are feeling suicidal
- 23 A service member who dies by suicide must have thought it was the only way out of their pain.
- 24 I don't want to be in a unit with someone who has a history of a suicide attempt or suicidal thoughts
- 25 Suicide violates our military core values
- 26 Those who commit suicide don't think about how it will affect their unit
- 27 People who attempt suicide would benefit from support from their unit members

- 28 Avoiding people who are suicidal may make them more likely to
kill themselves
- 29 I can understand how the stressors of military life can lead
someone to think about suicide
- 30 I don't have any respect for those who wish to kill themselves
- 31 Admitting thoughts of suicide shouldn't harm someone's career
- 32 A person who attempts suicide must be in a lot of pain
- 33 People who attempt suicide shouldn't be eligible for promotion or
leadership billets
- 34 I would feel uncomfortable if I learned someone I was working
with was suicidal
- 35 Suicide hurts unit morale

Appendix E: Final Military Suicide Attitudes Questionnaire Means and SDs

	Item	M	SD
1	The names of those who commit suicide should be removed from military memorials.	1.76	.93
2	Military duty requires us to help those who are struggling with suicidal thoughts.	4.42	.79
3	It's wrong for a service member to attempt suicide.	3.33	1.17
4	Seeking help for suicide requires courage.	4.46	.65
5	Suicide is selfish.	3.10	1.26
6	Only cowards commit suicide.	1.83	.90
7	The best way to deal with psychological problems is to 'man-up' and tough it out.	1.93	1.00
8	I would trust a service member who has made a suicide attempt to make ethical decisions.	3.40	1.02
9	Choosing suicide is morally wrong.	2.87	1.15
10	A service member who attempts suicide deserves understanding and empathy.	4.22	.82
11	Unit support can help prevent suicide.	3.98	1.00
12	Suicide hurts unit functioning.	4.34	.74
13	A service member who attempts suicide requires help and support from his military unit as well as leadership.	4.34	.74
14	I wouldn't respect my leader if I knew he/she had expressed suicidal thoughts.	2.19	1.06
15	If a service member dies by suicide, he or she did it so that their family can get the survivor benefits/money.	1.66	.82
16	Those who attempt suicide just want attention.	1.83	.80
17	People who attempt suicide should be given time to receive	4.35	.65

	help.		
	Claiming to be suicidal is done	2.26	.98
18	to get out of duty.		
	Suicidal individuals weren't	1.95	.97
19	strong enough for the military in		
	the first place.		
20	Suicide is not acceptable to my	2.86	1.25
	religious beliefs.		
	I have a duty to help those who	4.39	.74
21	are feeling suicidal.		
	I don't want to be in a unit with	2.27	1.07
22	someone who has a history of a		
	suicide attempt or suicidal		
	thoughts.		
	Suicide violates our military core	3.17	1.15
23	values.		
	Those who commit suicide don't	3.00	1.11
	think about how it will affect		
24	their unit.		
	People who attempt suicide	4.24	.73
25	would benefit from support from		
	their unit members.		
	I can understand how the	3.85	.90
26	stressors of military life can lead		
	someone to think about suicide.		
27	I don't have any respect for those	1.89	.92
	who wish to kill themselves.		
	Admitting thoughts of suicide	4.10	.93
28	shouldn't harm someone's career.		
	A person who attempts suicide	4.05	.90
29	must be in a lot of pain.		
	People who attempt suicide	2.22	1.08
	shouldn't be eligible for		
30	promotion or leadership billets.		
	I would feel uncomfortable if I	2.61	1.14
31	learned someone I was working		
	with was suicidal.		
32	Suicide hurts unit morale.	4.33	.72

Appendix E: Final Military Suicide Attitudes Questionnaire

Military Suicide Attitudes Questionnaire

Instructions: This is not a test but a survey of your opinions. There are no right or wrong answers – only your honest opinion counts. Please select the box that most closely describes your opinion.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The names of those who commit suicide should be removed from military memorials.					
2. Military duty requires us to help those who are struggling with suicidal thoughts.					
3. It's wrong for a service member to attempt suicide.					
4. Seeking help for suicide requires courage.					
5. Suicide is selfish.					
6. Only cowards commit suicide.					
7. The best way to deal with psychological problems is to 'man-up' and tough it out.					
8. I would trust a service member who has made a suicide attempt to make ethical decisions.					
9. Choosing suicide is morally wrong.					
10. A service member who attempts suicide deserves understanding and empathy.					
11. Unit support can help prevent suicide.					
12. Suicide hurts unit functioning.					
13. A service member who attempts suicide requires help and support from his military unit as well as leadership.					
14. I wouldn't respect my leader if I knew he/she had expressed suicidal thoughts.					
15. If a service member dies by suicide, he or she did it so that their family can get the survivor benefits/money.					
16. Those who attempt suicide just want attention.					

