Webinar: How Do We Measure Mental Illness & Addictions at a Population Level?

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What is mental health/ what are mental disorders?

- DSM – 5 vs. ICD 10 vs. ICD 11
- What are the parts?
- In DSM 5, there is no more Multiaxial Assessment System. In DSM – IV, there was a system that included 5 "axes" or dimensions. The axes were:
  - Clinical Syndroms (Anxiety as an example)
  - Personality disorders/mental retardation
  - Medical conditions
  - Stressors
  - Global Assessment of functioning

What is in a statement?

In 2012, 1 in 10 Canadians met the criteria for at least one of the six selected mental or substance disorders.

(Pearson et al., 2013)

Necessary ingredients:

1) Time frame (one year = 2012)

2) Definition of mental disorder (6 Axis 1 disorders out of many: major depressive episode, bipolar disorder, generalized anxiety disorder, and abuse of or dependence on alcohol, cannabis or other drug)

3) Geography

4) Method of assessment (survey = Canadian Community Health Survey CCHS)
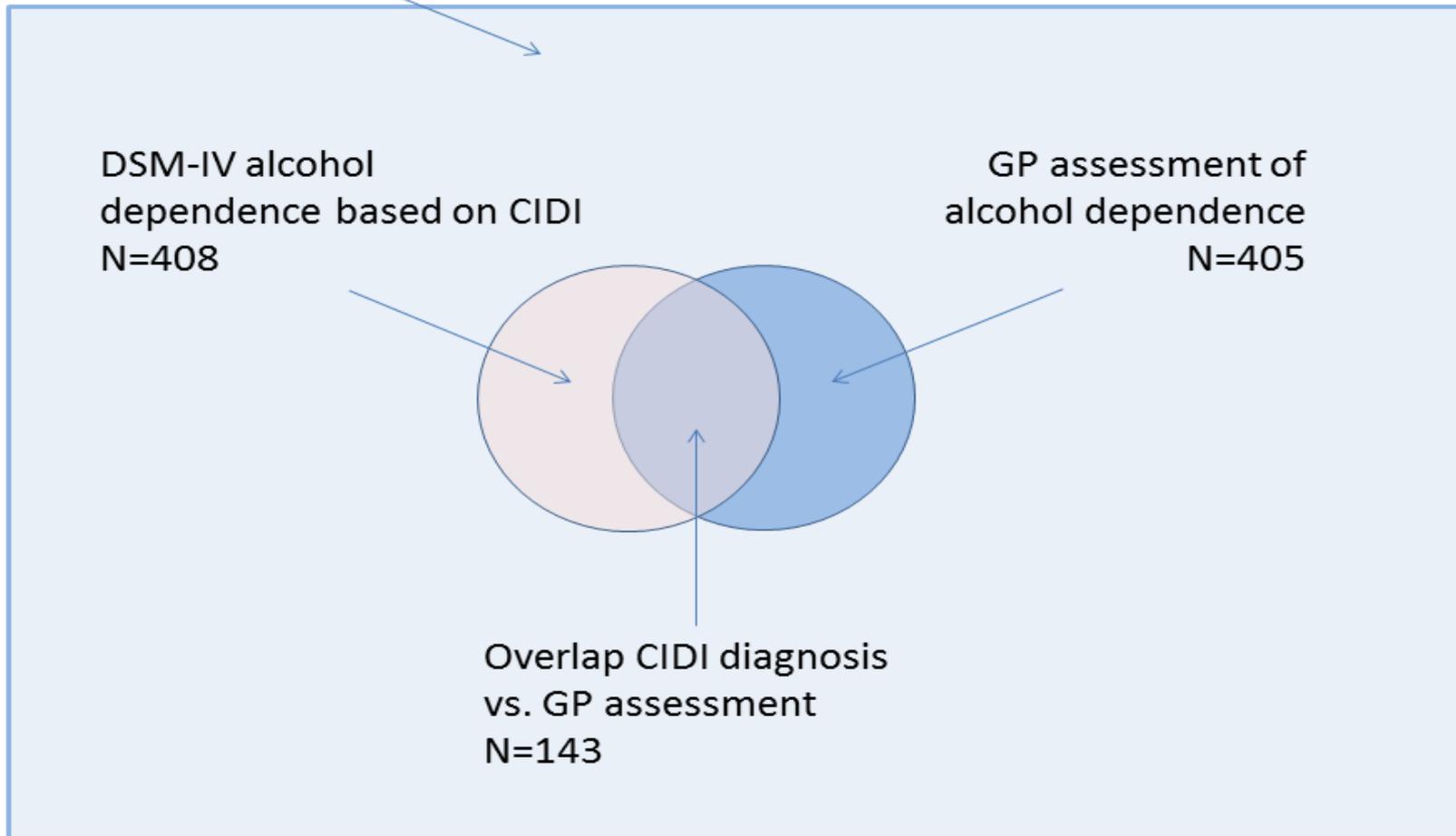
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Who was asked? Households

