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Review

Hospitalization Costs and Mental Health: Challenges and Solutions from Recent Research - A Narrative Review

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Abstract: Mental disorders impact a significant portion of the global population, presenting substantial challenges to healthcare systems due to high hospitalization costs and resource demands. This narrative review explores the economic implications of mental health disorders, focusing on hospitalization costs, the effectiveness of interventions, and the outcomes of recent research. Materials and Methods: A narrative review was conducted, sourcing articles from PubMed and Google Scholar published between 2014 and 2024. The search terms included combinations related to mental illness, costs, hospital care, and mental healthcare interventions. A total of 1,110 articles were initially identified, with 37 studies meeting the inclusion criteria after rigorous screening by two independent researchers. These studies included quantitative and qualitative data covering a range of outcomes such as hospital admission rates, consumer satisfaction, and quality of life. The findings of the present review reveal that mental disorders significantly increase hospitalization costs due to frequent admissions, extended stays, and the need for specialized treatments. Additionally, physical comorbidities in individuals with mental disorders lead to higher healthcare costs and resource use. Integrated care models, early intervention, and preventive strategies show promise in reducing these costs and improving patient outcomes. Conclusions: Our review emphasizes the critical need for integrated healthcare strategies that address both mental and physical health to reduce hospitalization costs and improve outcomes. Effective management of mental health disorders requires comprehensive approaches, including complex outpatient services and preventive care. Future research should focus on standardizing methodologies to provide clearer insights into the economic impact of mental health conditions and guide effective healthcare strategies.

Keywords: mental health; hospitalization costs; psychiatric services

1. Introduction

Mental and behavioral disorders are affecting 1 in every 8 people, or 970 million people from around the world in 2019. The requirements of patients with mental illnesses have not yet been sufficiently met by health systems, which also have a serious resource shortage. Around the world, there is a large disparity between the demand for therapy and its availability, and when it is, it is frequently of low quality. For instance, barely one-third of those suffering from depression and 29% of those with psychosis obtain official mental health treatment.

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Individuals suffering from mental illnesses also need assistance in forming and preserving social, familial, and personal ties. Individuals suffering from mental illnesses could also require assistance with housing, work, educational programs, and engagement in other worthwhile pursuits [1].

In the EU, mental and behavioral problems are one of the largest categories of diseases. The European Union recorded a total of 83 million bed days for in-patient treatment of mental and behavioral disorders in 2021. However, it is important to note that data for Malta and Belgium are from 2020, and there is no available data for Denmark, Greece, and Luxembourg. This group of diseases and ailments exceeded all others, including circulatory system diseases. Excluded from these official figures, however, is the notion that a significant proportion of mild to moderate mental issues remain unidentified and unaddressed.

Mental health is not only essential for individuals but also crucial for society. Mental health issues have a negative impact on economic performance due to reduced productivity and increased expenses related to work incapacity.

The European Health Union introduced a novel strategy targeting mental health in 2023, as a crucial first step in implementing a new, interdisciplinary approach to tackle mental health issues and to ensure that mental health is given the same level of importance as physical health. The Commission will assist Member States in prioritizing the mental well-being of their populations by implementing 20 major initiatives and allocating 1.23 billion euros in EU funding from various financial instruments. Moreover, this initiative aims to comprehensively address mental health issues in the EU by focusing on several key principles such as adequate preventative measures, affordable and superior treatment, and successful reintegration into society after recovery [2].

On the other hand, as per the most recent Situation Analysis carried out by The National Institute of Public Health (INSP), in 2020, there were 1200,8 cases of mental disorders per 100,000 individuals in Romania, and 234,43 people out of 100,000 were diagnosed with a depressive episode. The World Health Organization emphasizes that funds and efforts should be focused on improving mental health, regardless of the socioeconomic or educational standing, gender, or background of those who are impacted. Additionally, it suggests that children, adolescents, and young people give priority to their mental health [3].

Funding for the Romanian National Centre for Mental Health and Substance Use Prevention was 574899,6 euros in 2020. To put that figure in perspective, this is around 0.13% of the entire amount allocated to public health institutions in Romania.

The standard of care provided to patients with psychiatric-related issues may suffer under these conditions. However, other medical professionals frequently discriminate against psychiatric patients by avoiding professional contact with them, disregarding their medical obligations to them. All these facts about the Romanian healthcare system point to a high degree of institutional and societal stigma that has not been effectively addressed by legislative and administrative initiatives [4].

Despite variations in costs among countries due to differences in healthcare systems and socioeconomic development, research consistently indicates additional expenses linked to psychotic relapses, where only 30% of the costs are attributed to direct healthcare spendings [5].

