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TITLE: Peer-to-Peer Programs for Military Suicide Prevention

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14. ABSTRACT In this study a proposed peer-to-peer (P2P) program, called Airman's Edge, is evaluated for its effectiveness as a suicide prevention intervention. Airman's Edge is a hybrid model that includes both group-based peer educator and individual-based peer support components; these P2P program models have demonstrated the strongest outcomes with respect to changing attitudes, perspectives, and behaviors. The Airman's Edge program is comprised of several skills-based strategies that have been shown to directly reduce suicidal thoughts and behaviors (i.e. sleep habits, firearm safety procedures, crisis response planning), and targets population-level contextual variables known to reduce suicide risk (i.e. purpose and meaning in life, social support). The mechanisms by which these strategies reduce suicidal behavior align with an empirically-supported conceptual model, the suicidal mode, which has guided recent advances in suicide prevention.					
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1. INTRODUCTION:

In this study a proposed peer-to-peer (P2P) program, called Airman's Edge, is evaluated for its effectiveness as a suicide prevention intervention. Airman's Edge is a hybrid model that includes both group-based peer educator and individual-based peer support components; these P2P program models have demonstrated the strongest outcomes with respect to changing attitudes, perspectives, and behaviors. The Airman's Edge program is comprised of several skills-based strategies that have been shown to directly reduce suicidal thoughts and behaviors (i.e. sleep habits, firearm safety procedures, crisis response planning), and targets population-level contextual variables known to reduce suicide risk (i.e. purpose and meaning in life, social support). The mechanisms by which these strategies reduce suicidal behavior align with an empirically-supported conceptual model, the suicidal mode, which has guided recent advances in suicide prevention.

2. KEYWORDS:

Peer-to-peer, military suicide prevention, peer mentoring, crisis response plan, lethal means counseling

3. ACCOMPLISHMENTS:

What were the major goals of the project?

Major Goals

1. To test the efficacy of a P2P program for the reduction of suicidal behavior among military personnel.
2. To identify moderators and mediators of the P2P program's effects on suicidal behavior.

