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Organisation of data analyses and measuring of comorbidity/multimorbidity

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Background

The comorbidity between mental and somatic disorders is an important field in everyday medical practice, becoming widely recognised also in psychiatry.

A growing interest among practitioners and researchers occurred in the **impact of comorbidity on a range of outcomes**, such as mortality, health-related quality of life, patient's functioning, and health care utilization.

****Several authors reported that **clinicians fail to recognize comorbid medical illnesses** in nearly one-half of all cases.*

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Definition of comorbidity

Approaches to study the impact of comorbidity become challenging also due to the **lack of consensus about how to define and measure** the comorbidity.

Comorbidity can be defined in several different ways, and there still had not been agreed upon.

Consequently, clinicians, researchers and managers are using **different comorbidity concepts when faced with co-occurring** chronic diseases, disorders, health conditions, illnesses or health problems.

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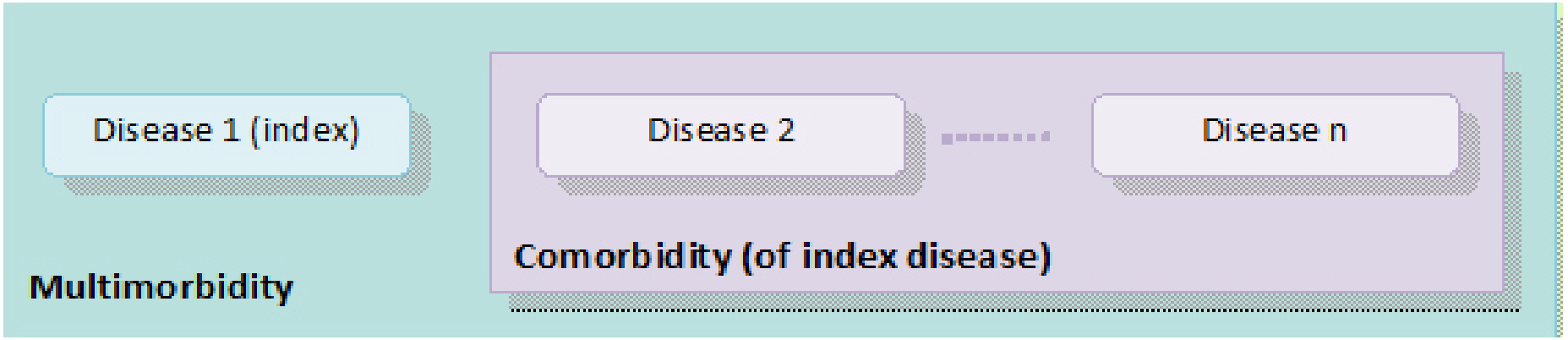
In overall, the term comorbidity has three meanings:

a) Indicating a medical condition in a patient that causes, is caused by, or is otherwise **related to another condition** in the same patient (comorbidity);

b) Indicating a medical condition in a patient **existing simultaneously but independently** with another condition (multimorbidity);

c) Indicating two or more medical conditions in a patient that exist simultaneously, **regardless of their causal relationship** (multimorbidity).



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How frequent is co-occurrence of mental and medical conditions in psychiatric patients?

