

Prevention of Depression and Suicide - Making it Happen

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Contribution Epidemiology and Health Services Research can make

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Epidemiology:

“The study of the ***distribution*** and ***determinants*** of health-related states or problems in ***specified populations***, and the application of this study ***to control of health problems***”.

Last JM. Dictionary of Epidemiology; 2001.

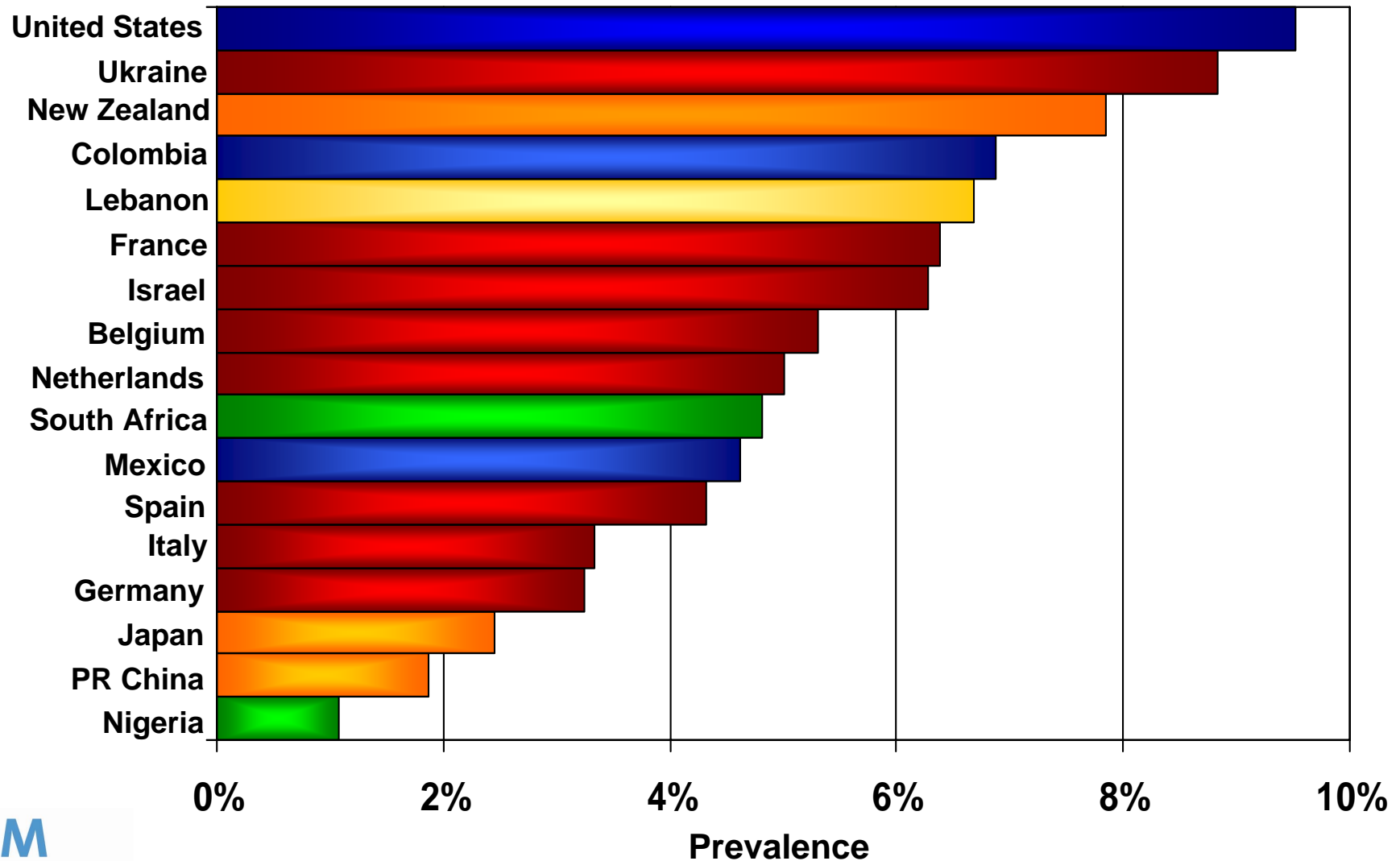
Epi. Contributions: **1. Distribution**

- High **magnitude** of Depression & Suicidality
- Big toll in **disability** and **premature mortality**
- Large **unmet needs** for mental health care
- Marked **prevalence variation** by place and sociodemographic background
- Increasing **time trends**: a depression epidemic in the young?