Project Milestones

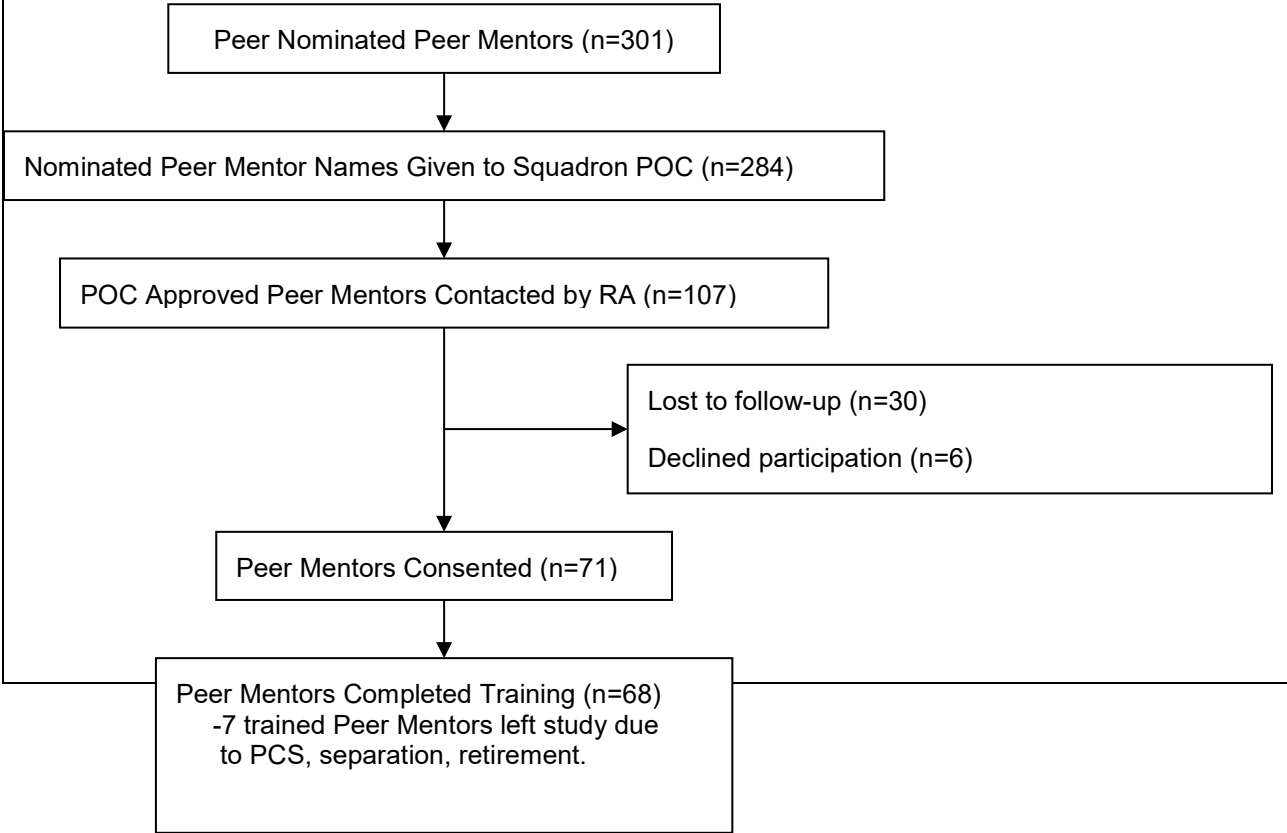
1. Obtain University of Utah IRB approval (Initial Approval received on 4/3/19; Amended on 8/23/19 following HRPO recommended changes). 100% complete
2. Amendment to Statement of Work: Removal of requirement to execute a Cooperative Research and Development Agreement (CRADA) with Whiteman Air Force Base. Approved on 8/28/2019. 100% complete.
3. Obtain HRPO approval (Initial review received on: 7/17/2019; Approved on 9/13/2019). 100% complete.
4. Project Coordinator trained (Completed: 3/30/2019). 100% complete.
5. Research Associate trained (Target: 9/30/2019). 100% complete.
6. Complete database build (Completed: 3/30/2019). 100% complete.
7. Begin enrollment (Target: 1/31/2020). 100% complete, Phase 1 of 6 survey roll out completed on 2/29/2020.

8. Begin P2P training workshops, program implementation (Completed on: 9/1-9/3/2020):100% complete.
9. Begin follow-up assessments (Target: 6/1/2020): 100% complete, expected completion by 6/30/2020
10. Complete follow-up assessments (Target: 12/31/2021). 83.3% complete (5/6 surveys completed), expected completion by 11/30/2021.
11. Complete P2P training workshops (Target: 10/21/2021). 80% complete (4/5 training workshops completed).
12. Complete data analyses (Target: 6/30/2022). 10% complete, expected completion by 6/30/2022.

What was accomplished under these goals?

The primary focus of the third year was to complete the remaining peer mentor trainings and assessment started in the second year of the grant. To date we have completed 4/5 of the peer mentor trainings, with the last one scheduled for this upcoming December. We have now trained a total of 68 peer mentors (See Consort Diagram).

CONSORT Diagram



COVID-19 and the emergence of the Delta Variant continued to impact recruitment through this past year. However, we feel we have adapted to the challenges well to ensure the success of the program. One shift we've made is stressing individual interactions between the peer-mentors and peers within squadrons and being creative in implementing the group trainings in innovative ways. Peer mentors have conducted a total of 24 presentations to their respective squadrons, 403 individual interactions with Airmen, referred 25 Airmen for mental health services plus an additional 52 referrals to other resources (i.e., chaplain, family advocacy, etc.), and completed 11 crisis response plans.

We have now completed 5/6 total installation wide surveys assessing mental health wellbeing of the Airmen at Whiteman AFB.