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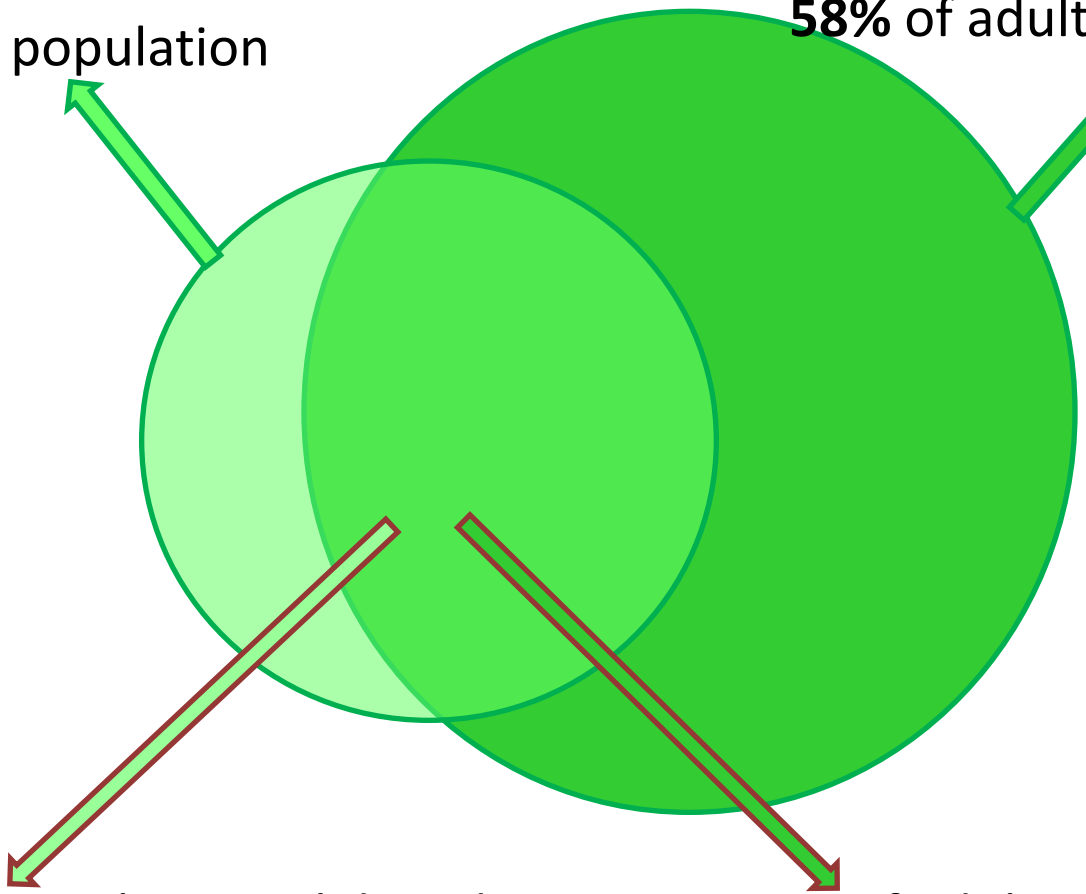
Comorbidity between mental and medical conditions is the rule rather than the exception

People with **mental disorders**
25% of adult population

People with **medical conditions**
58% of adult population



68% of adults with mental disorders have medical conditions

29% of adults with medical conditions have mental disorders

Adapted from the National Comorbidity Survey Replication, 2001–2003

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Background

People with enduring mental health problems are more likely to develop physical health problems than the general population

- Have two to threefold **increased risk of death** compared to persons of the same age and gender in the general population
- **Die** on average 20 years **younger** than the general population, with **cardiovascular disease** being the leading cause
- Are more likely to develop a range of **chronic respiratory conditions** (chronic obstructive pulmonary disease, chronic bronchitis, asthma)
- Have a **higher risk** of developing some cancers, heart disease, diabetes

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The challenge of project

Readmission rates in psychiatric patients are high and we still lack understanding potential predictors of recidivism.

Physical comorbidity could be one of important risk factors for psychiatric readmission.

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Physical comorbidity / psychiatric readmissions

1) Literature review:

- Review the **impact of physical comorbidity variables on readmission** after discharge from psychiatric or general hospitals in patients with co-occurring psychiatric and medical conditions.

2) Study by using patient records from national or regional large existing electronic administrative registries containing personalized routinely collected health service utilization data – CEPHOS Study Cohort

- Examine **psychiatric readmissions and their association** with physical comorbidity.

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Literature review

734 unique articles identified in the initial search on psychiatric readmission

Included into integrative review

Main psychiatric discharge diagnoses + physical comorbidity (n=23)

