

Prevalence of Panic Disorders in the Primary Health Care Setting: A Systematic Review and Meta-Analysis

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Abstract

Panic disorder (PD) is a serious condition that may affect the quality of life and even increase the mortality risk. PD is more common in the primary health care setting compared to the general population. For that, an extensive literature search in 11 databases; has been conducted. Three independent reviewers scanned studies against our inclusion and exclusion criteria to select potential articles. Finally, seven studies with 6651 patients were included in this study. The pooled prevalence was 5% with 95% CI = 3.12% to 8.00%. The prevalence rates of PD ranged from 10.31% down to only 1.20%. Nevertheless, significant heterogeneity is present among the results. There is a significant burden of PD patients presenting at the primary care setting. There is an urgent need to not only assess the prevalence, but also risk factors, burden, treatment gaps and outcomes to obtain evidence for policymaking.

Keywords: Panic Disorder; Prevalence; Primary Health Care

Introduction

Panic disorder (PD) is a severe and prevalent anxiety disorder characterized by spontaneous and recurrent panic attacks [1]. These attacks are experienced as highly distressing, and they are frequently accompanied by beliefs and fears of dying, going mad, fainting, or acting uncontrollably [2]. The physiological symptoms experienced during the attacks are pronounced, and include palpitations, difficulty breathing, feeling suffocated, numbness, tingling sensations, chest pain, sweating, feeling hot and/or cold and a feeling of separation from

reality [3]. The marked bodily symptoms are often interpreted as indications of somatic illness, such as a heart attack or suffocation, and many patients seek help at emergency units or are referred for cardiac evaluation during the initial attacks [4,5].

Furthermore, PD frequently co-occurs with agoraphobia, where patients develop a fear of places and situations in which they feel trapped or cannot easily escape if a panic attack should occur, or where they expect an attack to occur [6]. This co-morbidity can severely disrupt activities of daily life and social functioning [7]. Estimates of lifetime prevalence rates for PD in the general population range from 3.5 - 4.7% [8-10], whereas PD with agoraphobia is reported to have a lifetime prevalence of 1.1 - 1.5% [10,11]. However, prevalence rates for PD are suggested to be substantially higher within clinical populations, such as individuals referred for mental health consultations and heart disease polyclinics, where PD has been estimated to be present in as many as 10% and 60% of patients, respectively [7].

PD is not only a severe and distressing disorder in itself. It is also the most frequent co-morbid disorder with depression [12], a combination associated with poorer treatment outcome, more severe functional impairment, more suicide attempts, and greater severity [12]. Even the presence of panic attacks is a risk factor for the development of mental disorders of any kind and is also associated with greater impairment and help-seeking [11,13]. PD is further characterized by reduced heart rate variability (HRV) [14-18]. This is significant, as decreased HRV has been linked to increased risk of all-cause mortality [19]. This study gives an overview of PD prevalence in the primary health care setting.

Methods

Search strategy and study selection

We performed an extensive literature search in 11 databases including Popline, WHO health library (GHL), System for Information on Grey Literature in Europe (SIGLE), Scopus, Web of Science (ISI), PubMed, Virtual Health Library (VHL), The New York Academy of Medicine (NYAM), Medline, Cochrane, and EMBASE databases on 25 November 2019. Whenever supported, medical subject headings (MeSH) terms “panic disorder [MeSH Terms]” AND “primary health care [MeSH Terms]”. In databases where Mesh terms were not supported, combinations of different possible synonyms have been used. An additional manual search of references across relevant studies has been performed.

Three independent reviewers scanned the titles and abstracts against our inclusion and exclusion criteria to select potential articles. We included all relevant original publications assessing the prevalence of panic disorders in the primary health care setting. There were no restrictions on study design, country, year or language. Papers were excluded if any of the following exclusion criteria were met: i) *in vitro* or animal studies; ii) data duplication, overlapping or unreliably extracted or incomplete data; iii) abstract only articles, reviews, thesis, books, conference papers or articles without available full texts (editorials, author response, letters, and comments) along with any previous systematic reviews, meta-analyses and literature reviews on our topic of interest. Full texts of initially eligible articles were then retrieved and reviewed for final inclusion. In both steps of the screening, a decision made by all three reviewers was considered conclusive. Controversies during the process were resolved by discussion and consensus. When necessary, disagreements and discrepancies were resolved by consensus with senior reviewers.