We have also tested a variety of methods for matching anonymous participant responses across multiple time points. At the beginning of each survey, participants answer 5 questions to create a unique code that preserves their anonymity while also allowing us to link unique response combinations over repeated assessments. We also ask each participant to identify their military unit. We have tested and compared 7 different methods for matching responses based on previously published recommendations. These methods have ranged from highly stringent match requirements (100% match for all code elements) to fairly lenient requirements (80% match across all code elements). We have also updated our methods to account for multiple survey completions over time by a single participant, consistent with our repeated measures design. Based on these methods, the estimated number of participants to date ranges from 1368 to 2178 unique participants. A summary of the matching methods tested are as follows:

1. 4 out of 5 code items match (80% match)	2000
2. 5 out of 5 code items match (100% match)	1368
3. 5 out of 5 code items match and 1 out of 3 unit items match	2053
4. 5 out of 5 code items match and 2 out of 3 unit items match	2114
5. 4 out of 5 code items match and 1 out of 3 unit items match	2053
6. 4 out of 5 code items match and 2 out of 3 unit items match	1945
7. 5 out of 5 code items match and 3 out of 3 unit items match	2178

Two of the six methods (method #3 and method #5) estimated 2053 unique participants. These two methods required at least 80% code element match and at least one match in unit assignment. We believe this method provides the best way to match responses over time and track overall enrollment numbers because it requires a high level of consistency (at least 80%) while allowing for a small degree of human error (e.g., a participant selecting the digit 2 instead of 3 from a drop-down list), and reduces the possibility of incorrectly matching two distinct people with similar codes who are assigned to different.

We therefore estimate our current sample size to include 2053 unique participants.

What opportunities for training and professional development has the project provided?

We trained a total of 68 Airmen to be peer mentors for their individual squadron. Training consisted of Motivational Interviewing techniques, Airman Edge specific curriculum, and Crisis Response Planning.

How were the results disseminated to communities of interest?

Nothing to report.

What do you plan to do during the next reporting period to accomplish the goals?

We have one final installation wide survey to conduct in November and one additional peer mentor training in December. Once those are complete we will begin the data analysis process.

4. IMPACT:

What was the impact on the development of the principal discipline(s) of the project?

Nothing to report.

Nothing to report.

What was the impact on technology transfer?

Nothing to report.

What was the impact on society beyond science and technology?

Nothing to report.

5. CHANGES/PROBLEMS:

We requested and were granted a one year no cost extension in order to account for the time lost due to the COVID-19 pandemic that delayed the roll out of peer mentor trainings.

No amendments to the IRB were made over the course of the past year.

Actual or anticipated problems or delays and actions or plans to resolve them

No further delays to the study over and above what was encountered the previous year due to the pandemic.

Changes that had a significant impact on expenditures

A no cost extension was requested and granted. Sufficient funding remains to cover remaining expenditures for the no cost extension.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Significant changes in use or care of human subjects

Nothing to report.

Significant changes in use or care of vertebrate animals

Nothing to report.

Significant changes in use of biohazards and/or select agents

Nothing to report.

6. PRODUCTS:

- **Publications, conference papers, and presentations**

Journal publications.

Nothing to report.

Books or other non-periodical, one-time publications.

Nothing to report.

Other publications, conference papers and presentations.

- Nothing to report.

Nothing to report.

- **Technologies or techniques**

Nothing to report.

- **Inventions, patent applications, and/or licenses**

Nothing to report.

- **Other Products**

Nothing to report.

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name:	Craig J. Bryan, Psy.D., ABPP
Project Role:	Principal Investigator
Researcher Identifier (e.g. ORCID ID):	0000-0002-9714-0733
Nearest person month worked:	2.4
Contribution to Project:	Dr. Bryan has performed work in the areas of collaborating with base leadership related to survey roll out, data collection, and participant recruitment, preparation of conference presentation, weekly administrative meetings, and bimonthly project coordinator meetings.

Name:	AnnaBelle Bryan, M.S.
Project Role:	Co-Investigator
Researcher Identifier (e.g. ORCID ID):	0000-0002-6192-4229
Nearest person month worked:	1.2
Contribution to Project:	Ms. Bryan has performed work in the areas of weekly administrative meetings, bimonthly project coordinator meetings, preparation of conference presentation, training of peer-mentors, and participant recruitment and data collection.

Name:	Brian Baucom, Ph.D.
Project Role:	Co-Investigator
Researcher Identifier (e.g. ORCID ID):	0000-0002-0263-3763
Nearest person month worked:	0.6
Contribution to Project:	Dr. Baucom assisted with preparation of quarterly reports and the continuing review process.