During the last fifty years, there has been an important change in the way individuals with mental illness receive medical care. The transition from institutional care to community-based models prioritizes the active participation of individuals, in line with recovery-oriented concepts. This transformation has also reshaped inpatient services, now emphasizing the delivery of brief interventions during periods of acute deterioration or increased risk [6]. The global spread of deinstitutionalization has led to the development of a variety of community-based mental health services tailored to diverse needs. These services include crisis assessment and treatment teams, which offer mobile assessment and triage, directing patients to either hospital admission or less intensive follow-up care; continuing care or community mental health teams, which provide case management and specialized therapies on an outpatient basis, with the goal of transitioning care back to primary care providers [7].

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The role of social determinants of health in influencing hospitalization costs for mental disorders is another area of increasing focus. Recent research is examining how factors such as socioeconomic status, housing stability and access to social support impact the likelihood of hospitalization for mental health conditions [8,9]. This trend reflects a broader understanding that addressing mental health requires a comprehensive approach that includes not only medical and psychological interventions but also social and economic support [10]. Policies and programs that address these social determinants are being recognized as essential components in reducing hospitalization costs associated with mental disorders [11,12].

Patients with psychiatric conditions and multiple medical comorbidities often require more complex and comprehensive care [13]. This complexity arises from the need to manage both psychiatric symptoms and the additional medical conditions that necessitate the use of additional medical resources, including advanced diagnostic tests, specialized targeted medications, and therapeutic procedures. This dual approach leads to a higher utilization of hospital resources, thereby increasing overall costs [14].

This extended stay ensures that the patient's multiple health needs are adequately addressed before discharge, thereby preventing readmissions and further complications. However, this prolonged care period directly contributes to higher hospitalization costs [15].

Furthermore, patients with psychiatric and medical comorbidities often involve multidisciplinary care teams, including psychiatrists, nurses, social workers, and other healthcare professionals. High comorbidity rates place additional strain on hospital systems, requiring more specialized wards, increased staffing, and enhanced training for healthcare providers [16]. Coordinating care across these disciplines is essential for effective treatment but also adds to the overall cost and administrative burden. Several studies have analyzed the association between psychiatric comorbidities and filial costs of somatic hospital care [17–19] and their indirect cost to society [20–23].

Outpatient medical rehabilitation for individuals with serious mental illnesses primarily occurs through integrated services that include vocational rehabilitation and specific programs for the mentally ill [24]. In Romania, there is generally a shortage of medical rehabilitation services for serious mental illnesses, with inpatient rehabilitation often being impractical and outpatient or mobile options nearly non-existent [25]. It has also been found that higher hospitalization costs are associated with involuntary admissions and a history of repeated hospitalizations among patients. [26].

The objective of this review was to determine the magnitude of the influence of mental diseases on expenses, particularly those related to hospitalization and treatment of affected individuals. Furthermore, a secondary objective was to ascertain the most recent strategies designed to optimize the cost-effectiveness of treatments and therapies for patients with mental disorders, while simultaneously enhancing their overall well-being.

2. Materials and Methods

We conducted this review with a search strategy to identify all relevant articles for inclusion published in the period of 2014 - 2024. A narrative review approach was chosen as the heterogeneous nature of our aims.

To be eligible for inclusion, studies had to have an approach towards the impact of mental health on the interventions costs as their primary aim. All study designs were eligible for inclusion and gray literature was also included.

Electronic database searches were conducted in PubMed and Google Scholar. We used a combination of terms and keywords related to the aims of the present review: ((mental illness) AND (costs)) AND (hospital); (Mental Healthcare) AND (costs); Psychiatry AND "mental health" OR "Mental Health Care''.

A total of 1110 results were obtained. After removing the duplicates two independent researchers conducted screening of abstracts and review for eligibility of all articles identified.

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Moreover, a manual search of reference lists of each study for further eligible studies was also conducted. A total of 37 articles were included in the present review.

The studies identified included both quantitative and qualitative data covering a wide range of outcome measures, including consumer satisfaction, quality of life, health and social function, and strategies for managing costs. We adopted the following exclusion criteria: Articles not published in English; Articles published before 2014, thus maintaining a focus on recent and relevant research; Studies that did not primarily address the economic implications of mental health disorders, specifically those related to hospitalization costs; Articles that did not include quantitative or qualitative data relevant to hospitalization costs; Articles that did not meet certain standards of scientific rigor, such as non-peer-reviewed sources lacking empirical data.

