

# Comorbid substance use and major depression: Disability and risk of suicide in a nationally representative sample.

Vivian N. Onaemo<sup>1</sup> MD, MPH, PhD (C); Timothy O. Fawehinmi<sup>2</sup> MD, MPH, MSc; Carl D'Arcy<sup>1, 3</sup> PhD

*<sup>1</sup>School of Public Health, University of Saskatchewan, <sup>2</sup>Independent Research Consultant, Yukon Territory, <sup>3</sup>Applied Research, Department of Psychiatry, University of Saskatchewan.*



UNIVERSITY OF  
SASKATCHEWAN

School of Public Health



# Outline

- Introduction
- Objectives
- Methods
- Results
- Conclusion
- References

# Introduction

- Studies have shown that comorbid major depressive disorder (MDD) and substance use disorders (SUDs)
- are associated with a wide range of negative outcomes
- Such as lower quality of life, greater suicide risk, greater rates of disability

# Introduction cont'd

- Most studies use patients samples which tend to have
- Stronger associations than in the general population
- the treatment samples are often biased by the increased help seeking behavior of individuals with comorbid, more severe and protracted mental health disorders

# Objective

- To examine the degree of disability
- and risk of suicide

associated with comorbid diagnosis of major depression and SUDs (alcohol use disorders (AUD), cannabis use disorders (CUD), other drugs excluding cannabis use disorders (DUD)) in a nationally representative sample.

# Methods

- Data came from the Canadian Community Health Survey (CCHS) – Mental Health Component, 2012.
- A cross sectional survey of individuals ( $n = 25,113$ ) aged 15 years and older living in the ten Canadian provinces between January and December, 2012.

# Methods cont'd

- Diagnoses of major depressive episode, alcohol, drugs (excluding cannabis) and cannabis abuse or dependence, and suicide risk
- were based on WHO-CIDI-3.0 derived from DSM-IV diagnostic criteria.
- Disability was assessed using WHO Disability Assessment Schedule Score 2.0 (WHODAS 2.0)
  - a generic assessment instrument for health and disability in adult populations.

# Methods cont'd

## Statistical Analysis

- Three models (alcohol and depression, cannabis and depression, other drugs excluding cannabis and depression)
- were examined for both suicide ideation and disability.



# Methods cont'd

- In each model, participants with neither diagnosis ('No diagnosis') were the reference category and were compared with single diagnoses and co-morbid diagnoses
- Analysis was done using multilevel mixed effects logistics regression in Stata 14 using the province of residence as the group variable
- Survey design effects were accounted for using survey weights.

