



Non-Service-Related Risk Factors for Suicide Among Canadian Armed Forces Members: Results of a Nested Case-Control Study Using Recruit Health Questionnaire Data

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Suicide

- Significant cause of death worldwide
- Military and civilian risk factors largely overlap
- Common risk factors include:
 - Previous suicidal behaviour
 - Mental disorders
 - Male gender
 - Alcohol and substance use
 - Relationship difficulties
 - Stressful events and adverse childhood experiences



Risk of Suicide in Military Populations

- Military personnel more likely to have risk factors like mental disorders and negative childhood events
- Military-specific risk factors:
 - Lower rank
 - Combat during deployment
- Differences in rates of suicide:
 - Between countries
 - Between still-serving and released populations



Research in the CAF

- Focus on demographic and career-related factors
- Additional research needed on:
 - Social and psychological factors
 - Largely modifiable
 - Pre-enlistment factors
 - Early identification of vulnerabilities to subsequent stressors



The Current Study

- Examine the role of pre-enlistment social and psychological risk factors in predicting suicide among still-serving CAF personnel
- Hypothesized predictors:
 - Recruit/cadet social environment
 - Recruit/cadet mental health
 - Parent mental health



Data Sources

- CAF suicide epidemiological surveillance system
 - All suicides involving CAF Regular and Reserve Force
- Recruit Health Questionnaire (RHQ) database
 - Voluntary pre-enlistment survey for incoming Regular Force recruits and officer cadets
 - RHQ includes:
 - Demographic characteristics
 - Social environment
 - Physical and mental health conditions
 - Health behaviors
 - Personality



Study Design and Participants

- Nested case-control study with 160 participants
 - 32 Regular Force suicide cases
 - All cases with a completed RHQ
 - Occurred between 2009 and 2015
 - 128 matched controls (4 per case)
 - Gender
 - Age group
 - Rank
 - Year of recruitment



Recruit/Cadet Social Environment

- Social Support
- Exposure to Violence
- Adverse Childhood Experiences



- Lived with someone who was depressed or mentally ill
- Lived with problem drinker or alcoholic



Recruit/Cadet Mental Health

- Post-traumatic Stress Disorder Checklist
 - PTSD
- Patient Health Questionnaire
 - Other Anxiety Disorder
 - Depression
 - Suicidal ideation
- Self-reported number of drinks/day in typical week
 - Problem drinking based on guidelines



Parent Mental Health

- Parent ever diagnosed with mental or emotional problems?