3. Results

3.1. The Cost of Mental Health

The 2020 review of Christensen M.K. et al. [27] examined a total of 13,579 candidate titles and included 143 studies conducted in 48 countries. The majority of these studies were conducted in high-income nations such as the USA, UK, and Germany. The group of mood disorders was the subject of the highest number of investigations (54 studies), followed by schizophrenia (40 studies) and neurotic disorders such as anxiety or depression (28 studies). Schizophrenia had the largest median societal cost per patient, amounting to $13,256 USD purchasing power parity. On the other hand, eating disorders had the lowest median cost, which was $547 USD purchasing power parity. Developmental diseases incurred the greatest expenses, although they were inadequately represented with only two estimates. The analysis revealed that about 50% of the overall expenses were attributed to indirect expenses associated with illness and death. The reporting quality of the studies included in the analysis was inconsistent, since many studies did not provide sufficient information regarding the treatment caused by the missing data and sensitivity analyses. The review emphasizes the necessity for increased research efforts from low- and middle-income countries and improved reporting criteria in economic studies pertaining to mental disorders. The results validate that mental health conditions impose significant financial burdens on society, with the costs varying depending on the specific type of disorder and the country in question. Schizophrenia, developmental disorders, and intellectual disabilities generated the highest expenses, whereas mood, neurotic, and substance use disorders, although less expensive per patient, made a substantial contribution to the overall national cost due to their higher prevalence.

A 2023 research [28] investigated the economic burden of physical comorbidities in individuals with mental health disorders. The findings indicated that individuals with mental health disorders and physical comorbidities lead to significantly higher healthcare costs and use more healthcare-related resources compared to those with mental health disorders only, physical health conditions only, or the general population. The authors concluded that for patients with associated mental health disorders, the medication costs more than doubled, when compared to patients with physical comorbidities only. Furthermore, individuals with mental health disorders and associated comorbidities have significantly higher odds of experiencing productivity losses, such as unemployment and absenteeism. The odds ratio for productivity losses was 2.51 when comparing individuals with mental health disorders and associated comorbidities to those with mental health disorders only. Overall, the paper provides comprehensive evidence on the significant excess costs and resource use associated with physical comorbidities in individuals with mental health disorders, underscoring the critical need for integrated healthcare strategies.

3.2. The Influence of Mental Illness on Hospital Expenses

A consistent theme across studies is the high prevalence of physical comorbidities among psychiatric patients. While the proportion of patients with associated physical diseases aligns closely across studies (70% and 63.4%), variations exist in the types of associated comorbidities identified. For instance, one study emphasizes hypertension as the principal physical disease (29.1%) [29],

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whereas another highlights metabolic (28.9%) and endocrine disorders (25.6%) as prominent comorbidities [30]. These discrepancies may stem from regional differences in disease prevalence or methodological variations in data collection and analysis.

According to Caballer-Tarazona et al. [31] psychotic disorders, including schizophrenia and affective psychoses, were the most common diagnoses, making up 52.6% of the sample gathered from multiple psychiatric hospitals. Substance abuse was noted in 31.1% of admissions, although it did not significantly impact the average length of stay. Frequently observed comorbidities included hypertension (18.3%), smoking (13.6%), diabetes (10.8%), and metabolic disorders (6.7%). Contrary to initial expectations, readmission was associated with lower costs and shorter hospital stays. Despite substance abuse being statistically significant, it was excluded from the final model due to the lack of specificity about the type of substance. Psychotic disorders were linked to the highest costs, while readmissions surprisingly led to reduced costs and shorter stays. These findings highlight the importance of targeted interventions and resource allocation based on specific diagnostic categories and comorbidities to effectively manage healthcare expenditures. Furthermore, the occurrence of psychiatric comorbidities in somatic hospital care has been reported to range from 15 to 50% [32,33]. Moreover, patients with concurrent mental health issues and somatic primary diseases were over twice as likely to be hospitalized for somatic care compared to those without mental health concerns [34,35].

The research of Ride et al. [36] examined data across 13,846 adults diagnosed with Severe Mental Illness. The majority of the sample (66.6%) remained under observation for three years, while 15.8% were observed for two years, and 17.6% for one full financial year. Approximately a third had at least one physical comorbidity, and two-thirds had concurrent depression. A significant proportion were current or ex-smokers (75%), and 16% had recently received a diagnosis of Severe Mental Illness. Urban residence was predominant (89%), particularly in socioeconomically deprived areas. The average annual healthcare cost per patient amounted to £4988.87, with a wide range from £0 to £243,831, of which £2575.73 (52%) was attributed to Severe Mental Illness-related expenses. Total costs exhibited a declining trend with age until middle age, after which they increased for patients aged over 65, while the proportion of costs attributed to Severe Mental Illness gradually declined with age. The analysis revealed that among patients aged 19-35, 64% of the overall expenses were attributed to Severe Mental Illness, while for individuals over 65, this percentage decreased to 36%. This suggests a transition towards addressing physical comorbidities in older individuals. Notably, old age was associated with higher primary care and general hospital costs, but lower mental health costs. Additionally, comorbid depression and smoking were associated with increased primary care costs exclusively, while male patients exhibited lower primary care costs. The study underscores the necessity of accurately estimating healthcare costs for individuals with Severe Mental Illness to guide resource allocation, health technology assessments, and service planning.