Name:	Justin C. Baker, Ph.D.
Project Role:	Project Coordinator
Researcher Identifier (e.g. ORCID ID):	0000-0001-7010-5009
Nearest person month worked:	12.0
Contribution to Project:	Dr. Baker has performed work in the areas of participant recruitment, data collection, and coordination with site leadership. He oversees the daily operations of the project, including supervising the onsite research associate. Assisted with training of the peer-mentors and preparation of the conference presentation. Attends weekly meetings with the Research Associate, in addition to weekly

administrative meetings with the PI, and bimonthly project coordinator meetings.

Name: Maj Katie Ragan
Project Role: Consultant
Researcher Identifier (e.g. ORCID ID): N/A
Nearest person month worked: 0.6
Contribution to Project: Maj Ragan provided assistance with liasoning with base wide leadership and providing day-to-day oversight for our onsite research associate.

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Dr. Bryan reports the following active support since the last reporting period:

Award Number: W81XWH-18-2-0022

Title: Brief Cognitive Behavioral Therapy (BCBT) Replication Trial

Time Commitments: 3/year

Supporting Agency: US Army Medical Research and Material Command

Address: 1520 Freedman Drive, Suite 227, Fort Detrick, MD 21702-5012

Contracting/Grants Officer: Michelle Lane

Performance Period: 7/1/2018-6/30/2023

Level of Funding:

Project Goals: The primary objective of this project is to test the efficacy of the brief cognitive behavioral therapy (BCBT) for the prevention of suicide attempts as compared to present centered therapy (PCT) among active duty military personnel.

Specific Aims: Specific Aim 1: To replicate previous findings supporting the efficacy of BCBT for the prevention of suicide attempts among active duty Marines (regardless of Axis I or II diagnosis). The standard null hypothesis will involve tests conducted comparing improvement following BCBT to Present-Centered Therapy (PCT). Specific Aim 2: To identify cognitive-affective mediators of BCBT's effects on risk for suicide attempt.

Overlap: The current PRMRP proposal uses the same intervention of interest being studied in this replication trial, but is adapting BCBT to be administered in a group format.

Award Number: R01 MH117600

Title: Identifying Suicidal Subtypes and Dynamic Indicators of Increasing and Decreasing Suicide Risk

Time Commitments: 1.8/year

Supporting Agency: NIMH

Address: 6001 Executive BLVD, Room 6200, MSC 9663, Bethesda, MD 20892-9663

Contracting/Grants Officer: Michele Ferrante

Dates of Funding: 6/1/2018-5/31/2021

Level of Funding:

Project Goals: To conduct secondary analyses on archived datasets in order to advance our understanding of temporal processes associated with the escalation and resolution of suicide risk.

Specific Aims: (a) identify subgroups of suicidal military personnel and (b) identify different patterns of increasing, decreasing, and static suicide risk. Results of this analysis will enable us to identify discrete genotype-phenotype expressions of suicide risk, thereby enabling us to identify multiple risk models that can be used to improve risk detection and refine suicide prevention interventions.

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

Award Number: 60079064

Title: Cardinal Health Foundation Zero Suicide Collaborative OSUWMC

Time Commitments: 0/year

Supporting Agency: Cardinal Health Foundation

Address: 7000 Cardinal Place, Dublin, OH 43017

Contracting/Grants Officer: N/a

Performance Period: 2020-2022

Level of Funding:

Project Goals: The purpose of this project is to implement recommended suicide prevention screening, assessment, and treatment strategies into the OSUWMC healthcare system.

Specific Aims: In this project, we are implementing empirically supported suicide risk screening, assessment, and treatment methods into the OSUWMC system.

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

Award Number: R61MH125759

Title: Mechanisms underlying the association of firearm availability and vulnerability to suicide

Time Commitments: 2.4/year

Supporting Agency: NIMH

Address: 6001 Executive BLVD, Room 6200, MSC 9663, Bethesda, MD 20892-9663

Contracting/Grants Officer: Stephen O'Connor

Performance Period: 09/21/2020-09/22/2022

Level of Funding:

Project Goals: The proposed project will provide novel information about developmental, individual, and contextual factors that contribute to firearm suicide, and will identify potential intervention targets that could be strengthened to reduce the risk associated with firearm availability.