# Results

## Participants characteristics

fig.1: Age

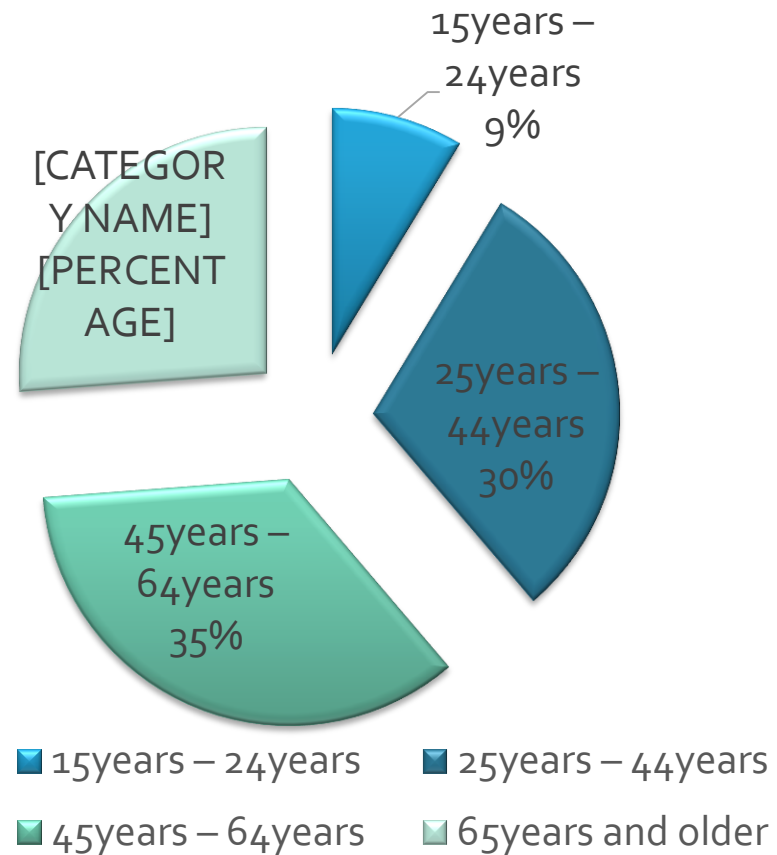
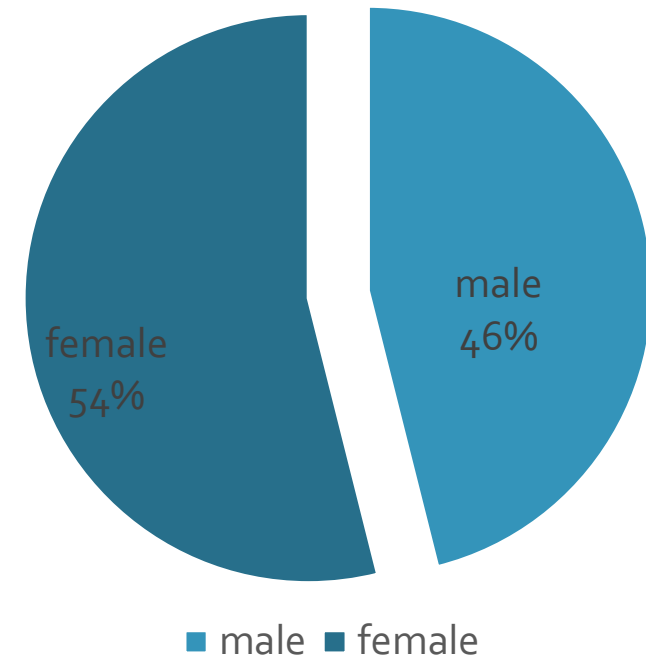
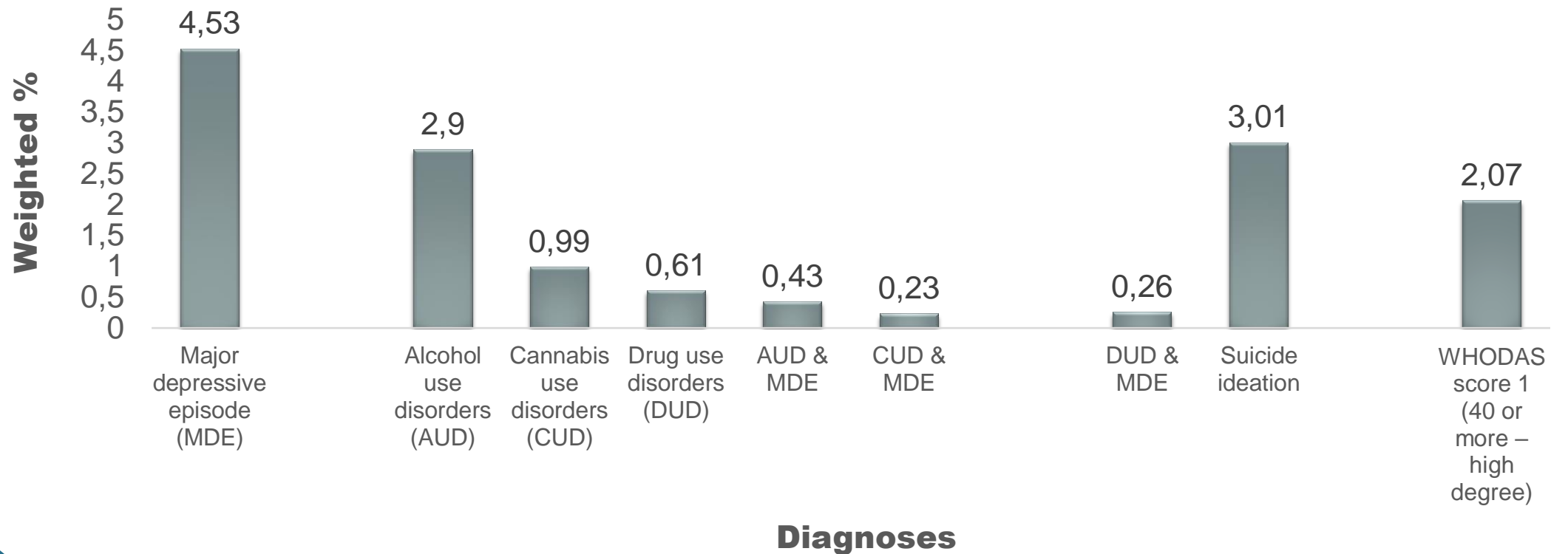