3.3. Expenses Related to Hospitalization in a Mental Health Facility

Healthcare expenditure, particularly in industrialized countries, remains a critical concern. Psychiatric hospitals, in particular, face significant costs, with mental health care accounting for a substantial portion of inpatient treatment expenses [31]. The length of stay in psychiatric facilities is a key determinant of costs. In response to economic pressures, pilot projects [37] are exploring case-based financing models. One such project investigated whether psychopathological syndromes assessed at hospital admission could better estimate resource consumption than traditional diagnoses [38]. The assessment of psychopathological syndromes offers a descriptive and theoretically unbiased approach, potentially providing a more nuanced understanding of patient status. Unlike diagnostic categories, syndromes capture the quantitative expression of symptoms, allowing for a dimensional representation of psychopathology. Despite the potential of psychopathological syndromes, research on their association with the duration of hospitalization remains limited. Preliminary findings suggest syndromes explain only a small portion of the duration of hospitalization variation. Length of stay serves as a direct and commonly employed indicator of hospital resource utilization [39].

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The phenomenon of long-term patients residing in acute hospitals stands in stark contrast to the growth of housing assistance services. Over the past 20 years, capacities for individuals with mental disabilities have steadily increased, particularly in the area of outpatient assisted living. However, this increase in housing assistance has not been matched by a corresponding rise in housing options for the most severely ill individuals [40–42]. This trend is concerning, especially given the widespread shortage of medical rehabilitation services for people with serious mental illnesses, particularly outpatient and mobile rehabilitation options. As a result, there are few measures in place to address the progression of illnesses that necessitate dependent housing care [43,44].

Agitation in psychiatric wards was linked to longer hospital stays, higher readmission rates, and increased medication use [45,46]. Containment measures, while necessary, negatively affect both patients and staff. Despite their significant impact on mental health care, there is limited knowledge about the typology and costs associated with agitated behaviors and containment in acute mental health settings. Estimates of agitation prevalence in psychiatric inpatients range from 10.5% to 52% [47].

In their 2015 meta-analysis [45] the authors presented a study conducted in the UK, that evaluated the national costs of conflictive behaviors and containment in psychiatric acute units using an epidemiological, cross-sectional approach. Out of the eight studies, six studies found a statistically positive association between the length of stay and agitation or containment. This suggests that more agitated patients tend to have longer hospital stays, potentially indicating greater illness severity. All studies that evaluated readmission rates found a significant association with aggressiveness or agitation. The study updated these costs to 2014 values, presenting a comprehensive financial overview of these incidents. Conflictive behaviors involved verbal abuse, aggressiveness towards goods, items or individuals, self-inflicted harm, violent outbursts in association with alcohol or drug use, and refusal to accept treatment. The total cost per ward for all conflictive behaviors was estimated at €182,616, with a national total of 91 million euros. Among conflictive behaviors, verbal abuse, and aggression (towards objects, others, and self) accounted for a significant portion of the costs, totaling €47,529 per ward. This detailed financial assessment underscores the substantial economic burden of managing conflictive behaviors and containment in psychiatric settings, highlighting the need for effective interventions and preventive measures to mitigate these costs [48]. Overall the meta analysis highlights significant associations between agitation, aggressiveness, containment measures, and increased service use and costs in psychiatric inpatient care. However, there is a need for more comprehensive studies, standardized definitions, and international collaboration to better understand and manage these issues effectively. Reducing seclusion and restraint through alternative strategies might be a promising approach that warrants further investigation and implementation. Building upon this concept, a study [49] assessed the annual direct costs of agitation and its containment strategies for acute psychiatric inpatients using a cross-sectional approach. The authors estimated that these costs amounted to a total €280,535.00 annually for an area with 640,572 adult residents, representing 6.87% of the total costs of acute hospitalization. The study further highlights the need for effective, low-intensity interventions like verbal de-escalation techniques to manage agitation and prevent severe, costly episodes.

3.4. Strategies for Efficiently Managing Patients and Optimizing Cost Effectiveness

Individuals with serious mental illnesses require comprehensive assistance from a diverse range of service providers within the health insurance, rehabilitation, and social systems. The point at which outpatient care becomes insufficient depends partly on the resources available within the outpatient care system [50]. Numerous studies [51–54] have demonstrated that coordinating psychiatric care across different sectors and service providers results in more consistent and effective treatment, ultimately reducing the need for hospitalizations.