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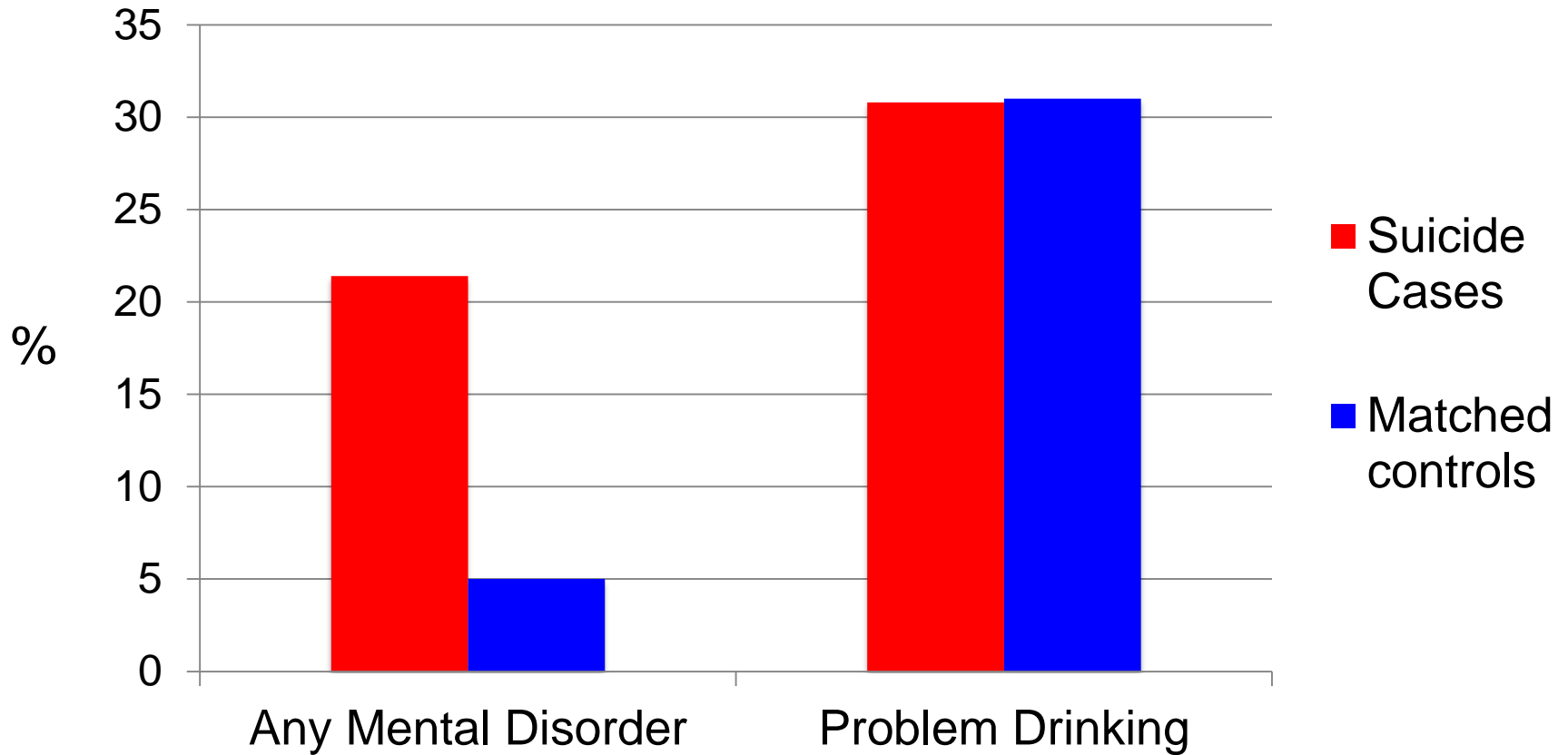