fig.2: gender



# Results cont'd

## Prevalence of 12-months DSM IV diagnoses and WHODAS score



# Results cont'd

**TABLE 1: RELATIONSHIP BETWEEN DSM IV DIAGNOSES AND DISABILITY**

	OR (95% CI)	
	crude	#Adjusted
<b>Alcohol and major depression (model 1)</b>		
AUD without depression	<b>0.44</b> (0.19-1.03)	0.48 (0.22-1.04)
Depression without AUD	<b>10.94</b> (7.85-15.25)	<b>8.28</b> (6.38-10.74)
AUD and depression	<b>3.68</b> (1.30-10.42)	<b>2.99</b> (1.51-5.91)
Neither AUD nor depression	1	1
<b>Cannabis and major depression (model 2)</b>		
CUD without depression	<b>5.12</b> (1.19-21.98)	<b>9.08</b> (1.34-61.53)
Depression without CUD	<b>11.15</b> (7.78-15.95)	<b>9.13</b> (6.89-12.09)
CUD and depression	2.54 (0.19-33.13)	4.79 (0.53-43.00)
Neither CUD nor depression	1	1
<b>Drugs (Ex. Can and major depression (model 3)</b>		
DUD without depression	<b>4.86</b> (2.69-8.77)	<b>5.84</b> (2.26-15.11)
Depression without DUD	<b>10.36</b> (7.76-13.83)	<b>8.29</b> (6.44-10.69)
DUD and depression	<b>11.95</b> (2.05-69.56)	<b>10.39</b> (3.35-32.21)
Neither DUD nor depression	1	1

Significant values are in bold

#Adjusted for age, sex, marital status, household income, smoking status, BMI, no of childhood abuses, personal and family history of mental health disorders.

# Results cont'd

**TABLE 2: DSM IV DIAGNOSES AND THE RISK OF SUICIDE**

	OR (95% CI)	
	crude	#Adjusted
<b>Alcohol and major depression (model 1)</b>		
AUD without depression	2.21 (1.29-3.79)	0.87 (0.51-1.48)
Depression without AUD	8.90 (5.72-14.12)	2.49 (1.78-3.48)
AUD and depression	21.54 (16.07-28.88)	5.69 (3.39-9.56)
Neither AUD nor depression	1	1
<b>Cannabis and major depression (model 2)</b>		
CUD without depression	3.43 (1.47-7.95)	1.14 (0.58-2.25)
Depression without CUD	9.66 (5.99-15.59)	2.73 (1.97-3.79)
CUD and depression	8.52 (3.22-22.55)	2.68 (1.06-6.80)
Neither CUD nor depression	1	1
<b>Drugs (Ex. Can and major depression (model 3)</b>		
DUD without depression	4.05 (2.25-7.28)	1.39 (0.69-2.82)
Depression without DUD	9.06 (5.87-13.98)	2.65 (1.94-3.60)
DUD and depression	23.59 (12.89-43.18)	4.94 (1.84-13.31)
Neither DUD nor depression	1	1

Significant values are in bold

#Adjusted for age, sex, marital status, household income, smoking status, BMI, no of childhood abuses, personal and family history of mental health disorders.

# Major findings

- Comorbid diagnosis of MDE and DUD had significantly higher disability than the diagnosis of MDE or DUD only.
- Comorbid diagnoses of substance use disorders and major depression were 2 to 5 times more likely to have suicide ideation compared to 'No diagnosis'
- Substance use disorders only were not associated with increased risk for suicide

# Conclusion

- Comorbid diagnosis of SUD and MDE seem to be associated with increased disability and risk for suicide.
- Effective integration between addiction and mental health services would improve client outcomes.

# References

Berkson, J., 1946. Limitations of the application of the 4-fold table analyses to hospital data. *Biometrics*, Volume 2, pp. 47-53.

Cornelius, J. R. et al., 1995. Disproportionate suicidality in patients with comorbid major depression and alcoholism. *Am. J. Psychiatry*, Volume 152, pp. 358-364.