Services for individuals with mental disorders include housing assistance and support in day care centers. Housing assistance is provided either through special living arrangements (such as group homes) or in one's own residence (outpatient assisted living). Social psychiatric services are available in all regions and are organized at the municipal level [55]. The core functions of Social

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psychiatric services include providing accessible advice and support, and they are unique in that they can proactively visit individuals based on third-party reports of possible mental illness [56]. Additionally, Social psychiatric services are involved in managing psychological crises and coordinating care within the social psychiatric or community psychiatric network, which consists of local service providers [57].

The medical system for people with mental illnesses is also supported by a network of advisory services for individuals with psychosocial needs. These services include facilities for educational, marriage, family counseling, as well as addiction counseling and support from Social Psychiatric Services [58]. These advisory services are locally organized and funded either through taxes or private means. The difference between counseling and psychiatric therapies might be vague, while the counseling system is accessible to everyone, only those with a confirmed psychiatric diagnosis have access to the standard care system for mental health. Occupational therapy is a core component of the chronic treatment and rehabilitation of individuals with mental illnesses. In inpatient psychiatric treatment, work therapy is a fundamental part of the therapeutic process, however, its application is increasingly extending to outpatient settings [59]. Outpatient work therapy targets individuals who have limited functionality, focusing primarily on developing basic work skills such as concentration and perseverance. The underlying principle of various work therapy models is that replicating the work environment through therapy aids long-term integration into the workforce by addressing the necessary skills and abilities [60].

For patients with alcohol misuse or disordered use, SBIRT (Screening, Brief Intervention, and Referral to Treatment) interventions were associated with a significant reduction in subsequent hospitalization and emergency department visit likelihood [61]. The results did not show significant cost reductions for patients using illicit or prescription drugs, or those using both alcohol and drugs. The study concluded that SBIRT interventions by counselors are particularly effective for patients with alcohol misuse or disordered use, significantly reducing the likelihood and costs of subsequent hospitalizations and emergency department visits. However, these benefits were not observed for patients using illicit or prescription drugs.

The shortage of skilled workers, which affects the entire care system for people with mental illnesses, requires a structural change towards greater outpatient care [62]. Of particular relevance for people with serious mental illnesses are outpatient special therapeutic interventions such as home psychiatric nursing, occupational or sociotherapy [63]. Day clinics are an important link between outpatient and inpatient care. In particular, independent and acute day clinics in large and rural regions with long journeys to the psychiatric clinic are of considerable importance for care close to home [64].

Several studies evaluated the impact of inpatient care at home for mental health patients or at-home crisis intervention teams on hospital admission outcomes [65–67]. Generally, at-home crisis intervention teams are effective in substituting for inpatient care, although the quality of evidence varies. However, a 2015 prospective cohort study in Spain found that home treatment significantly reduced the likelihood of hospital admission [68]. The cost-effectiveness of at-home crisis intervention teams programs for treating mental disorders has not been extensively studied. Generally, the costs associated with at-home crisis intervention teams are higher than other forms of community care but higher community care costs are offset by reduced hospital stays [69,70]. Kilian et al. [71] estimated savings of $8,388 per episode of home treatment. Key components of effective mental health at-home crisis intervention teams programs include clear referral criteria, adequate staffing, after-hours availability, and collaborative work with consumers and caregivers. These programs support the recovery model of mental health care by allowing consumers and caregivers to work closely with clinicians in their everyday environment, fostering skill development and supported decision-making [72]. However, providing care in a home setting can blur therapeutic and ethical boundaries, raising challenges related to confidentiality, boundaries, and staff safety [65].

The paper by Petkari et al. [73] systematically reviewed the role planning and transition between inpatient and outpatient mental health care, thus addressing the gap in continuity of care. The study identifies three types of interventions involving carers: purely educational programs in preparation

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for discharge, programs involving caregivers in planning the transition from inpatient to community mental health services, and comprehensive programs that include both planning and aftercare follow-up. The authors concluded that the most effective interventions are those that are comprehensive, incorporating psychoeducation, care planning, and follow-up in the community. These interventions were found to significantly improve long-term clinical outcomes and reduce re-hospitalization rates.

A study [74] evaluated the feasibility and cost-effectiveness of Reflecting Team interventions in a public hospital's psychiatric unit. Reflecting Team (RT) strategy, developed by Tom Andersen [75], involves patients, families, and professional collaborators in a therapeutic space to address chronic issues. Results showed a significant decrease in the number of hospital admissions and total time spent in the psychiatric acute unit while hospital costs were also significantly reduced. The findings suggest that RT interventions can positively change treatment for chronic psychiatric cases and enhance hospital resource efficiency. The study was conducted in a hospital setting, providing practical insights and data that can be directly applicable to similar healthcare environments but the study involved only six patients, which limits the generalizability of the findings and reduces the statistical power of the results. Moreover, the lack of a control group impairs the process of attributing the observed improvements exclusively to the RT intervention, as other factors could have influenced the outcomes. Reflecting Team interventions were also found to be effective in various settings. For example, Garrido-Fernández et al. [76] reported that RT could lead to better psychotherapeutic outcomes compared to self-help groups or no treatment.

