Journal of Psychosomatic Research 114 (2018) 72–80

Contents lists available at ScienceDirect

Journal of Psychosomatic Research

journal homepage: www.elsevier.com/locate/jpsychores

Patterns of chronic physical multimorbidity in psychiatric and general population

Igor Filipčić[a,b,c,*,1], Ivona Šimunović Filipčić[d,1], Vladimir Grošić[a], Ivana Bakija[a], Daniela Šago[a], Tomislav Benjak[e], Boran Uglešić[f], Žarko Bajić[a], Norman Sartorius[g]

[a] Psychiatric Hospital "Sveti Ivan", Zagreb, Croatia
[b] Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia
[c] School of Medicine, University of Zagreb, Zagreb, Croatia
[d] Department of psychological medicine, University Hospital Center Zagreb, Zagreb, Croatia
[e] Croatian Institute of Public Health, Zagreb, Croatia
[f] Department of Psychiatry, University Hospital Center Split, Split, Croatia
[g] Association for the Improvement of Mental Health Programmes, Geneva, Switzerland

ARTICLE INFO

Keywords:
Chronic medical condition
Physical illness
Comorbidity
Physical health
Mental disorders

ABSTRACT

Objective: A growing body of evidence has demonstrated the high prevalence and complexity of chronic physical multimorbidity defined as ≥2 chronic physical illness in people with psychiatric disorders. The present study aimed to assess differences in the prevalence and patterns of self-reported chronic physical illness and multimorbidity in the general and psychiatric populations.

Methods: We performed a latent class analysis of 15 self-reported chronic physical illnesses on a sample of 1060 psychiatric patients and 837 participants from the general population.

Results: Self-reported chronic physical illness and multimorbidity were significantly more prevalent in the population of psychiatric patients than in the general population ($P < .001$). Psychiatric patients had 27% ($CI_{95\%}$ 24% - 30%) higher age-standardized relative risk for chronic physical illness and a 31% ($CI_{95\%}$ 28% - 34%) higher for multimorbidity ($P < .001$). The number of chronic physical illnesses combinations was 52% higher in the psychiatric than in general population (255 vs 161 combinations respectively; $P < .001$). We identified four distinct latent classes: "Relatively healthy", "Musculoskeletal", "Hypertension and obesity", and "Complex multimorbidity" with no significant differences in the nature of multimorbidity latent classes patterns. The class "Relatively healthy" was significantly less (ARI = −25% ($CI_{95\%}$ -30% -21%), and the class "Hypertension and obesity" was significantly more prevalent in the population of psychiatric patients (ARI = 20% ($CI_{95\%}$ 17% - 23%).

Conclusions: These findings indicate that mental disorders are associated with an increased risk of a wide range of chronic physical illnesses and multimorbidity. There is an urgent need for the development of the guidelines regarding the physical healthcare of all individuals with mental disorders with multimorbidity in focus.

1. Introduction

People with mental disorders experience a high burden of mortality at the individual and population levels. The link between mental disorders and mortality is complicated because most people with mental disorders do not die of their condition; rather, they die of common chronic physical illnesses (CPI) as general population [1]. The treatment of people with multimorbidity (the co-occurrence of two or more CPI) has become one of the most significant challenges faced by global healthcare. A growing body of evidence has demonstrated the high prevalence of multimorbidity in people with psychiatric disorders and the complexity of this phenomena [2–9]. In general, people with psychiatric disorders are at significantly increased risk of developing CPI due to both maladaptive health risk behaviors and the physiological effects of their psychiatric illnesses and treatment [2,10]. In recent years, a compelling body of evidence has emerged to suggest that the relationship between psychiatric disorders and CPI is bidirectional at the pathophysiological and clinical levels and that the mechanisms

* Corresponding author at: Psychiatric hospital "Sveti Ivan", Jankomir 11, pp 68, HR-10 090 Zagreb, Croatia.
E-mail address: igor.filipcic@pbsvi.hr (I. Filipčić).
[1] Igor Filipčić and Ivona Šimunović Filipčić have equally contributed to the paper (shared first authorship).

https://doi.org/10.1016/j.jpsychores.2018.09.011
Received 27 March 2018; Received in revised form 24 September 2018; Accepted 24 September 2018

responsible for it are complex and multifaceted [11]. There are several mechanisms that have been proposed to clarify the relationship between psychiatric disorder and CPI (e.g., genetic, inflammation and oxidative stress, immunological and metabolic mechanisms) [12–15].