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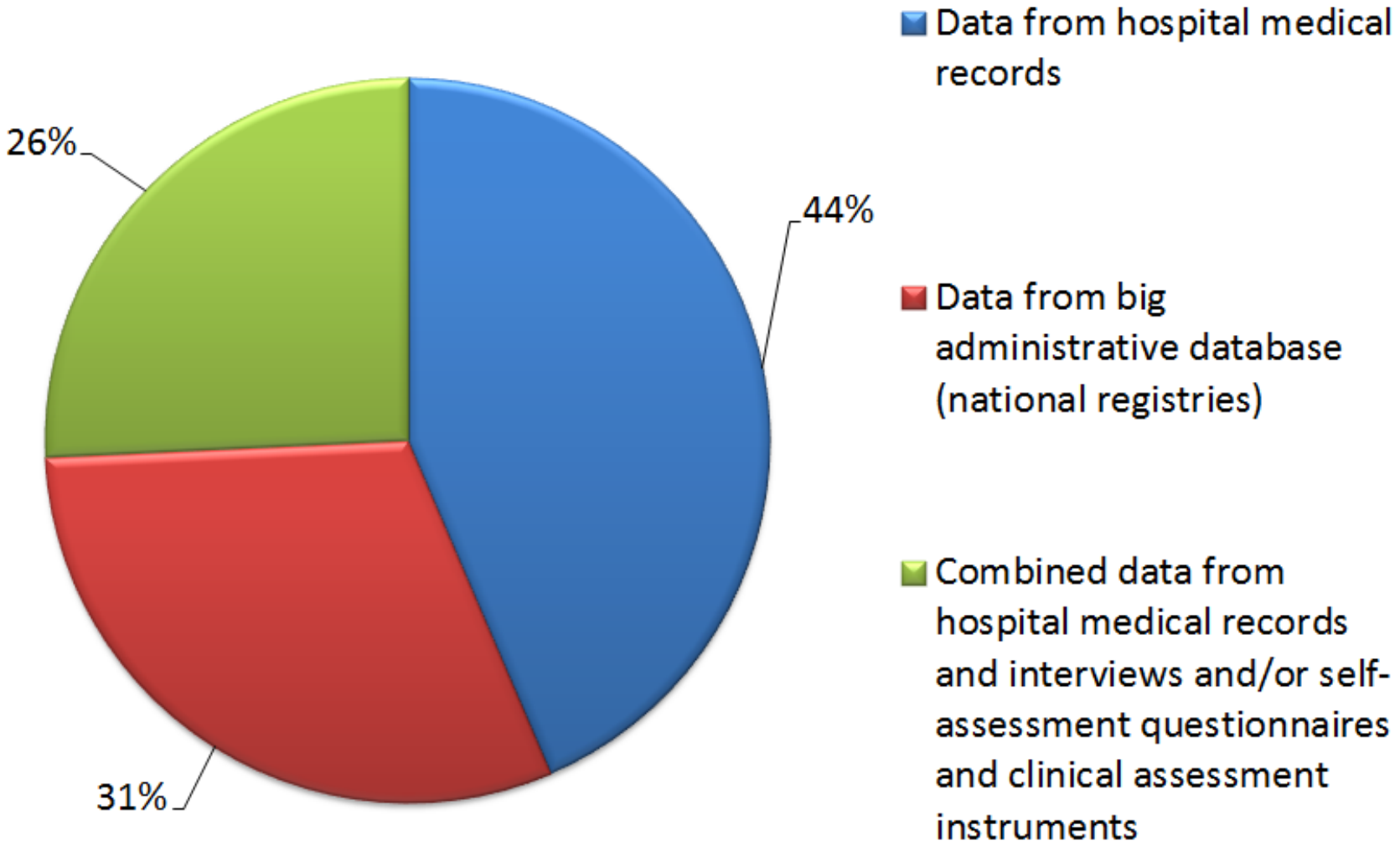
Source of data