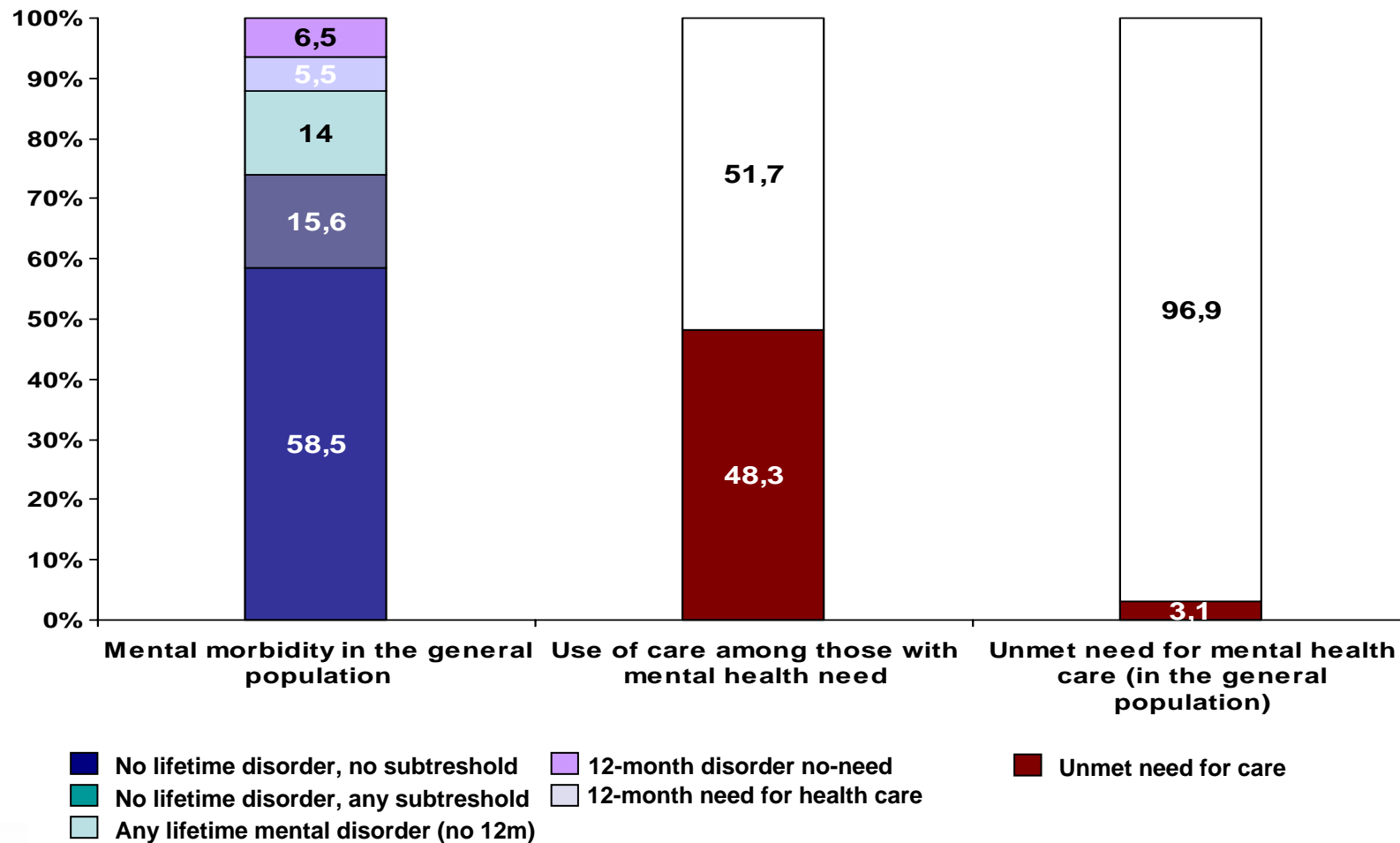
Time trends in adolescents mental health:

- Collishaw S et al (2004): Substantial **increase** conduct & emotional (UK, 1974-99)
- Costello EJ et al (2006): **No higher** prevalence of depression (review, 30 yrs)
- Maughan B et al. (2008): **Stability** or small declines is SDQ (UK; 1999-2004)
- Twenge JM et al (2009): **Large increases** in Pd, Pa Ma and D of MMPI (US hs, college, 1938-2007).