In total, 36,443 of the selected units in the CCHS - Mental Health were in-scope for the survey. Out of these, 29,088 households agreed to participate in the survey, resulting in an overall household-level response rate of 79.8%. Among these responding households, 29,088 individuals (one per household) were selected to participate in the survey, out of which a response was obtained for 25,113 individuals, resulting in an overall person-level response rate of 86.3%. At the Canada level, this yields a combined (household and person) response rate of 68.9% for the CCHS - Mental Health.
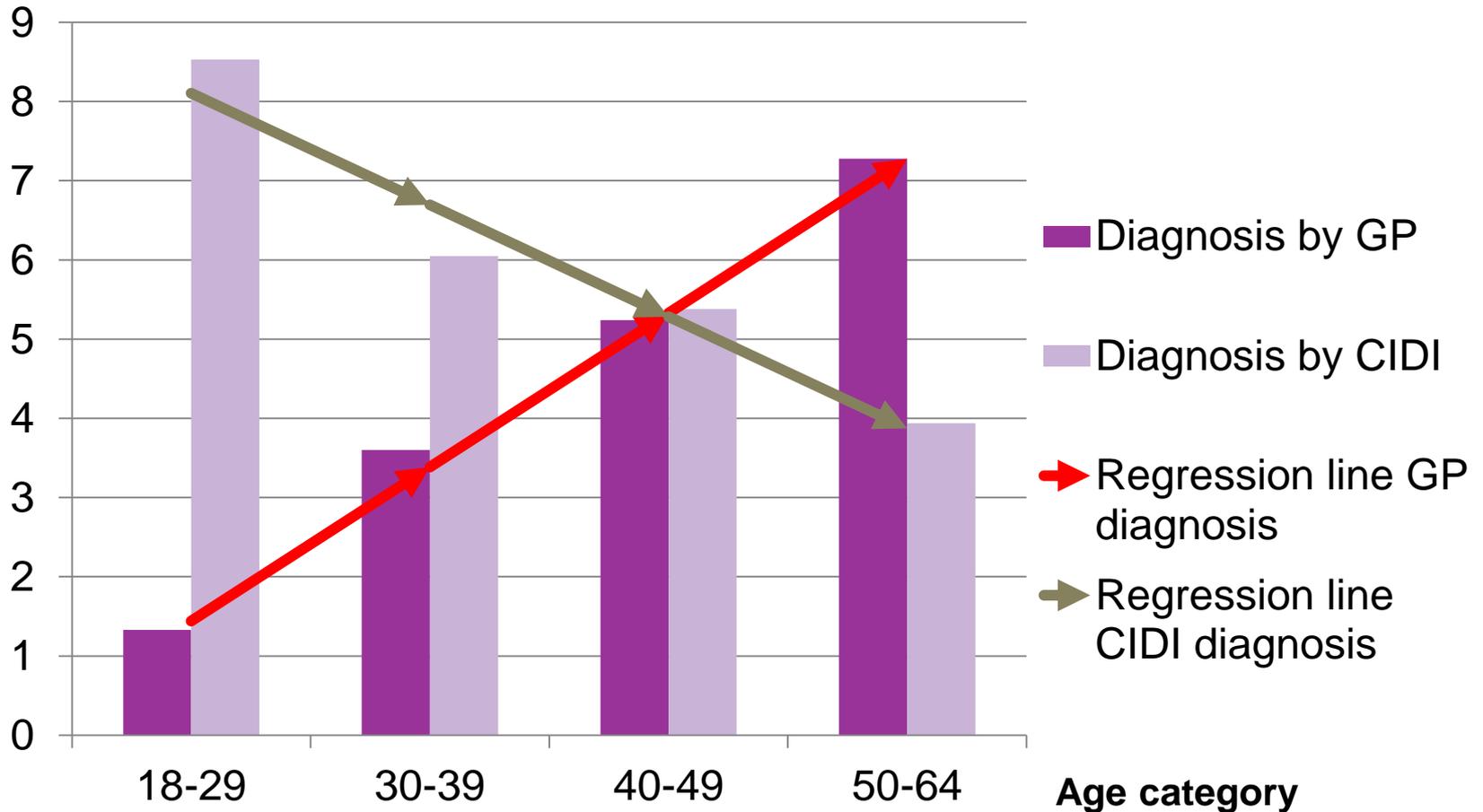
Problem: those outside of households (homeless, institutionalized, people in reserves, people refusing at any level) are known to have higher rates!!