A meta-analysis of 34 studies [77] revealed a significant reduction in costs (overall ratio of mean costs was 0.944, indicating a 5.6% decrease) and improvement in outcomes (overall ratio of mean outcomes was 1.062, suggesting a 6.2% increase) associated with integrated care. The study assessed various types of integrated care methods, including integrated case management interventions, where case managers coordinate patient treatment plans and facilitate provider communication to ensure continuous care, and integrated care teams, which are multidisciplinary groups that collaboratively provide comprehensive care [78]. Every assessed technique attempts to improve patient care by facilitating improved coordination, communication, and continuity among healthcare personnel. The research revealed substantial cost reductions and enhanced results in integrated care, especially in studies with follow-up durations longer than 12 months. Disease management programs were linked to significant reductions in costs and improvements in outcomes. Integrated care teams and management programs had favorable outcomes however service coordination was associated with cost escalations. The findings indicate that implementing integrated care holds great potential for decreasing healthcare expenditures and enhancing patient outcomes.

The study of Benjenk [79] systematically reviewed various interventions aimed at reducing readmission rates for patients with physical health conditions through mental health strategies. The primary objective was to determine whether addressing mental health symptoms can lower the risk of readmissions for somatic conditions. The study found that mental health interventions can effectively reduce readmission rates for patients hospitalized with physical conditions, particularly when these interventions are provided post-discharge. Significant reductions in readmission rates were observed with interventions such as telemonitoring combined with psychotherapy for heart failure patients and management for home care patients with depressive symptoms. Communities with strong public mental health services had significantly lower readmission rates, emphasizing the importance of community-level mental health infrastructure [80]. Post-discharge interventions were more effective than inpatient-only interventions, while proactive psychiatric consultations during hospitalization did not significantly impact readmission rates. Studies by Orsak [81] and Sledge [82] evaluated proactive psychiatric consult liaison services but found no significant impact on readmission rates. Another study by Jennings [83] examined a discharge intervention that included mental health components but also found no significant difference. A meta-analysis by Pizzi [84] on antidepressant therapy using SSRIs showed mixed results, with significant reductions in readmissions only when all study designs were included in the statistical analysis.

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From the authors' perspective, their research [85] conducted in 2016 introduces cost-utility analysis as a critical method for the economic evaluation of mental health interventions. The authors emphasized the importance of cost-utility analysis in providing decision-makers with information about the effectiveness of resource allocation in healthcare. The study highlighted that mental health interventions frequently present compelling financial arguments for investment, as they have the potential to generate substantial health benefits at cost-effective prices. Nevertheless, it also highlighted the challenges and obstacles of implementing cost-utility analysis in the field of mental health, specifically in accurately measuring the quality-adjusted life years and the wider societal consequences.

The paper of Reist et al. [51] systematically reviewed in 2022 the Collaborative Care model (CCM) for integrating mental health services into primary care, demonstrating its effectiveness and cost-efficiency compared to standard care. Collaborative Care model has been shown to improve access to mental health services, enhance patient outcomes, and increase both provider and patient satisfaction [86]. The Collaborative Care model was demonstrated to significantly improve clinical outcomes for patients with various psychiatric conditions, achieving higher remission rates and faster treatment initiation compared to standard care. For example, patients treated under CCM reach remission from depression significantly faster than those receiving traditional care. Despite the high initial costs of implementing CCM, long-term healthcare savings are substantial due to reduced overall healthcare utilization and improved treatment adherence.

Table 1. The primary issues arising from mental diseases and their financial implications, as well as potential solutions suggested by the authors in the reviewed papers.

Problems Caused by Mental Disorders and Impact on Costs	**Proposed Solutions**
High Healthcare Costs: Mental disorders lead to increased healthcare costs due to frequent hospital admissions, prolonged stays, and the need for specialized treatments.	**Integrated Care Models**: Implementing integrated care models that combine mental and physical healthcare to provide holistic care, thereby improving outcomes and reducing costs.
Frequent Hospital Admissions: Patients with mental disorders are hospitalized more often, leading to higher overall healthcare utilization.	**Preventive and Outpatient Services**: Enhancing preventive care and expanding outpatient services to reduce the frequency of hospital admissions.
Longer Hospital Stays: The complexity of managing both mental and physical health issues often results in extended hospital stays.	**Comprehensive Discharge Planning**: Involving caregivers in discharge planning and ensuring continuity of care post-discharge to prevent readmissions.
High Readmission Rates: Inadequate outpatient care and the chronic nature of mental health conditions contribute to high readmission rates.	**Post-Discharge Interventions**: Implementing post-discharge interventions such as telemonitoring and psychotherapy to support patients after they leave the hospital.
Indirect Costs: Mental disorders lead to indirect costs including lost productivity, long-term care needs, and societal impacts.	**Vocational Rehabilitation**: Providing vocational rehabilitation services to help individuals with mental disorders reintegrate into the workforce, thereby reducing indirect costs.