12-month prevalence *mood disorders*. WHO World Mental Health (WMH) Surveys



Need for mental health care: 12-m disorder & high interference. *ESEMeD*



Epi. Contributions: 2. **Determinants**

- Genetic predisposition
- Family influence
- Early experiences
- Lifetime stressors
- Social class, unemployment
- Proximal / Distal risk factors

- Depression: Relative *small* effects
- Suicide: Relative *large* effects (of mental disorders)

Population attributable risk % (PARPs) of suicidality, World Mental Health (WMH) surveys (developed* countries)

Adjusted by age, age-squared, age cohort, sex, person-year and all other mental disorders.

DSM – IV Disorders	Ideation	Attempt
Any mood disorder	62.0	58.6
Any anxiety disorder	29.3	32.6
Any impulse disorder	7.2	6.4
Any substance disorder	13.2	13.5
Any disorder	76.1	75.3
<i>(n)</i>	<i>(27,963)</i>	<i>(27,963)</i>

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Prevention issues for Depression and Suicide

	Depression	Suicide
Screenener	+++	+/-
Diagnostic issues	Severity	Ideation vs Completion
Treatment	++	+
Prevention strategy	<i>General population</i>	<i>High risk individuals</i>

Borges G et al. *Psychol Med* 2006; 36: 1747-57

Table 5. *Distribution of the summary risk index and association with 12-month suicide attempts among ideators (n = 236)*

Risk category ^a	Prevalence among ideators		Probability of suicide attempt	
	%	(S.E.)	%	(S.E.)
Very low	19.0	(2.7)	0.000	—
Low	51.1	(3.3)	0.035	(0.017)
Intermediate	16.2	(1.7)	0.213	(0.073)
High	13.7	(2.6)	0.781	(0.077)

AUC = 0.88

Risk factors: Age 18-44; Non-Hispanic Black; Education >12; Low income; Previously married; Previous history of suicide attempt (0-15 ys); Parental psychopathology (MDD, GAD, Panic, Antisocial D.).

Risk Categories: Very low (no previous, <3); Low (no previous, 3-4); Moderate (no previous & 5-11 or previous 1-2); High (previous & >2).

Genetic studies:

- Biological mediation vs biological causation
- Biological vulnerability (moderate effect)
- Biological sensitivity to environmental conditions

Gene-by-Environment Interaction

Health Services Research:

*“... the **multidisciplinary** field of scientific investigation that studies how **social** factors, **financing** systems, organizational **structures** and **processes**, health **technologies**, and personal **behaviors** affect **access to** health care, the **quality** and **cost** of health care, and ultimately our **health and well-being**. Its research domains are **individuals, families, organizations, institutions, communities, and populations**”.*

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Health Services (Research):

- 1. Effectiveness**
- 2. Efficiency**
- 3. Equity**

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Institute of Medicine 2009.

IOM Comparative Effectiveness Research in Psychiatry:

1. Home/community services vs residential in **children with serious emotional disorders**
2. Atypical vs conventional **antipsychotics**
3. **Traditional training of GPs in MH** vs co-location systems of PC and MH
4. Pharmacologic vs behavioral treatments in **major depression, different settings**
5. Different treatments for **depression after MI**
6. Different treatments in **avoiding early mortality** among serious & persistent mental illness
7. Management strategies for adolescents and adults **following a suicide attempt**

Coronary disease mortality reduction, US 1980-2000

Ford ES et al *NEJM* 2007; 356: 2388-98.