Specific Aims: We will (Aim 1) reveal biobehavioral processes associated with firearm availability and suicide risk using the NPU-threat startle paradigm and the stop-signal reaction time test to identify differences in behavioral reactivity under conditions of uncertain threat (i.e., anticipatory anxiety) and differences in inhibitory control. We will (Aim 2) examine associations among firearm possession, emotional reactivity, and suicide risk following socially ambiguous situations using the Video Social Emotional Information Processing (V-SEIP) task to assess differences in negative emotional reactivity during socially ambiguous situations. We will (Aim 3) identify contextual factors that influence emotional reactivity among handgun owners using ecological momentary assessment (EMA).

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

Award Number: W81XWH1820064

Title: Peer-to-peer programs for military suicide prevention

Time Commitments: 2.9/year

Supporting Agency: US Army Medical Research and Materiel Command

Address: 1520 Freedman Drive, Suite 227, Fort Detrick, MD 21702-5012

Contracting/Grants Officer: Michelle Lane

Performance Period: 07/01/2020-09/29/2021

Level of Funding:

Project Goals: This study aims to assess the effectiveness of a peer-to-peer program for the reduction of suicide attempts and suicide ideation within a military population.

Specific Aims: Aim 1: To test the efficacy of a P2P program for the reduction of suicidal behavior among military personnel. Aim 2: To identify moderators and mediators of the P2P program's effects on suicidal behavior.

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

Award Number: STRIVE-10049890

Title: Suicide and Trauma Reduction Initiative for VEterans (STRIVE)

Time Commitments: 0.46/year

Supporting Agency: The Boeing Company

Address: 100 North Riverside, Chicago, IL 60606

Contracting/Grants Officer: N/a

Performance Period: 11/1/2018-12/31/2021

Level of Funding:

Project Goals: The goal of this project is to provide trauma-focused therapy to 200 military and veterans with PTSD and comorbid suicide ideation.

Specific Aims: Aim 1: Determine if the effects of cognitive processing therapy (CPT) on suicide ideation can be enhanced by integrating the crisis response plan (CRP) into treatment. Exploratory Aim: Determine if CPT+CRP reduces the risk of new-onset suicide ideation as compared to CPT.

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

Award Number: W81XWH-16-2-0004

Title: Suicide risk and sleep in treatment: An intensive daily sampling study

Time Commitments: 0.45/year

Supporting Agency: Military Suicide Research Consortium

Address: 221 Thornberg Dr., Tallahassee, FL 32312

Contracting/Grants Officer: Enrique Vargas

Performance Period: 07/01/2020-06/30/2021

Level of Funding:

Project Goals: In the current proposal, we plan to improve upon strategies for evaluating suicide risk in psychotherapy with the use of wearable monitoring devices to help better understand the association between sleep disorders and suicide risk.

Specific Aims: We hypothesize that active (i.e., EMA) and passive (i.e., wearable devices measuring sleep, motor activity, and heart rate) assessments will outperform weekly measures in

predicting suicidal ideation. In addition, this study will examine mediators and moderators of the associations among sleep disturbances and suicidal ideation.

Overlap: No scientific or budgetary overlap with the proposed PRMRP proposal

What other organizations were involved as partners?

Xcelerate Innovations, 32050 Lilac Ln, North Ridgeville, OH 44039.

Kent Corso with Xcelerate Innovations assisted with the statistical analyses for the project. He and his team at Xcelerate Innovations have developed a highly specialized non-linear analytical software tool explicitly intended for analyzing change in low base-rate phenomena such as suicide. They identified a set of variables that were collected from Whiteman AFB as part of our system level data analyses. This past year they have nearly completed collection of all installation level data for these planned analyses.

8. SPECIAL REPORTING REQUIREMENTS

COLLABORATIVE AWARDS: *None*

QUAD CHARTS: *See attached*

9. APPENDICES: *None*