Additionally, the major modifiable risk factors for CPI (lower physical activity, obesity, smoking, alcohol consumption and an unhealthy diet) are exacerbated by poor mental health. It appears that mental illness is a risk factor for CPI alone and that its presence increases the risk that an individual will also suffer from one or more CPI [16,17]. In addition, individuals with mental health conditions are less likely to seek help for CPI, and the symptoms may affect adherence to treatment as well as the prognosis [18]. Moreover, several studies indicated that CPI affects psychiatric treatment outcomes [19–23]. Not only have we failed to recognize the possible importance of the treatment of CPI for psychiatric disorder treatment effects, but it is quite likely that physical healthcare in psychiatric patients is of lower quality in general [2,24–27]. This low quality may partially be caused by the fact that the majority of clinical evidence and guidelines are developed for individual diseases and that there is a lack of an integrative approach in clinical practice because of the configuration of healthcare systems, which focuses on individual diseases rather than multimorbidity [28–31]. Furthermore, the majority of research on the association of physical and psychiatric disorders focuses on single conditions [7]. When multimorbidity was in focus, it has most often been addressed by counting the number of medical conditions [32], examining pairs of diseases [33] or weighting the number of diseases with their seriousness, severity or expected consequences of different outcomes, such as the Charlson Comorbidity Index or the van Walraven et al. modification of Elixhauser's system [34–36]. Austin et al. theoretically justified the usage of such summary measures and concluded that data on particular comorbidities do not add any substantially important information for the validity of the baseline adjustment in the research or clinical prognosis and the prediction of health outcomes [37]. However, such indices, the univariate analysis of particular comorbidities, and the practically impossible analysis of all disease combinations conceals the ways in which multiple diseases interact [38] and reinforces the clinical focus on the main diagnosis. A promising alternative is the analysis of comorbidity phenotypes or clusters, or in Larsen et al.'s words, “partitioning of the population into a limited number of subgroups with distinct disease patterns” [38–40]. However, to the best of our knowledge, there are no representative comparative studies that investigate the differences in the prevalence of self-reported CPI, multimorbidity latent classes prevalence and patterns in the general and psychiatric population. Our objective was to identify whether there are differences in the prevalence of self-reported CPI and the prevalence and patterns of multimorbidity latent classes in the general population and the population of psychiatric patients. Our first hypothesis was that the prevalence of all self-reported CPI and multimorbidity are higher in the psychiatric compared to the general population. Our second hypothesis was that multimorbidity latent classes differs between these two populations.

2. Methods

2.1. Study design

This analysis compares the results from two cross-sectional studies. The first one was nested within the prospective cohort study “Somatic Comorbidities in psychiatric patients” at the Psychiatric Hospital Sveti Ivan, Zagreb, Croatia in 2016. The study protocol was registered at ClinicalTrials.gov (NCT02773108) and was approved by the Ethics Committee of the Psychiatric Hospital Sveti Ivan. All patients provided written informed consents for participation. All participants from the general population signed a consent to be interviewed. The study was conducted in accordance with the World Medical Association Declaration of Helsinki 2013. [41] The second study was a European health interview survey (EHIS) conducted for the first time in the Republic of Croatia between 2013 and 2015.

2.2. Study population

Our first targeted population was patients diagnosed with any psychiatric disorder who were treated in a psychiatric hospital as inpatients or outpatients and have permanent residency in the city of Zagreb or Zagreb County. Our second targeted population was the general population of Croatian citizens living in private households in the city of Zagreb and Zagreb County. The inclusion criterion for both populations was being ≥ 18 years of age. The exclusion criteria for the sample from the psychiatric population were dementia, mental retardation, acute psychosis, and intoxication.

2.3. Sample types

We chose a consecutive sample of outpatients by the order of their arrival at the exam and all patients who were hospitalized during the enrollment period. In other words, we consecutively included all patients, that is the entire available population of patients who satisfied the inclusion and exclusion criteria and who present at the hospital during the enrollment either because of being hospitalized or because they came for an outpatients' exam. The EHIS study was conducted with a two-stage, stratified random sample. Sample frame was based on the Croatian Census 2011. The sample was designed by the Croatian Bureau of Statistics. The primary sampling unit was the household. Within each household all present household members were interviewed. As > 600 households was chosen, the design effect on the effective sample size was negligible although > 1.0. Overall response rate in EHIS study was 83%. The sociodemographic structure of non-responders was not available to us. The response rate in the study on psychiatric patients was 94%.

2.4. Necessary sample size

Power analyses were performed before the start of the enrollment for the main prospective cohort study and for the EHIS study. It was not calculated specifically for this analysis.

2.5. Outcomes

Our primary outcome was the number of self-reported CPI as they were operationalized in the EHIS questionnaire. CPI were defined as chronic by the introduction to this EHIS questionnaire section that states: “Here is the list of chronic illnesses or conditions”, by the show-card with the instruction for the respondent written on it: “Mark with “yes” or “no” for every chronic illness”, and by the names of CPI that contain the word: “chronic” when there may be some ambiguity: “chronic bronchitis”, “chronic consequences of myocardial infarction”, “chronic consequences of stroke”, “low back disorder or other chronic back defect”, “neck disorder or other chronic neck defect”. Our secondary outcome was the prevalence of 15 CPI (Table 2) [42]. These 15 CPI were used in EHIS questionnaire and we used the same instrument in the study on psychiatric patients populations to enable the comparability. Our tertiary outcome were multimorbidity latent classes. Multimorbidity was defined as co-occurrence of ≥ 2 CPI. The data on outcomes were collected by face-to-face interview using a checklist on the show-card presented to the participants as planned by the Manual for the 2nd wave European Health Interview Survey (EHIS) [42].

2.6. Independent variable

The independent variable was any treatment in the psychiatric hospital for any psychiatric diagnosis or condition.