17. People who attempt suicide should be given time to receive help.					
18. Claiming to be suicidal is done to get out of duty.					
19. Suicidal individuals weren't strong enough for the military in the first place.					
20. Suicide is not acceptable to my religious beliefs.					
21. I have a duty to help those who are feeling suicidal.					
22. I don't want to be in a unit with someone who has a history of a suicide attempt or suicidal thoughts.					
23. Suicide violates our military core values.					
24. Those who commit suicide don't think about how it will affect their unit.					
25. People who attempt suicide would benefit from support from their unit members.					
26. I can understand how the stressors of military life can lead someone to think about suicide.					
27. I don't have any respect for those who wish to kill themselves.					
28. Admitting thoughts of suicide shouldn't harm someone's career.					
29. A person who attempts suicide must be in a lot of pain.					
30. People who attempt suicide shouldn't be eligible for promotion or leadership billets.					
31. I would feel uncomfortable if I learned someone I was working with was suicidal.					
32. Suicide hurts unit morale.					

Appendix F: Original MSAQ Items

Moral v. Immoral

- 1 Suicide is never an OK option
- 2 It's a person's right to kill themselves
- 3 Nobody should have the right to take attempt suicide
- 4 It's wrong for a service member to attempt suicide
- 5 Keeping someone on active-duty after attempting suicide is a bad idea
- 6 Suicide is never the right choice
- 7 Choosing suicide is morally wrong
- 8 A person in distress should have the right to kill themselves
- 9 Suicide by a service member fails his/her unit and leadership
- 10 I believe that committing suicide is morally wrong
- 11 Suicide is always the wrong choice
- 12 In certain situations, suicide is understandable
- 13 Suicide is always a bad choice
- 14 Sometimes committing suicide is better for everyone else
- 15 Your life is not yours to take
- 16 It's unethical to stop someone from killing themselves
- 17 It's just as wrong to kill yourself as it is to kill someone else
- 18 Only people with low morals would try to kill themselves
- 19 There are some circumstances where suicide is a just decision
- 20 Letting people kill themselves would get rid of service members with psychological problems
- 21 Attempting suicide is against military values
- 22 Service members who kill themselves were most likely not fit to serve in the first place
- 23 I would trust a service member who has made a suicide attempt to make ethical decisions
- 24 Suicide violates our core values
- 25 Suicide is wrong for service members even if assisted by a doctor
- 26 Suicide is not a violation of our ethical principles
- 27 Service members who attempt suicide can't be trusted
- 28 Sometimes suicide gets rid of the "weakest link"
- 29 A person who is suffering should be allowed to kill themselves
- 30 There are cases where people are better off to kill themselves
- 31 Someone thinking of killing themselves can't be helped
- 32 People who consider suicide are bad people
- 33 Service members who think about killing themselves may be good people who are having a rough time
- 34 Good people don't kill themselves
- 35 Service members who kill themselves can be possessed by evil thoughts

- 36 Suicide is an evil act
- 37 Good and bad people can kill themselves
- 38 Service members thinking of killing themselves are good people who need help
- 39 Those who commit suicide don't think about how it will affect their unit
- 40 Good people would fight the urge to kill themselves
- 41 Suicide is selfish
- 42 People who kill themselves will burn in hell
- 43 Someone who kills themselves must not believe in an afterlife
- 44 Those who attempt suicide get the attention they're looking for
- 45 Attempting suicide will hurt your career
- 46 Service members who attempt suicide should be separated
- 47 Suicide can be a relief from pain for some people
- 48 Service members who die by suicide shouldn't receive benefits
- 49 If a service member attempts suicide they should be given a break from their work
- 50 Service members who kill themselves receive too much attention
- 51 Service members who claim to be suicidal should be separated
- 52 People who try to kill themselves shouldn't be charged with protecting the lives of others
- 53 People who attempt suicide should be given time to receive help
- 54 People who try to commit suicide shouldn't be eligible for promotion or leadership billets
- 55 People who try to commit suicide shouldn't be able to maintain high profile jobs
- 56 People who attempt suicide shouldn't be allowed to handle weapons
- 57 People who attempt to kill themselves should be punished the same way as those who attempt to kill others
- 58 Suicide punishes family and friends
- 59 Fewer service members would kill themselves if religion played a bigger role in the military
- 60 Atheists are more likely to kill themselves
- 61 People who attempt suicide will be punished in the afterlife
- 62 God will forgive those who take their own life
- 63 Chaplains should be required to report suicidal service members to their chain of command for help
- 64 Those who commit suicide are not acting in accordance with God's will.
- 65 We are born with free will and suicide is simply a decision one makes.
- 66 If a service member receives help after attempt suicide, his/her unit should welcome them back
- 67 If a service member attempts suicide more than once, they should be discharged
- 68 People who commit suicide are damned