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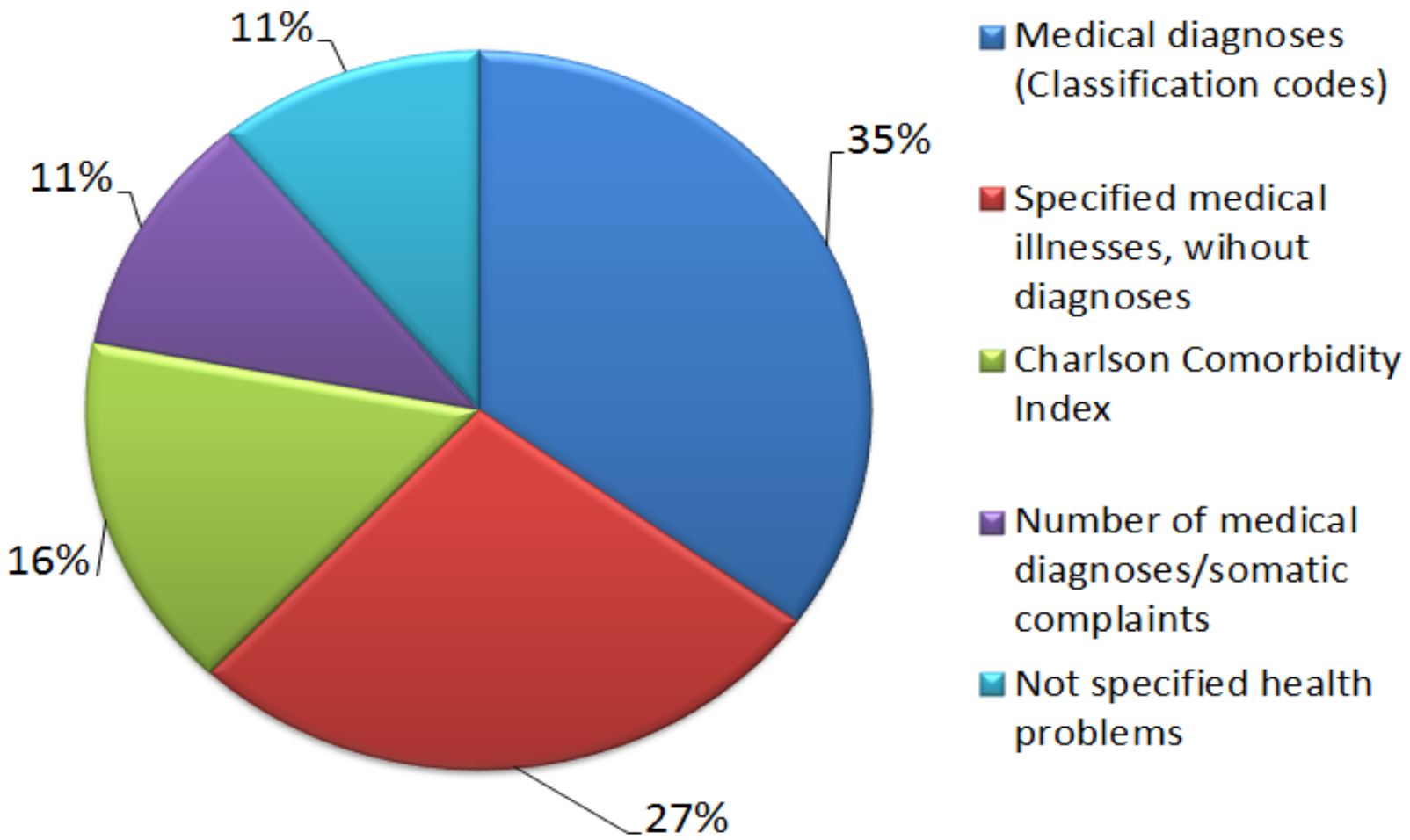
Comorbid physical variables



