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Factors protecting against the development of suicidal ideation in military veterans

The growing rate of suicide among military veterans is a critical public health concern^{1,2}. Accordingly, there is an urgent need to better identify at-risk veterans and provide early targeted interventions³. Numerous studies have examined risk factors for suicide in veterans, which have generally focused on mental and physical health problems^{4,5}. Surprisingly scarce research has sought to identify modifiable protective factors, despite emerging theoretical frameworks of suicide risk emphasizing such factors, including psychological resilience (i.e., psychological qualities that allow one to better manage adversity, such as self-efficacy and cognitive flexibility), acceptance-based coping (i.e., acceptance that a traumatic or stressful life event is real and must be addressed), social support, optimism, and curiosity⁶⁻⁸.

Characterization of risk and protective factors linked to early indicators of suicide risk, such as suicidal ideation, is critical to informing targeted suicide prevention efforts³. Prospective cohort studies that follow population-based, non-psychiatric samples *prior to* the development of suicidal ideation are an ideal context within which to identify such factors. We explored the risk and protective factors associated with the development of suicidal ideation over a 4-year period in a nationally representative sample of military veterans.

We analyzed data from the National Health and Resilience in Veterans Study, a nationally representative, prospective cohort study of US veterans. The sample was drawn from a survey panel of 50,000 US adults maintained by GfK Knowledge Networks Inc. The baseline survey was conducted in September-October 2011, and follow-up surveys were carried out in September-October 2013 and 2015. In the current study, we analyzed data from 2,093 veterans who did not endorse suicidal ideation at baseline and who completed at least one follow-up assessment over the 4-year follow-up period. The study was approved by the Human Subjects Subcommittee of the VA Connecticut Healthcare System.

Suicidal ideation was assessed using a two-part question from the Patient Health Questionnaire-9: "Over the last 2 weeks, how often have you been bothered by the following problems: thoughts you might be better off dead, and thoughts of hurting yourself in some way?". Items were coded 0 ("not at all"), 1 ("several days"), 2 ("more than half the days"), or 3 ("nearly every day"). Incident suicidal ideation was operationalized as endorsement of "1" or higher on either question over the 4-year follow-up period. A comprehensive range of socio-demographic, military, health and psychosocial (perceived resilience, opti-

mism, purpose in life, social support, coping strategies, and religiosity/spirituality) characteristics were assessed⁹.

A hierarchical multivariate binary logistic regression analysis was conducted to evaluate baseline predictors of incident suicidal ideation over the 4-year period. Socio-demographic (e.g., age) and military (e.g., combat veteran status) variables were entered in step 1; potential risk factors (e.g., depression, post-traumatic stress disorder (PTSD), somatic problems) in step 2; and potential protective factors (e.g., scores on measures of psychosocial characteristics and social connectedness) in step 3. Incident suicidal ideation (no/yes) was the dependent variable. The analysis was weighted post-stratification based on the demographic distribution from the most contemporaneous current population survey of the US Census Bureau, to permit generalizability to the US veteran population.

The mean age of the sample was 62.4 ± 13.8 years (range 22-93) and included predominantly male (92.0%), white (78.5%) and non-combat-exposed (68.4%) veterans. One hundred forty-three (weighted 7.5%) veterans developed suicidal ideation over the 4-year follow-up period.

Increased risk of incident suicidal ideation was associated with loneliness (i.e., score on Short Loneliness Scale; relative risk ratio, RRR=1.22, $p=0.002$; relative variance explained, RVE=16.5%); disability in instrumental activities of daily living (i.e., endorsement of needing help with activities such as doing housework and taking medication properly; RRR=3.46, $p<0.001$; RVE=14.8%); PTSD symptoms (score on PTSD Checklist; RRR=1.05, $p<0.001$; RVE=7.9%); somatic problems (i.e., score on somatization subscale of Brief Symptom Inventory-18; RRR=1.09, $p<0.001$; RVE=7.0%); alcohol use problems (i.e., score on Alcohol Use Disorders Identification Test-Consumption; RRR=1.10, $p=0.001$; RVE=5.7%); denial-based coping (i.e., endorsing use of denial to cope with trauma on the Brief COPE; RRR=3.36, $p=0.002$; RVE=4.3%); and higher age (RRR=1.02, $p=0.015$; RVE=2.0%).