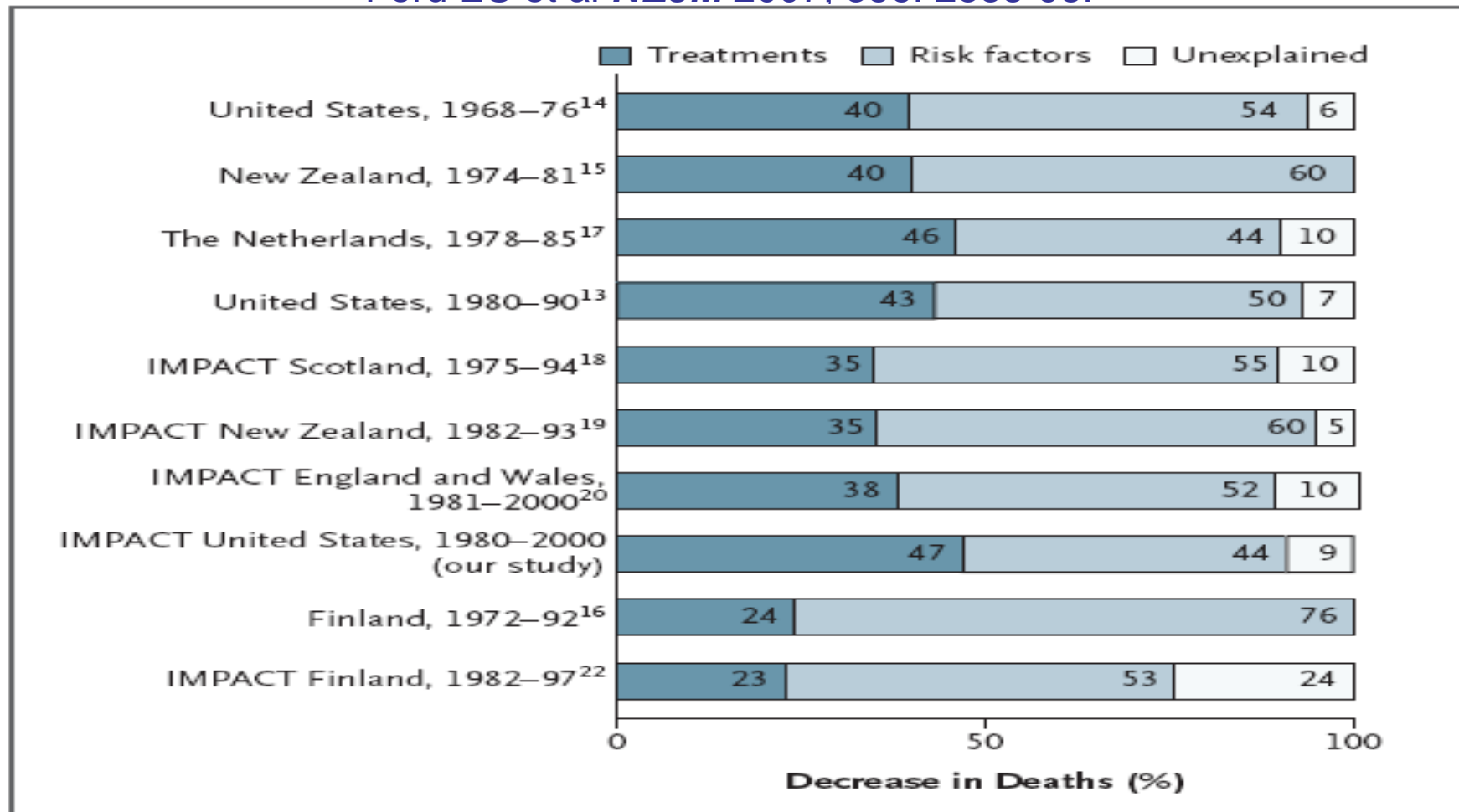


Figure 2. Percentage of the Decrease in Deaths from Coronary Heart Disease Attributed to Treatments and Risk-Factor Changes in Our Study Population and in Other Populations.

In the New Zealand study, 1974 to 1981 (Beaglehole¹⁵), the analysis focused on specific treatments and inferred contribution from risk factors. In the Finland study, 1972 to 1992 (Vartiainen et al.¹⁶), the analysis focused on risk factors and inferred contribution from treatments.

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Implementation Science:

- Translational roadblocks
 - First-in-persons study
 - Efficacy to Effectiveness
 - Guidelines to Practice

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Implementation Science:

1. Adoption in principle
2. Early implementation
3. Persistence of implementation

Some challenges: epi

- **Valid diagnoses** across studies
(categorical vs dimensional;
symptoms/function vs biological markers;
comorbidity)
- **Longitudinal studies** (record linkage)
- Analyses appropriate for **complex causation** (multilevel, complexity, network)
- **Risk Index** for disorder

Some challenges: HSR

- Randomized and Natural **experiments** and Quasi-experimental designs
- Operational definition of **Need for Mental Healthcare**
- **Comparative cost-effectiveness** of prevention strategies
- **Universal** outcome measures

Thank you!

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