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Comorbidities: The presence of physical comorbidities alongside mental disorders complicates treatment and increases healthcare costs.	**Multidisciplinary Care Teams**: Employing multidisciplinary care teams to address both mental and physical health needs comprehensively.
Lack of Community-Based Services: The shortage of community-based mental health services leads to higher reliance on inpatient care.	**Community Mental Health Services**: Developing robust community mental health services, including crisis intervention teams and outpatient clinics, to provide care closer to home.
High Medication Costs: The use of psychotropic medications and treatments for comorbid conditions significantly increases healthcare expenses.	**Cost-Utility Analysis (CUA)**: Applying CUA to evaluate the economic efficiency of mental health interventions and guide resource allocation.
Social Determinants of Health: Factors like socioeconomic status and housing stability impact hospitalization rates and healthcare costs.	**Addressing Social Determinants**: Implementing policies and programs that address social determinants of health, such as improving housing stability and access to social support.
Workforce Shortages: The shortage of skilled mental health professionals increases the burden on existing healthcare systems.	**Structural Changes in Care Delivery**: Transitioning towards greater outpatient care and integrating specialized therapeutic interventions like home psychiatric nursing and occupational therapy.
High Costs of Managing Agitation and Containment: Managing agitation and conflictive behaviors in psychiatric settings incurs significant costs.	**De-Escalation Techniques**: Using low-intensity interventions like verbal de-escalation techniques to manage agitation and reduce the need for costly containment measures.
Economic Burden of Specific Mental Disorders: Disorders like schizophrenia and developmental disorders generate higher costs.	**Focused Interventions**: Developing targeted interventions and resource allocation strategies based on specific diagnostic categories.

4. Discussion

Overall, the articles assessed in the present review on the impact of mental disorders on hospitalization costs reveal several common themes, highlighting the substantial economic burden these conditions impose on healthcare systems. Individuals with mental disorders are hospitalized more frequently and have longer stays due to the complexity of managing both mental and physical health issues, often requiring specialized care such as psychiatric consultations and dedicated mental health units. These hospitalizations are associated with higher readmission rates due to inadequate outpatient care and the chronic nature of mental health conditions [87,88]. The direct costs include extended hospital stays, specialized treatments, and frequent emergency service use, while indirect costs encompass lost productivity, long-term care needs, and broader societal impacts. The coexistence of mental and physical health conditions complicates treatment, leading to increased medical complications and higher costs. Addressing these challenges requires integrated care models, robust outpatient and preventive services, and comprehensive policy interventions to manage costs and improve patient outcomes [89].

The literature on the impact of mental disorders on hospitalization costs reveals several areas of disagreement, reflecting the complexity and multifaceted nature of this issue. One significant area of contention is the extent of the cost impact. While there is a consensus that mental disorders increase

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hospitalization costs, studies vary in their estimates of the magnitude. Some research suggests that the costs are substantially higher, highlighting significantly increased expenses, whereas other studies find a more moderate increase [90,91]. These differences often stem from variations in study design, the populations studied, and the healthcare systems analyzed.

Another area of disagreement concerns the influence of comorbidities. There is debate over how much of the increased costs are directly attributable to mental disorders versus the physical health conditions that often accompany them. Some researchers argue that comorbid physical conditions primarily drive the higher costs, asserting that these conditions necessitate more frequent and intensive care [28,92]. Others maintain that mental disorders themselves significantly elevate healthcare needs and expenses, regardless of the presence of physical comorbidities [28,93].

The effectiveness of integrated care models also generates considerable debate. Many advocate the integrated care models that combine mental and physical healthcare to reduce costs, citing significant cost savings and improved outcomes in some studies [77]. However, others find only marginal benefits and question the economic viability and scalability of such models. The differing conclusions often depend on the specific implementation and context of the integrated care initiatives being evaluated.

Preventive and outpatient services are another contentious issue. While some studies show that robust outpatient mental health services significantly decrease hospital admissions and readmissions, thereby lowering overall costs [79,94], others argue that the initial investments in such services are high, and the cost savings are not as substantial or immediate as anticipated. The debate revolves around the balance between upfront costs and long-term savings, with varying perspectives on the effectiveness of preventive care in reducing hospitalization rates [95,96].