Data extraction

Based on a pilot review and extraction, a data extraction form was developed by two authors, using Microsoft Excel file. Three reviewers independently extracted data from included studies using the excel sheet. The prevalence was defined as the lifetime prevalence of PD rather than only the current one. Data rechecking was carried out by at least two different authors and re-checked by a third reviewer for accuracy. All the disagreements and discrepancies were resolved by discussion and consensus. Papers published by the same research group were checked for potential duplicate data with reference to the year of patients' recruitment and the hospital where the patients were recruited.

Quality assessment

Three independent reviewers evaluated the risk of bias in included studies. Methodological quality assessment was done using the risk of bias in non-randomized studies of interventions (ROBINS-I) tool [20]. The “robvis” package has been used for visualization of the results of risk-of-bias (ROB) assessments [21].

Statistical analysis

R software version 3.6.1 was used to conduct the analyses [22]. To calculate the prevalence of PD, a random-effects model was chosen due to the presence of heterogeneity between studies. Heterogeneity was evaluated using the Q statistic and I² test [23,24] and the Baujat plot has been used to identify studies that contributed considerably to the overall heterogeneity and had a strong influence on the overall result [25]. Publication bias testing, using Egger’s regression test, was not performed because of the small number of studies per analysis (less than 10) [26,27].

Results

Search results

Database search yielded 1,104 reports and no additional reports were found with the manual search of references. Following the removal of 102 duplicates via Endnote software, the total number passed to the title and abstract screening was 1,002; of which, 58 were relevant to our inclusion criteria. Following the extensive full-text screening, only seven studies were included in the meta-analysis (Figure 1).

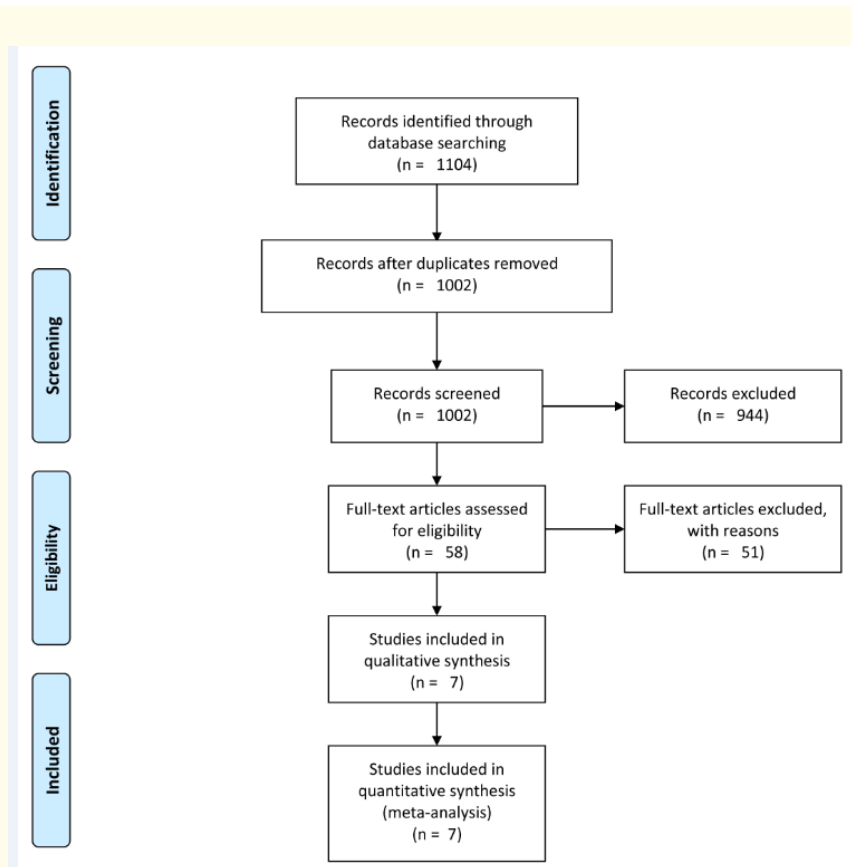


Figure 1

Quality assessment and characteristics of included studies

Seven studies were included in this study with variable overall sample sizes ranging between 78 to 2,316. The total number of patients with panic disorders was 398. Moreover, the prevalence rate of PD ranged from 1.2% up to 10.30%. The age of the included patients was variable; ranging from 14 to > 80 years old and male percentage ranged from 21% to 46% (Table 1).