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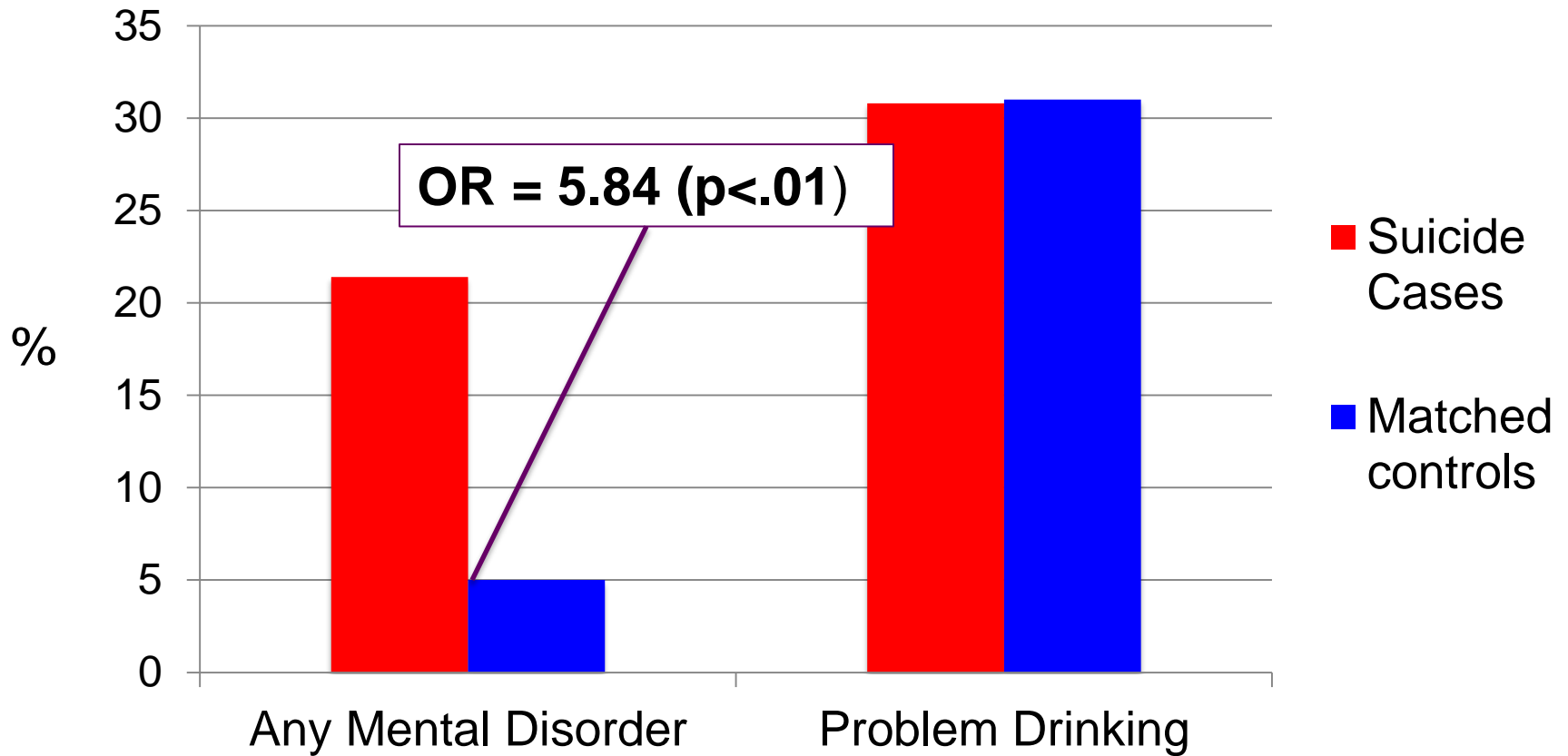
Sample Characteristic	% (identical for cases and controls)
Gender (Male)	100
Age	
< 25	65.6
25 - 29	15.6
≥ 30	18.8
Rank	
Non-commissioned recruit	84.4
Officer cadet	15.6
Recruitment year	
2003 - 2007	40.6
2008 - 2014	59.4