Policy implications and funding strategies also see divergent views. There is disagreement over the best policy approaches and funding mechanisms to address the cost burden of mental disorders. Some experts advocate for increased funding for mental health services and preventive care, believing this will lead to long-term cost savings and better health outcomes [97,98]. Others argue for more targeted interventions, expressing concerns about the efficient allocation of resources and the potential for unintended consequences, such as over-reliance on certain types of care that may not be cost-effective [85].

Emerging trends in the literature on the impact of mental disorders on hospitalization costs reflect a growing recognition of the complexity of this issue and the need for innovative approaches to address it. One significant trend is the increasing focus on integrated care models. Recent studies highlight the potential benefits of integrating mental and physical health services to improve patient outcomes and reduce costs. This approach acknowledges the interconnectedness of mental and physical health and aims to provide holistic care that can prevent hospitalizations and reduce readmission rates. Integrated care models are being explored in various settings, from primary care clinics to specialized medical homes, with promising results indicating better health outcomes and cost savings [41,99,100].

Another emerging trend is the emphasis on preventive care and early intervention. There is a growing body of evidence suggesting that early identification and treatment of mental health conditions can significantly reduce the need for hospitalization. Preventive strategies, such as routine mental health screenings in primary care settings and proactive management of mental health symptoms, are being increasingly advocated. These approaches aim to address mental health issues before they escalate to the point of requiring hospitalization, thereby reducing the overall economic burden on healthcare systems [51,101].

Technological advancements and digital health interventions are also gaining attention in literature. The use of telemedicine, mobile health applications, and digital therapeutics is being explored as a mean to improve access to mental health care and support continuous management of mental health conditions. These technologies can provide cost-effective alternatives to traditional in-person visits and enable timely interventions, potentially preventing hospital admissions. Studies are beginning to show that digital health interventions can be effective in managing mental health

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conditions, offering a scalable solution to address the growing demand for mental health services [102–108].

Finally, there is a growing interest in personalized medicine and precision psychiatry. Advances in genetic research and neuroimaging are paving the way for more personalized approaches to treating mental health conditions. By tailoring treatments to the individual characteristics of patients, such as their genetic profile or specific neurobiological markers, it is hoped that more effective and efficient care can be provided. This approach aims to reduce trial-and-error in treatment, improve outcomes, and ultimately lower hospitalization costs by providing more targeted and effective interventions [109,110].

4.1. Limitations

The present review should be regarded in light of several limitations. First of all, the review does not employ meta-analytic techniques to quantitatively synthesize the findings, this limitation meaning that our results cannot provide a precise estimate of the overall effect size of the studies, reducing the ability to make definitive conclusions about their effectiveness of strategies intended to reduce costs. Moreover, the studies included in the review vary widely in terms of design, population, and outcomes measured. Another important limitation is that many studies included in the present review were cross-sectional, thus providing a snapshot in time rather than a long-term insight. This limitation might affect our understanding of how mental health interventions impact costs and outcomes over time.

4.2. Strengths

The present review thoroughly examines a diverse range of studies, offering an in-depth viewpoint on the influence of mental disorders on hospitalization expenses and the efficacy of different interventions. By incorporating data from different countries and healthcare systems, a comparative analysis may be conducted to emphasize the impact of varied contexts on costs and results. Our work not only identifies the problems, but also examines practical solutions and policy implications. The emphasis on this aspect enables the results applicable to healthcare professionals, policymakers, and stakeholders, hence easing the conversion of research into practical application, thus this review might offer useful insights into future strategies for enhancing mental health treatment and decreasing expenses by emphasizing these novel techniques.

5. Conclusions

In summary, the emerging trends in the literature on the impact of mental disorders on hospitalization costs include a focus on integrated care models, preventive care and early intervention, technological advancements and digital health, the role of social determinants of health, and personalized medicine. These trends reflect a move towards more holistic, proactive, and individualized approaches to managing mental health conditions, with the goal of improving patient outcomes and reducing the economic burden on healthcare systems. Nevertheless, variations in methodology contribute to discrepancies in the research findings. Differences in how costs are measured, the types of mental disorders included in studies, and the time frames considered, lead to varying conclusions about the economic impact of mental disorders on hospitalization costs. These methodological differences highlight the need for a more standardized research approach to gain a clearer and more consistent understanding of the financial implications of mental health conditions.

In summary, the literature on the impact of mental disorders on hospitalization costs shows significant disagreements regarding the magnitude of the cost impact, the role of comorbidities and the best policy approaches. These disagreements underscore the complexity of addressing the economic burden of mental health conditions and the need for comprehensive, standardized research to inform effective healthcare strategies.

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