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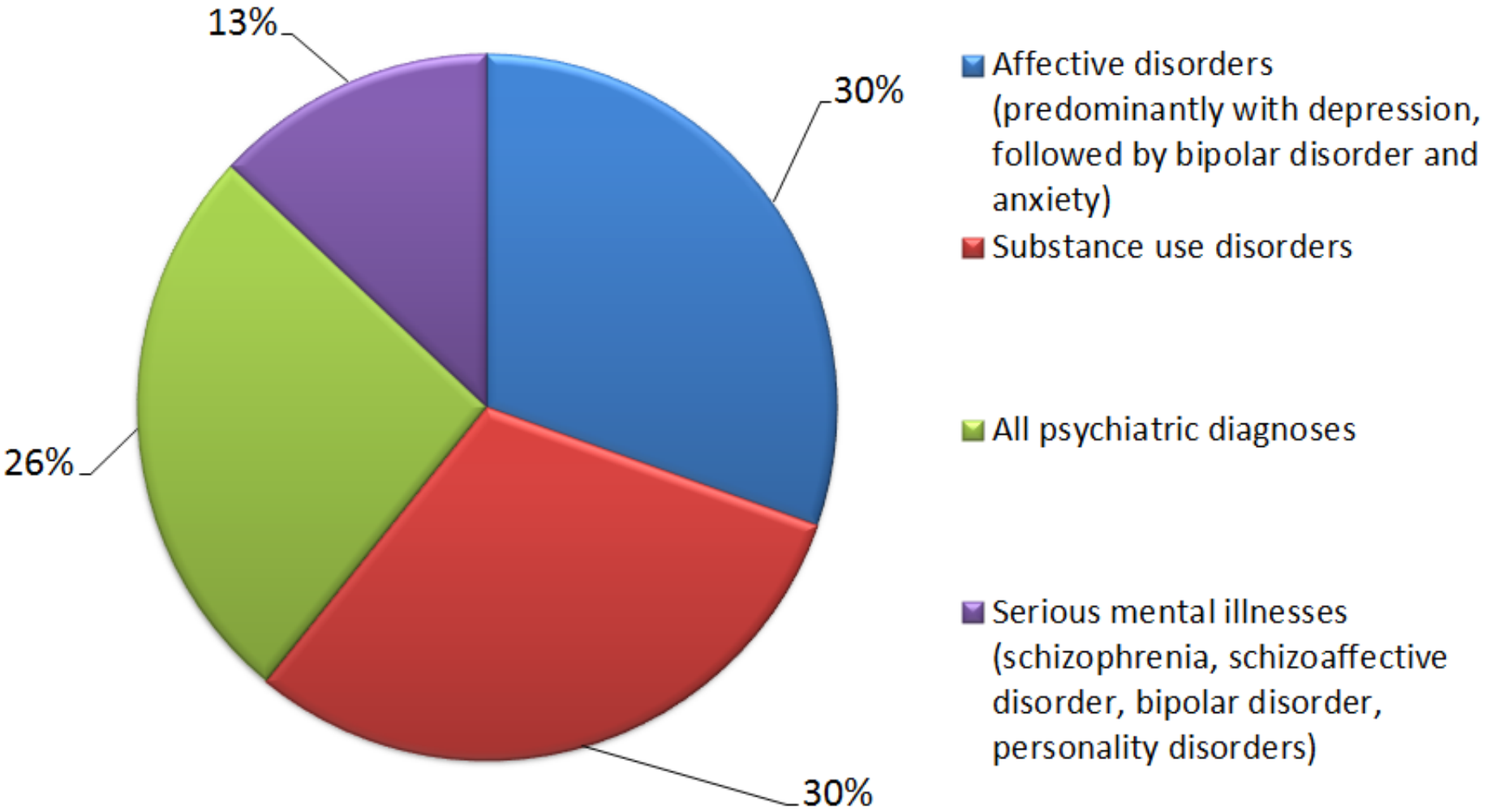
Study population



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Main outcomes

General observations:

Physical comorbidity was not analysed in all studies from the perspective of psychiatric readmission but **recorded only at discharge (N=6)**.

Physical comorbidity was considered frequently as a **confounding variable**!

Different concepts of comorbidity were used (4% - comorbidity; 48% - multimorbidity).

Co-occurring physical and mental disorders can **worsen patient's course of illness** leading to hospital **readmission due to non-psychiatric reasons.**

Follow-up period varied from 1 month to more than 10 years;
most frequently reported 12 months.

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Main outcomes

Irrespective of **diverse study protocols** in reviewed studies **some common trends** in comorbid psychiatric and medical conditions were observed:

- Patients with mental disorders **had more physical comorbidities**
- The main body of studies **supported the hypothesis** that patients with mental disorders are at **increased risk of readmission** if they had co-occurring medical condition (**52%** of included studies)
- Physical comorbid conditions were **more common among readmitted** patients than single admission patients

Comorbidity with medical condition may also reduce the readmission risk of psychiatric patients (the protective effect of physical comorbidity?)