Regier, D. A. et al., 1990. Comorbidity of mental disorders with alcohol and other drug abuse. *JAMA*, Volume 264, pp. 2511-2518.

Rounsaville, B. J., Dolinsky, Z. S., Babor, T. F. & Meyer, R. E., 1987. Psychopathology as a predictor of treatment outcome in alcoholics. *Arch Gen Psychiatry*, Volume 44, pp. 505-513.

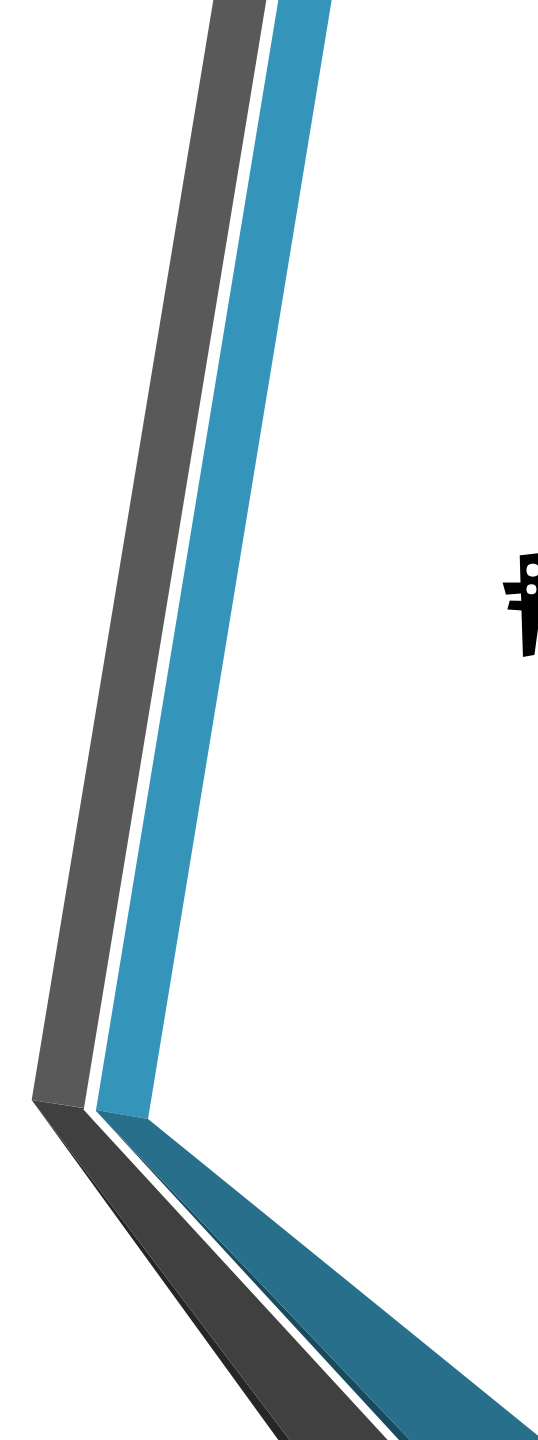
Saatcioglu, O., Yapici, A. & Cakmak, D., 2008. Quality of life, depression and anxiety in alcohol dependence. *Drug and Alcohol Review*, Volume 27, pp. 83-90.

Statistics Canada, 2014. *Canadian Community Health Survey, 2012: Mental Health Component*. [Online] Available at: [http://search1.odesi.ca.cyber.usask.ca/details/view.html?q=cchs&field=&coll=odesiall&coll=DLI&coll=DLI\\_aggregate&coll=CGP&coll=CAD&date-gt=1871&date-lt=2015&p=1&uri=/odesi/cchs-82M0013-E-2012-mental-health.xml](http://search1.odesi.ca.cyber.usask.ca/details/view.html?q=cchs&field=&coll=odesiall&coll=DLI&coll=DLI_aggregate&coll=CGP&coll=CAD&date-gt=1871&date-lt=2015&p=1&uri=/odesi/cchs-82M0013-E-2012-mental-health.xml) [Accessed 26 November 2015].

Üstün, T. B. et al., 2010. Developing the World Health organization Disability Assessment Schedule 2.0. *Bulletin of the World Health Organization*, Volume 88, pp. 815-823.

Weaver, T. et al., 2003. Comorbidity of substance misuse and mental illness in community mental health and substance misuse services. *Br J Psychiatry*, Volume 183, pp. 304-313.





**thank you for listening**