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Population with interviews and GP assessment (light blue rectangle): N=7,279

DSM-IV alcohol dependence based on CIDI N=408

GP assessment of alcohol dependence N=405

Overlap CIDI diagnosis vs. GP assessment N=143

Rehm et al., 2015

Examining some of the elements of statements: survey instruments, the example of alcohol

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A simple calculation

- Official data: alcohol use disorders: 3.2% with manifest AUD in the last year

- Assumption from other literature: 30% higher rate in people of AUD with not responding to the survey new: prevalence: 68.9% with 3.2% plus 31.1%*4.25 = 3.6%

- Now assuming 40% prevalence of AUD in people in prison, homeless and other institutionalized => 4.6%

FINDINGS FOR PRISONS META-ANALYSIS FAZEL:

Thirteen studies with a total of 7563 prisoners met the review criteria. There was substantial heterogeneity among the studies. The estimates of prevalence for alcohol abuse and dependence in male prisoners ranged from 18 to 30% and 10 to 24% in female prisoners. The prevalence estimates of drug abuse and dependence varied from 10 to 48% in male prisoners and 30 to 60% in female prisoners.

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A simple calculation 2

- Now taking into account the imprecision of the instrument for surveys (based on Rehm et al., 2013): 7.6% of the general population have AUD

What is the truth? 3.2% of people with alcohol use disorders in Canada or 7.6%

Both numbers can be justified! Both are based on assumptions.

The wider picture

- Surveys can only be a first departure of modelling
- Comprehensive modelling will have to be based on more than surveys

Smetanin, P., Stiff, D., Briante, C., Ahmad, S. and Khan, M. The Life and Economic Impact of Major Mental Illnesses in Canada: 2011 to 2041. RiskAnalytica, on behalf of the Mental Health Commission of Canada 2011.

A more realistic model of mental health (Smetanin et al., 2011)

- Our model estimated that there are over 6.7 million Canadians currently living with a mental illness, accounting for approximately 19.8% of the total population. By 2041, we forecast that there will be over 8.9 million people living with a mental illness in Canada (1.3 times the current estimate) or approximately 20.5% of the total population. Given the steady state prevalence assumptions applied in our model, this increase is primarily driven by Canada's projected population growth and aging over the next 30 years.

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The difference

- 6 disorders in Pearson et al., 2013 (major depressive episode, bipolar disorder, generalized anxiety disorder, and abuse of or dependence on alcohol, cannabis or other drugs)

vs.

- Many more disorders wider defined (Smetanin et al., 2011):mood disorders, anxiety disorders, schizophrenia, attention deficit/hyperactive disorders (ADHD), conduct disorders, oppositional defiant disorders (ODD), substance use disorders or dementia

Take home points

- All numbers are estimates, even if they come are pure facts

- A survey based estimate (i.e. prevalence of respondents with weighting for population) is not necessary closer to reality than more distant estimates

- I could produce anything from 1 in 4 to 1 in 10 without stretching the truth and without much thinking

- Look into assumptions!!!

- Make clear, what the purpose of the data is and select the best model.

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Conclusion

Nobody and nothing can replace critical consideration of data.

Do not trust estimates without knowing the assumptions and the source!

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Thank you!