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Results

Some medical conditions may increase the probability of psychiatric readmission

- **All psychiatric diagnosis**: cellulitis, chronic obstructive pulmonary disease, liver disease, diabetes, hypertension, circulatory heart conditions, epilepsy, hypothyroidism
- **Substance use disorders diagnosis**: chronic lung conditions, hepatitis C virus infection, hypertension
- **Serious mental illness diagnosis**: higher Charlson Comorbidity Index, physical health problems
- **Affective disorders diagnosis**: somatic complaints, more medical diagnosis

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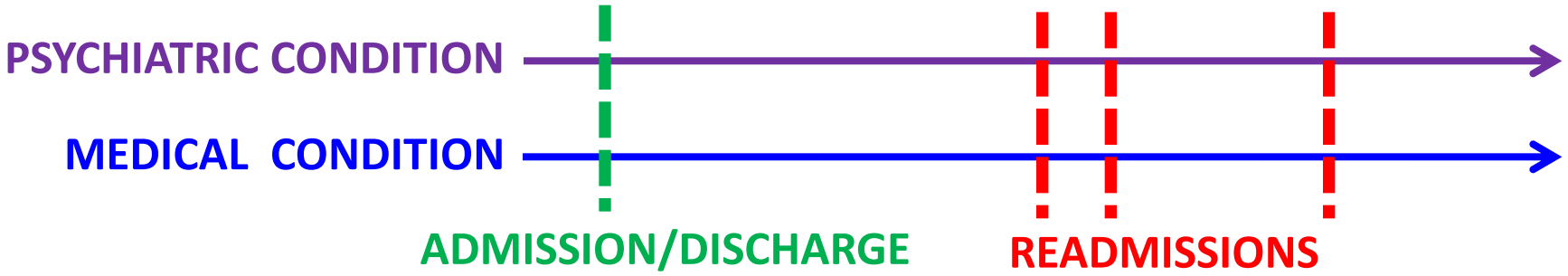
CEPHOS Study Cohort

The study on physical comorbidity is based on the concept of **multimorbidity** including **the type of ICD-10 somatic diagnoses** (Chapters A-Y) and **frequency of somatic diagnoses** in patients discharged with a main diagnosis of a functional mental disorder (any of the ICD-10 diagnoses F2-F6).



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- Data obtained from patient records from national or regional large existing electronic administrative registries
- Follow-up period: 12 months
- Adult population (18+)

The study is still in progress, so far only some preliminary data are available.

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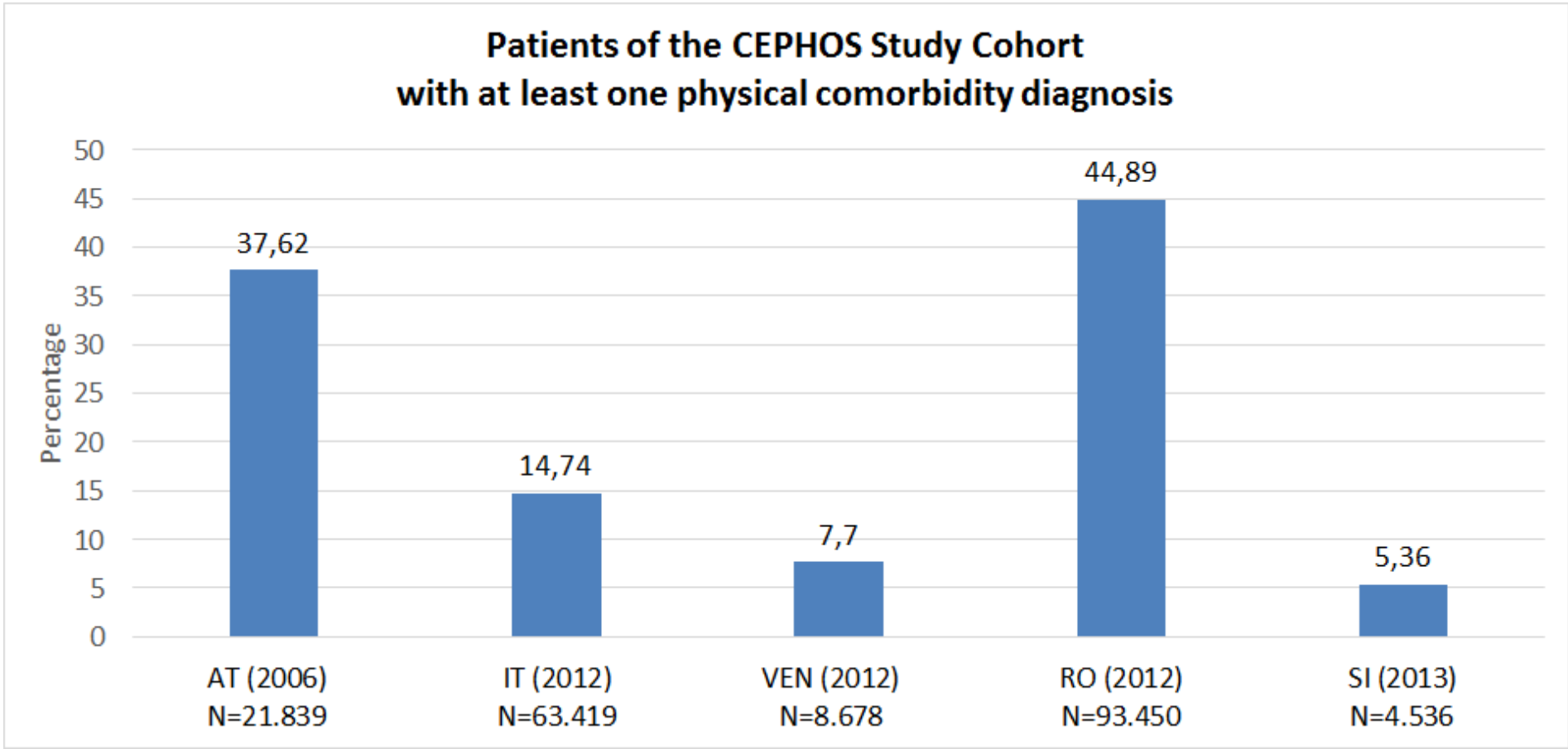
Availability of data