Study	Case Group				Overall Risk of Bias
	Panic Disorders Prevalence	Total Populations	Age; Mean (SD)/Range	Male (%)	
Bener 2015 [28]	10.30%	1475	18 to > 65	44%	Moderate
Pires 2014 [29]	8.10%	1081	14 to > 60	28%	Moderate
Cwikel 2008 [30]	7.40%	976	25 to 75	35%	Moderate
Ansseau 2004 [31]	2.80%	2316	< 20 to > 80	41%	High
Rucci 2003 [32]	1.40%	559	NA	NA	Moderate
Davidson 1998 [33]	8.40%	78	50.3 (16.2)	21%	High
Kessler 1985 [34]	1.20%	166	40.5 (NA)	46%	High

Table 1: Characteristics of the included studies.
SD: Standard Deviation.

The risk of bias was variable among different included studies. The weighted summary plot of different biases among all studies is represented in figure 2.

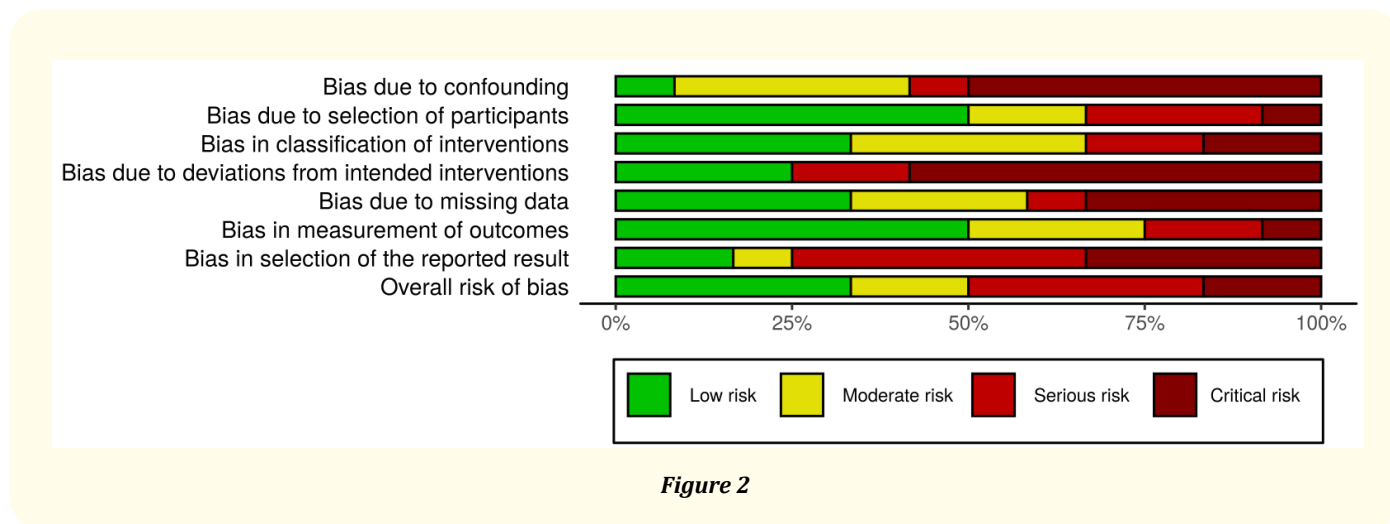


Figure 2

Prevalence of PD in the primary health care setting

Seven studies with 6651 patients were included in the meta-analysis. The pooled prevalence was 5% with 95% CI = 3.12% to 8.00%. The prevalence rates of PD ranged from 10.31% down to only 1.20%. However, there was significant heterogeneity in the reported results with $I^2 = 95\%$ and $P\text{-value} < 0.001$ (Figure 3).