- 69 I have a duty to help those who are feeling suicidal
- 70 Suicide is not acceptable to my religious beliefs
- 71 People who kill themselves go to hell

Psychache v. Psychopathology

- 72 Service members claim to be suicidal to get attention
- 73 Someone who commits suicide is tired of living
- 74 People who attempt suicide are trying to get out of the military
- 75 Service members who seek help for suicide must be having a hard time
- 76 Suicide is used to shirk one's responsibilities.
- 77 A person who attempts suicide must be in a lot of pain
- 78 People who choose suicide usually show signs of emotional distress
- 79 Service members who attempt suicide are usually malingering
- 80 People who talk about wanting to kill themselves are often faking.
- 81 Claiming to be suicidal is done to get out of duty
- 82 Service members who really want to kill themselves would just do it, those who talk about it are faking.
- 83 Service members who commit suicide don't have enough support
- 84 If a service member attempts suicide it's a leadership failure
- 85 People who attempt suicide are just trying to get out of something, they aren't at serious risk
- 86 Suicidal individuals weren't strong enough for the military in the first place
- 87 Resilient people don't consider or attempt suicide
- 88 Those who attempt suicide cannot face life's challenges
- 89 A service member who attempts suicide is very weak
- 90 It takes strength for a military service member to seek treatment
- 91 Those who commit suicide are weak.
- 92 Committing suicide requires a lot of psychological strength.
- 93 People who commit suicide can't handle normal life.
- 94 Considering suicide is a sign of weakness
- 95 Increasing resilience will prevent a service member from considering suicide
- 96 Seeking help for suicide requires courage
- 97 I respect the strength it takes to seek help when feeling suicidal
- 98 Resilient service members wouldn't seek help
- 99 Those who attempt suicide fail to fulfill their duties
- 100 In some circumstances, even resilient people kill themselves
- 101 If someone was really suicidal, they would just do it (and not talk about it)
- 102 Those who attempt suicide just want attention and should be ignored
- 103 People who think about killing themselves need help
- 104 Suicide is always a cry for help.
- 105 Service members who tell their friends they want to kill themselves are genuinely seeking help

106 People who attempt suicide want everyone to focus on them.
 107 If you give attention to people who attempt suicide, they will just do it again.
 108 Those who seek help for suicide don't fit in within my unit
 109 Suicide is the last resort for a cry for help
 110 Claiming suicide is simply way to get out of work or deployment
 111 Expressing one's suicidal thoughts is the best way for him/her to actually get help
 112 People who attempt suicide try to manipulate their situation to their advantage
 113 People who have attempted suicide only think about themselves
 114 If a service member dies by suicide, they did it so that their family can get the survivor benefits/money.
 115 A service member who dies by suicide must have thought that was the only way out of their pain.
 116 Suicide is used to get out of difficult problems.
 117 Suicide can restore a person's honor.
 118 A service member who chooses death by suicide is no longer able to think rationally.
 119 A service member who attempts suicide is trying to gain something such as others' sympathy or simply time off from duty.
 120 Suicide can be a logical choice for some service members
 121 Service members are trying to gain something by claiming to be suicidal
 122 Some people see suicide as the only way out
 123 Some people claim to be suicidal to get out of their military contract
 124 Suicide is a cowardly way out of life's situations
 125 Suicide is a decision that requires planning and effort
 126 There are usually ulterior motives behind suicide
 127 It takes a lot of courage for a SM to admit having suicidal thoughts
 128 The unit would be better off if a SM actually committed suicide rather than if he/she expressed suicidal ideation
 129 Those who attempt suicide are cowards
 130 People who attempt suicide are weak
 131 Oftentimes, people who attempt suicide are heroes
 132 A service member who attempts suicide is a coward
 133 A service member who only has suicidal thoughts is very stoic (or doesn't burden others with their problems...maybe?)
 134 Suicide is a form of emotional repression.
 135 Suicide is only committed by those who are afraid to express themselves.
 136 Committing suicide is a sign of cowardice.
 137 Only cowards commit suicide.
 138 A service member who attempts suicide is a weak coward for notwithstanding the pressures that he experiences.