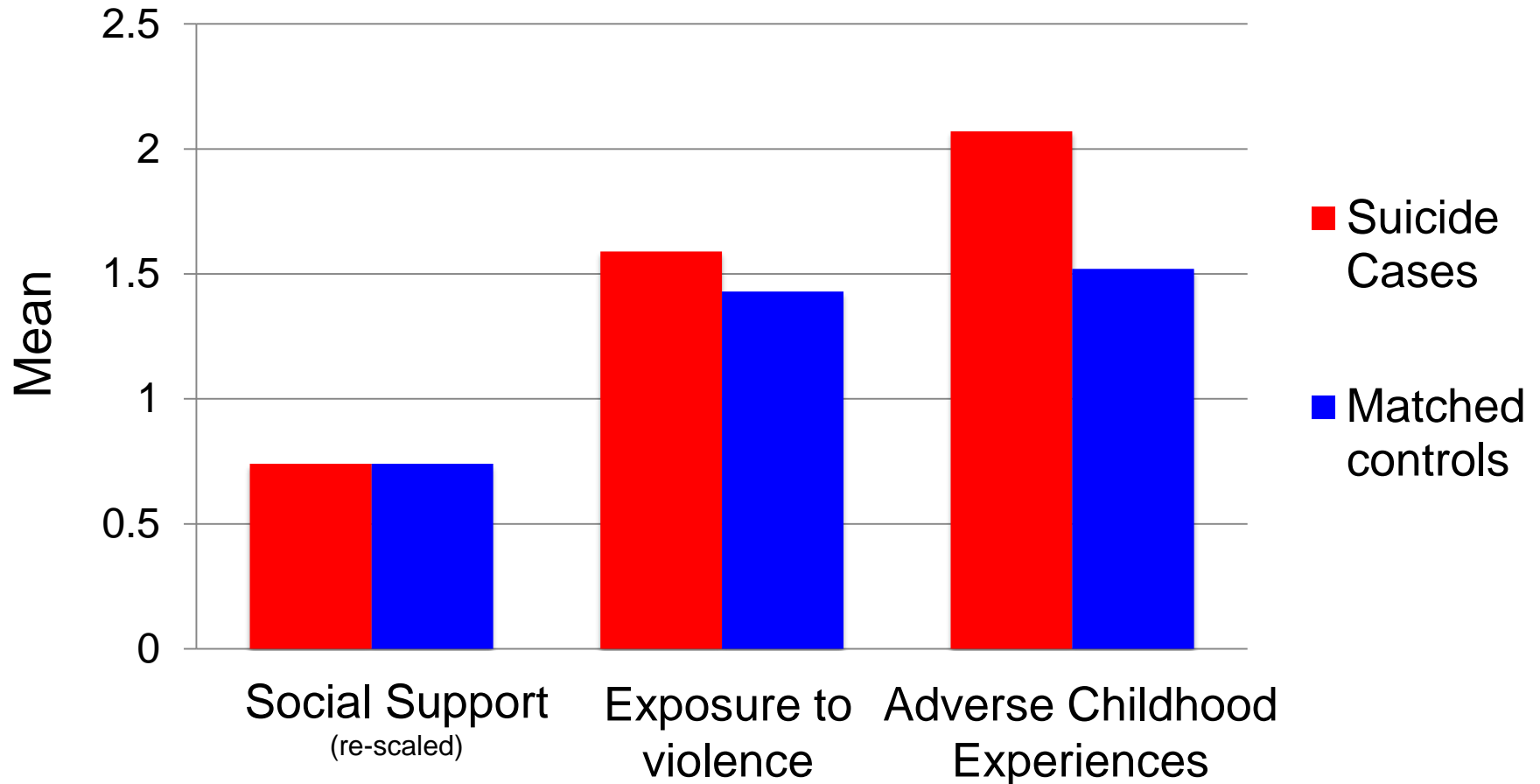
Mental Health



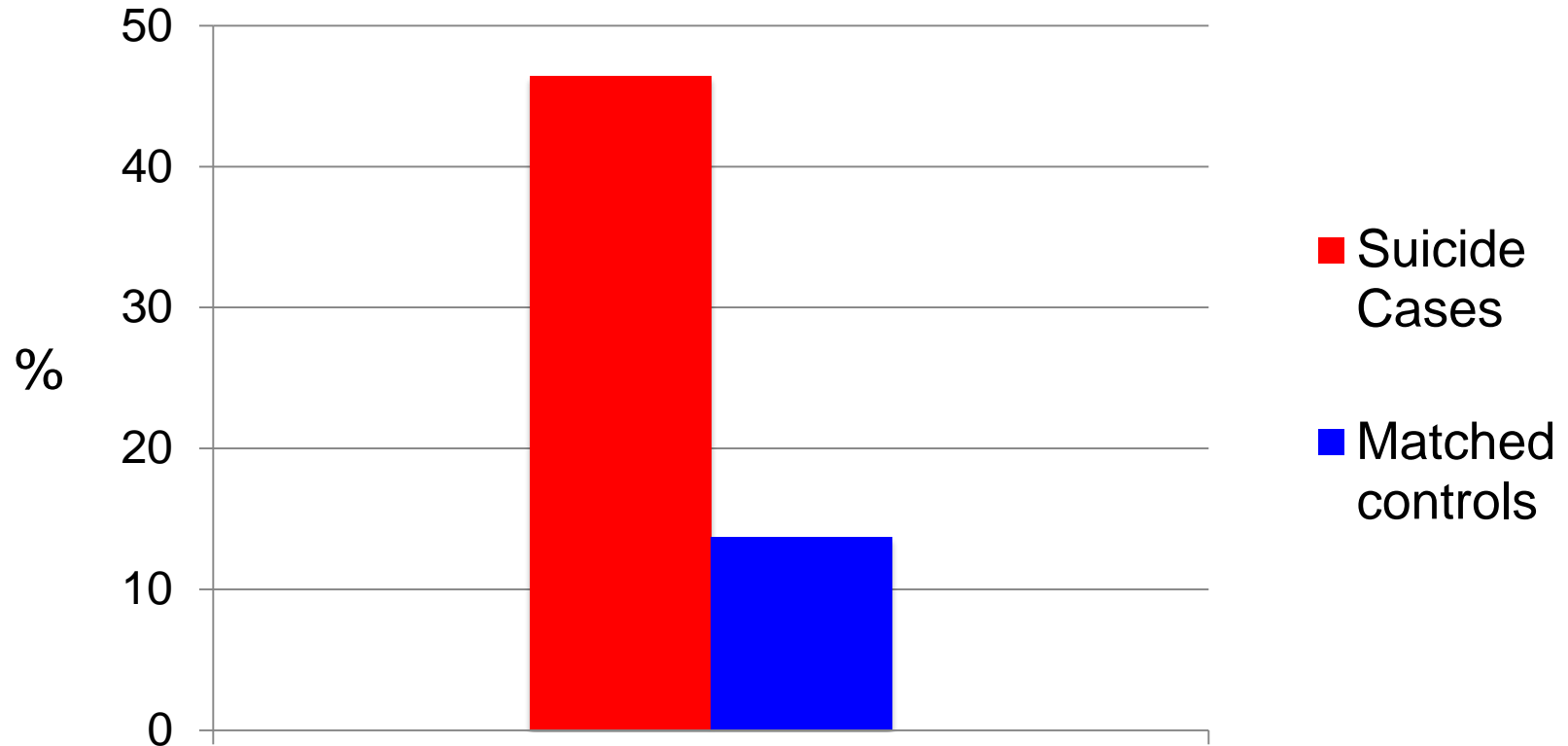
Mental Health



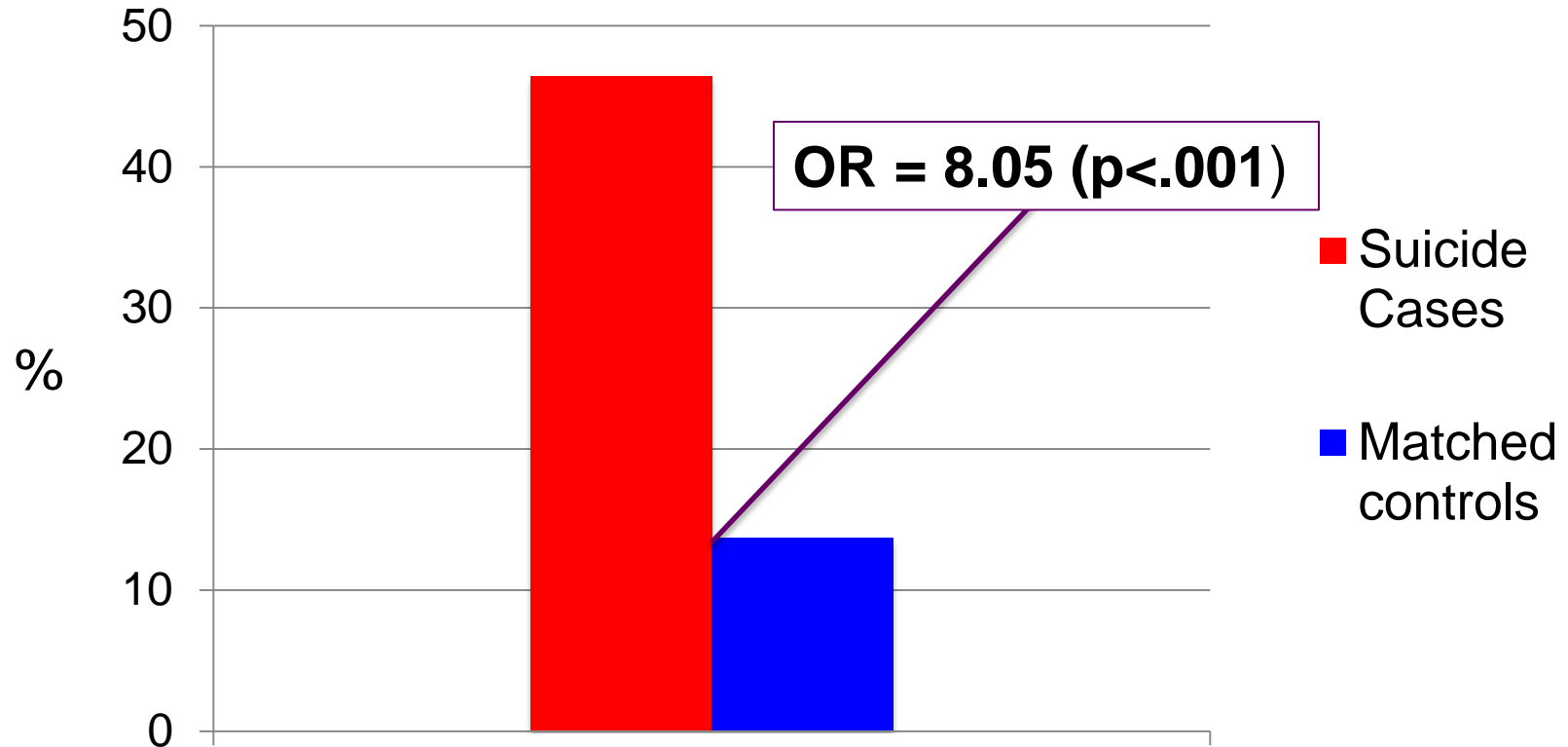
Social Environment



Lived with problem drinker/alcoholic



Lived with problem drinker/alcoholic



Summary and Discussion

- Suicide cases were more likely to have a pre-enlistment mental disorder
 - Consistent with numerous civilian and military studies
 - Lack of similar findings for individual disorders and suicidal ideation
 - Small sample size
 - Limited timeframe
 - Ideation item not commonly used



Summary and Discussion (cont'd)

- Suicide cases were more likely to have lived with a problem drinker or alcoholic
 - Consistent with previous research:
 - Parental alcohol abuse and lifetime suicide attempt
 - Childhood trauma in US Army suicide cases
 - Possible indirect link to suicide
 - Childhood experiences as vulnerability to subsequent risk factors
 - Problem drinking?



Limitations

- Small sample (and did not include suicide cases in the released population)
- Sample not representative of CAF
 - Possible differences between RHQ responders and non-responders
 - Representation across cohort years not consistent
- Reliance on pre-enlistment factors
 - Disorders may develop soon after enlistment
 - Recruits may not want to disclose disorders
 - Accuracy of reporting on childhood experiences



Implications

- Importance of the CAF's mental health care system
 - Improvements since 2000
 - More clinicians
 - Road to Mental Readiness (R2MR)
- Pre-enlistment factors can be strong predictors of suicide
 - Importance of using baseline measures in health research
 - Link between adverse childhood events and suicide may be important area for further study and consideration



Future Directions

- Linkage of RHQ with Canadian Forces Cancer and Mortality Study II (CF-CAMS II)
 - CF-CAMS II includes longitudinal administrative data linked to Statistics Canada's cancer and mortality registries
 - RHQ linkage will allow:
 - The inclusion of all suicide deaths, including in released population
 - Examination of work and deployment-related factors
 - Interactions between pre-enlistment psychosocial factors and career factors



Questions

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