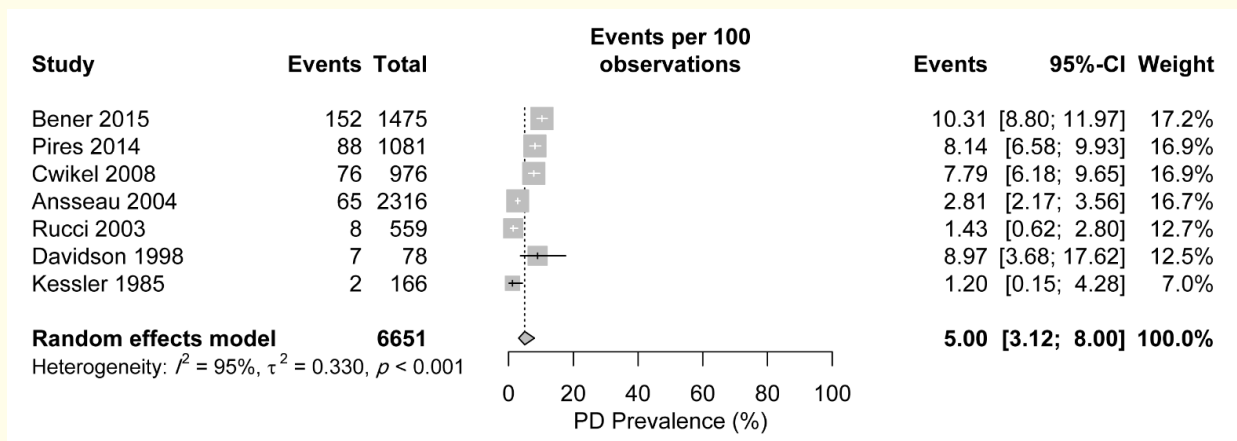


Figure 3

Baujat plot for heterogeneity has shown that Ansseau, *et al.* [31], Bener, *et al.* [28] and Rucci, *et al.* [32] have the highest contribution to heterogeneity (Figure 4). Moreover, a cumulative analysis showing the effect of adding each study on the overall results are showed in figure 5.