139 A service member who ultimately dies of suicide probably does so after
 months of showing stoicism and endurance until his pain becomes
 unbearable.
 140 Suicide is a sign of cowardice.
 141 The best way to deal with psychological problems is to 'man-up' and tough
 it out.
 142 If suicidal people would just ignore their suicidal thoughts, the thoughts
 would go away eventually.
 143 Only cowardly service members consider/commit suicide
 144 If a service member is feeling suicidal, s/he should maintain bearing and
 toughen up
 145 It takes a lot of guts to kill yourself, it goes against human nature
 146 Suicide is an honorable way for warriors to die
 147 I wouldn't respect my leader if I knew he/she had expressed suicidal
 thoughts
 148 A service member with a history of suicidal ideation is less capable of
 completing the mission
 149 A service member with a history of suicidal ideation is less deserving of
 promotion
 150 I don't have any respect for those who wish to kill themselves
 151 I would think less of my peers if I knew they were seeking behavioral health
 care
 152 People who attempt suicide are irresponsible
 153 I have no respect for service members who try to keep themselves
 154 It is disrespectful for a service member to try to kill themselves when other
 service members are dying in combat
 155 Suicide is the ultimate sign of disrespect for one's family and friends.
 156 Those who commit suicide deserve no respect.
 157 A service member who attempts suicide deserves respect like any other
 service member.
 158 A service member who attempts suicide is showing disrespect for the
 military values and principals.
 159 If a member of my unit committed suicide, I would lose respect for him/her.
 160 I can still respect someone who has attempted suicide.
 161 Suicidal thoughts are just one part of a person's complete personality.
 162 I could never respect someone who was suicidal
 163 There are leaders whom I respect that have shared being suicidal at some
 point in his/her life
 164 I couldn't follow a leader who attempted suicide
 165 Good leadership would seek out help for their suicidal thoughts
 166 People who attempt suicide are too selfish to be my brother/sister in arms
 167 I respect people who have survived a suicide attempt
 168 Suicide is a sign of disrespect to everyone who loves you

169 Anyone that expresses suicidal thoughts should be filtered out of the military
 170 I wouldn't go into battle with someone that had a history of suicidal thoughts
 171 I would feel uncomfortable if I learned someone I was working with was
 suicidal
 172 I prefer not to associate with co-workers who have attempted suicide
 173 People who have attempted suicide are treated with sympathy in the unit
 where I work
 174 People who attempt suicide would benefit from support from their unit
 members
 175 I would not want to deploy with someone who has attempted suicide
 176 I would be okay with deploying with someone who has attempted suicide
 177 It's frustrating to work with someone who has thought about suicide
 178 I would avoid talking to a fellow service member who was suicidal
 179 I would still associate myself with a fellow service member who had a past
 suicide attempt
 180 Suicide brings shame to the decedent's social group.
 181 Suicidal individuals should be quarantined from others in their group.
 182 A service member who attempted suicide a year ago can become a valuable
 and productive member of my military unit.
 183 A service member who attempted suicide a year ago should not get deployed
 with my military unit.
 184 Being around someone who has attempted suicide makes me uncomfortable.
 185 People who have attempted suicide need people around them to support
 them.
 186 I would be comfortable being friends with someone who has attempted
 suicide.
 187 I could not be friends with a suicidal service member
 188 I might spend more time talking to a service member if s/he was struggling
 with suicidal thoughts
 189 Suicidal service members should be separated immediately
 190 People who attempt suicide should be put on suicide watch and isolated from
 the unit
 191 Good leadership can help people who are feeling suicidal
 192 Unit involvement can help people feel better
 193 Helping those who are suicidal can help your career and make you more
 approachable to other service members
 194 Avoiding suicidal people frees you from the fall out if the person actually
 commits suicide
 195 People who have attempted suicide need others around them more
 196 A suicide in my unit means a failure by the team
 197 A suicidal service member should be forced out of the military
 198 I don't want to be in a unit with someone that has a history of suicide