Substantial **differences in the practice of coding additional diagnoses** between CEPHOS-LINK partner countries



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Two ICD-10 diagnostic groups dominate the spectrum of comorbid diagnoses

ICD-10	Title - chapter	% of the cohort (chapter)				
		SLO	*ITA*	*Veneto (ITA*	*AUT*	*RO*
A00–B99	Certain infectious and parasitic diseases	0,11	0,79	0,25	2,24	3,58
C00–D48	Neoplasms	0,18	0,44	0,27	1,86	2,07
D50–D89	Diseases of the blood and blood-forming	0,33	0,66	0,22	1,37	3,21
E00–E90	Endocrine, nutritional and metabolic dise	2,47	6,00	3,08	17,68	33,59
G00–G99	Diseases of the nervous system	0,55	1,61	0,78	6,80	8,18
H00–H59	Diseases of the eye and adnexa	0,18	0,20	0,12	2,66	2,08
H60–H95	Diseases of the ear and mastoid process	0,13	0,13	0,13	2,25	2,57
I00–I99	Diseases of the circulatory system	2,03	5,06	2,67	17,83	46,22
J00–J99	Diseases of the respiratory system	0,29	1,05	0,45	4,42	6,74
K00–K93	Diseases of the digestive system	0,57	1,23	0,47	6,40	19,55
L00–L99	Diseases of the skin and subcutaneous	0,18	0,43	0,16	2,98	1,18
M00–M99	Diseases of the musculoskeletal system	0,64	0,59	0,22	7,34	15,13
N00–N99	Diseases of the genitourinary system	0,55	1,03	0,38	5,08	7,89
O00–O99	Pregnancy, childbirth and the puerperiur	0,02	0,05	0,01	0,09	0,21
S00–T98	Injury, poisoning and certain other conse	0,26	1,94	0,93	2,69	1,77
V01–Y98	External causes of morbidity and mortalit	0,07	0,00	0,00	0,00	1,87

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CONCLUSIONS

It is difficult to draw a solid conclusion about actual impact of physical comorbidity on readmission in psychiatric population

The association between physical comorbidity and psychiatric readmission is still **poorly understood phenomenon** (Lit. Review).

The pathways leading to comorbidity of mental and physical disorders are **complex and often bidirectional** *(Which come first?)*.

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CONCLUSIONS

More high quality research is needed in the future to understand the associations between physical comorbidities and psychiatric readmissions!m

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Thank you for your attention!