Decreased risk of incident suicidal ideation was independently associated with greater social support (score on Medical Outcomes Study Social Support Scale-5; RRR=0.94, $p=0.002$; RVE=20.3%); curiosity (score on "I frequently find myself looking for new opportunities to grow as a person (e.g., information, people, resources)" item from the Curiosity and Exploration Inventory; RRR=0.85, $p<0.001$; RVE=9.3%); resilience (score on Connor-Davidson Resilience Scale-10; RRR=0.96, $p=0.009$; RVE=8.0%); and acceptance-based coping (endorsement of use of

acceptance-based coping on the Brief COPE; RRR=0.60, p=0.014; RVE=4.2%).

This study provides one of the most comprehensive assessments to date of risk and protective factors for developing suicidal ideation in a nationally representative sample of military veterans. They replicate prior work implicating mental and physical health problems as risk factors for suicidality in veterans^{4,5} and extend these findings to suggest that loneliness, disability in instrumental activities of daily living, and denial-based coping may additionally contribute to suicidal ideation risk in this population.

Greater perceived social support, curiosity, resilience, and acceptance-based coping accounted for more than 40% of the total variance in predicting suicidal ideation risk. These protective factors are modifiable and addressed in contemporary cognitive-behavioral psychotherapies⁶⁻⁸, and thus may be promising targets in prevention efforts designed to mitigate suicide risk in veterans.

Taken together, the results of this study underscore the importance of comprehensive and multi-modal assessment, monitoring, prevention, and treatment approaches that target a broad range of risk and protective factors for suicidal ideation¹⁰.

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Protecting youth mental health, protecting our future

Youth mental health disorders cause immense disease burden and high mortality. Finding an effective response to this challenge is now more pressing than ever, because “the largest generation of young people in human history is coming of age”¹. The urgency and importance of the issue has alerted many political leaders, researchers and others^{2,3}.

However, despite these calls for action, very little has happened. Yet, to many of us working in this area, the barriers to the implementation of an effective strategy do not seem insurmountable. The key barriers to early identification and prevention are known⁴, and include low rates of help seeking, the limited capacity of existing services to respond, and the fact that health systems are not suited to young people's needs.

These barriers have been overcome for other illnesses, such as cancer and HIV. Yet, not so for depression in youth. So, the question is: why this lack of action? We suggest two explanations. The first is that the misconceptions and falsehoods around the nature of youth depression accumulate to form the idea that mental health disorders are “too hard” or that we know too little. The second is the lack of an actionable, prioritized, *implementable* blueprint supported by governments around the world.

Depression is wrongly conceptualized by many as a “first world problem”, that is more prevalent in more affluent countries, and is secondary to more important physical or communicable diseases that are higher contributors to mortality. In reality, however, depression is the third leading cause of disability for 15-24 year olds globally after skin and subcutaneous diseases, and low back and neck pain⁵, and in many high-income countries, suicide is the leading cause of death for 15-29 year olds⁶. It is true that in less affluent countries depres-

sion can be seen as a proportionally less significant problem, because death from other causes, such as infectious diseases, is higher. However, death from these causes is decreasing, and non-communicable diseases are on a rising trajectory. Moreover, depression is pervasive in its effects on all aspects of the person's life: work productivity as well as other means of contributing to and benefiting from the social, political and other aspects of community. This is particularly true for young people who are the world's future.

A second misconception is that depression is not a “real” medical disorder. This is demonstrated by the fact that many people believe that treatment of depression is via “social support”, connectivity, or the use of vitamins. When depression is not seen as a “real” disorder, stigma and discrimination will thrive.

As to intervention, many believe wrongly that there are no effective treatments for depression, so seeking help will be of limited value, and that prevention of depression is not possible, even though a meta-analysis found that the number needed to treat to prevent one case of depression, using currently available interventions, was 22⁷. This is staggeringly high compared to statins, that have to be taken by 60 people for one cardiac incident to be averted, or aspirin, that has to be taken by 1,667.

A number of significant plans have been put forward to address youth depression, but these rarely get “air play”. Most existing blueprints consistently recommend three actions.

School programs should be implemented for all school aged children, including digital prevention programs for depression as well as drug and alcohol abuse, the re-introduction of physical activity, mental health literacy, and stigma reduction pro-