199 People who attempt suicide are not cohesive unit members/People who attempt suicide lack unit cohesion
 200 People who think about killing themselves should be excluded from unit decisions
 201 People who attempt suicide should be ostracized
 202 Those who attempt suicide cannot face life's challenges
 203 People who are suicidal should not be in the military in the first place
 204 People who attempt suicide need support from their unit members
 205 I would still include a fellow service member who was suicidal in my daily activities
 206 A suicidal service member should be separated from the group.
 207 The names of those who commit suicide should be removed from military memorials.
 208 Suicide can occur in any social group at any time.
 209 A service member who has attempted suicide should be included in military activities, like any other service member.
 210 A service member who has attempted suicide should be excluded from military service and that would be the best decision for all involved.
 211 I wouldn't want to serve with a serviceman/servicewoman who had attempted suicide.
 212 You can't trust someone who had attempted suicide with your life in a combat situation.
 213 People who attempt suicide but survive can make a better life for themselves.
 214 I would want to include a suicidal service member with my friends
 215 I would steer clear of a service member who is suicidal
 216 People who attempt suicide are at the fringe of society for a reason
 217 People who kill themselves are generally loners
 218 Suicidal service members only take resources away from the mission
 219 I can understand how the stressors of military life can cause for someone to think about suicide
 220 I can sympathize for those who think about suicide
 221 I can sympathize for those who have attempted suicide
 222 I feel no sympathy for those who have attempted suicide
 223 Those who attempt suicide cause problems within the unit
 224 If a service member is feeling suicidal, they should be able to fix it themselves
 225 It is okay for a service member to feel suicidal
 226 We should have empathy for those who commit suicide.
 227 Those who commit suicide clearly cannot handle life.
 228 A service member who attempts suicide deserves understanding and empathy.
 229 A service member who attempts suicide deserves blame for choosing to kill

himself.

230 People who commit suicide should have gotten help first.

231 Suicide is selfish.

232 It is understandable to have thoughts of suicide.

233 Suicide is a deliberate choice by the service member

234 Someone would only consider suicide if they were in an extremely difficult place in life

235 If I can deal with military stress, others should be able to do so too

236 If a person is suicidal it's probably their own fault

237 People who kill themselves are selfish and deserve the blame for their actions

238 If you ignore someone's suicidal gestures, they will just go away

239 I wish I knew what to say to help a suicidal service member

240 People who have attempted suicide are victims of their environment/situation and need understanding

241 I am happy to care for someone who has attempted suicide

242 Those who attempt suicide just want attention and should be ignored

243 We don't have time to help those who think about killing themselves

244 I would immediately help a fellow service member who revealed to me that they were feeling suicidal

245 I would ignore someone if they said they were feeling suicidal because it is not my problem.

246 Suicide is a problem best ignored.

247 Individuals thinking of committing suicide deserve help.

248 A service member who attempts suicide requires help and support from his military unit as well as leadership.

249 A service member who attempts suicide must be ignored, otherwise the behavior will recur over and over again.

250 People who attempt suicide need medical help.

251 If a person is having suicidal thoughts, I can't realistically be expected to help them.

252 Military duty requires us to help those who are struggling with suicidal thoughts.

253 The best way to stop a service member from talking about suicide is to ignore them

254 The best way to stop a service member from taking her/his life is to get her/him to help

255 Those talking about suicide need to get on board with the mission

256 We should ignore suicide attempts and find out what the real problem is

257 People who are suicidal should get help right away

258 People who kill themselves aren't valued by their peers

259 Suicide hurts unit functioning

Other Suicide-Related Items

- 1 Leaders should understand/help people who want to commit suicide
Service members should understand/help people who want to commit
- 2 suicide
- 3 Admitting suicide shouldn't harm someone's career
- 4 People who try to kill themselves are faking it, can't hack military life
- 5 People who are suicidal don't know how to handle emotions
- 6 People who are suicidal over react to feelings/stressors
If someone attempts suicide it will take a long time for them to return to
- 7 normal
- 8 Only women in the military attempt to kill themselves
People who are comfortable with their appearance and feelings don't attempt
- 9 suicide
- 10 Unit support can help prevent suicide
The unit should be suspicious of whether or not people are telling the truth
- 11 when they claim to be suicidal
- 12 People who go out and have fun aren't feeling suicidal
Avoiding people who are suicidal may make them more likely to kill
- 13 themselves
People who claim to be suicidal should be included in all military activities,
- 14 it may help them
- 15 Suicide watch can make it harder for people to get better
- 16 Seeking help can be a sign of courage
- 17 People who seek help for suicide are punished by the military