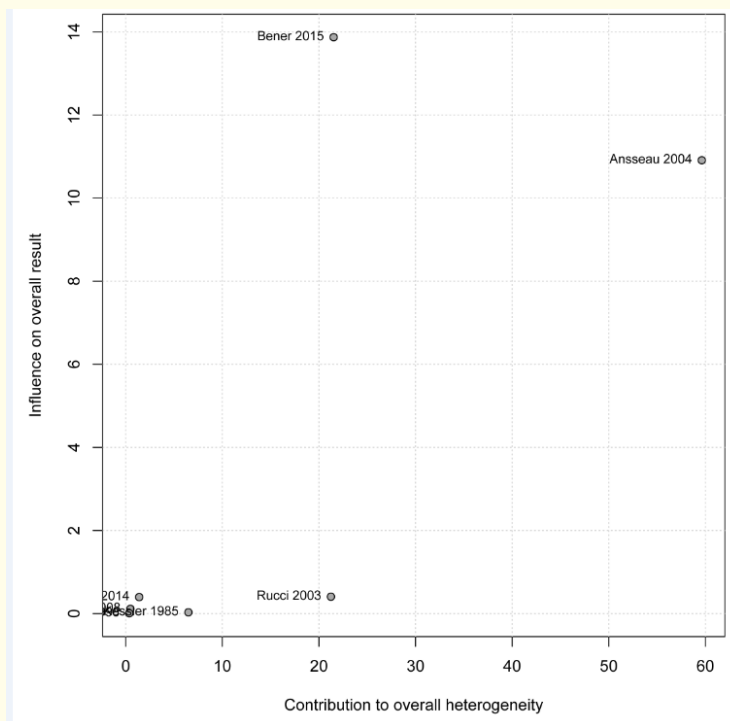


Figure 4

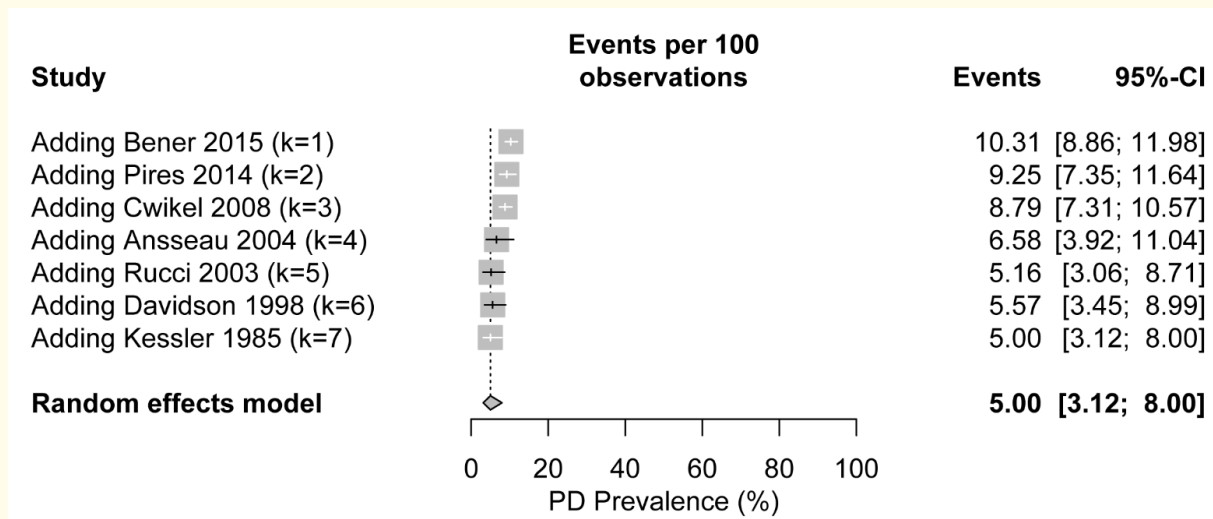


Figure 5

Discussion

We have performed a meta-analysis of seven studies assessing the prevalence of PD among the primary health care setting patients. The pooled overall prevalence was 5% and ranged between 1.20% and 10.31%, which is consistent with the previous studies in the literature [28-34]. In the United States (US); the one-year prevalence of PD was 2.7% and the lifetime prevalence is 4.7%, among patients aged 15 to 54 years [35]. In multiple European countries, the one-year prevalence was 1.8% [36]. The prevalence of PD among patients at the primary health care setting is double the prevalence of the general population, with a range of 4% to 8% [37-39]. Noteworthy, panic attacks occur much more frequently than PD with about one-third of the general population having one at some point in their lives [11,40,41].

The median age of PD onset is 24 years [35]. Moreover, PD is more common in females compared to males with a lifetime prevalence of 5% among females compared to only 2% in males [10]. The prevalence starts declining significantly following the age of 60 years [35]. Many risk factors can predispose individuals to PD; including genetic factors, neuroticism, childhood adversity, specific personality traits, and anxiety sensitivity [42-44]. In the same context, many medical conditions have been associated with an increased risk of PD. These medical conditions; include asthma [45], interstitial cystitis [46], hypertension [47], coronary artery disease [48], and physician-diagnosed ulcer [49]. In a large cohort study of 43,000 individuals and a duration of 3.9 years; sleep apnea found to have a significant association with PD diagnosis [50].

The current study has some limitations. There is a small number of studies reporting the prevalence of panic disorders separately, while many papers have reported it either in the general population or all psychiatric disorders collectively. Moreover, there was significant heterogeneity in the results mainly due to the higher prevalence reported in some studies. Nevertheless, the pooled prevalence is still consistent with previous literature and the reported range of PD in the primary health care setting.

Conclusion

There is a high prevalence of PD among patients presenting at the primary care setting. There is an urgent need to not only assess the prevalence, but also risk factors, burden, treatment gaps and outcomes to obtain evidence for policymaking.

Funding

None.

Conflicts of Interest

No conflicts related to this work.

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