

Childhood Depression is a Biopsychosocial Phenomenon

Gautam Makwana

Research Scholar Ph.D. (Social Work), School of Social Sciences, Department of Social Work, Mizoram University (A Central University), Aizawl 796004, Mizoram, India.

Corresponding author: Gautam Makwana

Email – gautam_makwana@hotmail.com

ABSTRACT

A biopsychosocial model serves as the driving force behind multilevel research that integrate biological and behavioural indicators of the variables that may be implicated in difficult developmental pathways leading to outcomes like child psychopathology. Unfortunately, historical research shows that children depression commonly arises in an environment of vulnerability and poverty, where social and personal requirements connected to childhood depression are not always taken into account. Due to the severe and long-lasting consequences it has on a child's development, childhood depression is a serious public health issue that calls for special attention. Recent research have looked at the prognosis, diagnosis, and treatment of childhood depression. The negative impacts of depressive diseases on children's quality of life, either directly or indirectly, are frequently highlighted in recent scientific research on childhood depression. This review presents an overview of the published research on the subject in order to assess the current level of knowledge about several aspects' aetiology/risk factors, diagnosis, therapy, prevention, and prognosis of paediatric depression. The reports on child depression that were published in previously chosen online databases underwent a qualitative review by our team. The search was conducted in June 2022 using the MEDLINE online database and was limited to works published between 1st January 2010 and 30th June 2022. This review demonstrated that childhood depression commonly contributes to co-morbidities and other mental issues. The assumption that human resources, including the healthcare system as a whole, lack the required training to address childhood depression is also supported by a number of recent studies. Additional study is needed to develop programs that will educate healthcare professionals on how to handle paediatric depression. A lot of research has been done on the connections between behaviour and various child developmental outcomes, but much of it has been done at a very high level of behavioural analysis. Furthermore, larger and more uniform sample sizes are needed for studies on the prevention and treatment of childhood depression.

Keywords: phenomena, depression, childhood, major depressive disorder, mental health, biopsychosocial, anxiety.

(Paper received – 8th December 2022, Peer review completed – 5th January 2023)

(Accepted – 8th January 2023)

INTRODUCTION

The prevalence of psychiatric diseases is increasing, and as a result, scientific research on mental health is getting greater attention. Up until the year 2021, the World Health Organization (WHO) expected that depression will rank as the second-highest global burden of illness; as of 2022, this forecast is still accurate. The frequency of depressive disorders, however, has grown in both children and adults, with a range of 0.3 percent to 7.8 percent among young children under the age of 13 [1].

A male teenager with depression who finds it difficult to communicate with his friends can be studied using the biopsychosocial model of developmental psychology. His condition might be caused by a number of different things. Given the significant and long-lasting consequences childhood depression has on a child's development, including physical changes as well as impairments to social and cognitive skills, it is a biopsychosocial phenomenon that has to be given special study. The biopsychosocial approach methodically takes into consideration biological, psychological, and social factors as well as their complex interactions in

order to understand health, illness, and the delivery of healthcare. Adult children may experience psychological discomfort as a result of depressive disorders in the short term, but they can also hinder their long-term social, cognitive, and emotional development, making them a key signal of adult psychopathologies. In light of this, the following review served as the foundation for the present study: What valuable information does the current literature on childhood depression have to offer researchers and clinicians? It also sought to provide readers a thorough grasp of the subject because childhood depression is an important public health problem. According to our hypothesis, despite the growing interest in the subject, human resources such as the entire health care team are still not properly trained to handle the early detection and treatment of childhood depression. More thorough understanding of sociodemographic data, clinical information based on epidemiology, service delivery, and procedures were brought together by new methods of knowledge exchange from psychiatry to paediatrics.

Method of conducting the review

Initially, 'depression' (a Medical Subject Headings [MeSH] term), 'child' (a MeSH term), and 'childhood depression' were the search keywords used in the MEDLINE database (keyword). The further searches were run: 1 AND 2, 3. Even though it is not listed in the MeSH thesaurus, the keyword 'childhood depression' is commonly used to identify research that deal with the thematic object of the current study, therefore we decided to add it to the search strategy in addition to MeSH keywords. The search approach and the found articles were double-checked to ensure a valid sample. The term 'child' was used in this study as a criteria for limiting the age group covered by the current review. MeSH, a controlled vocabulary thesaurus maintained by the National Library of Medicine, is used to index articles for PubMed. The word 'childhood' refers to the time between those ages since in this study, a person between the ages of 6 and 12 is regarded to be a 'child'. The article's review followed the predefined qualifying requirements. We adopted the subsequent inclusion standards: Studies pertaining to childhood depression, references written in English, articles with titles that contained at least one combination of the search strategy's terms, studies on childhood depression, and prospective or retrospective observational (analytical or descriptive, aside from case reports), experimental, or quasi-experimental studies are all acceptable. Other designs, such as case reports, series of cases, literature reviews, and comments, as well as non-original research, such as editorials, prefaces, brief communications, and letters to the editor, were the exclusion criteria. The complete collection of papers was then read. Results linked to teenage or adult depression were not recorded or assessed for this study because the primary focus was on childhood depression. But several of the studies also looked at adult and childhood depression.

Aetiology and Risk Factors

Nine researchers made an effort to link the aetiology and risk factors of childhood depression with various traits, including general cognitive style and parental conflict, a sweet tooth and analgesia, child maltreatment and other negative experiences, prenatal drug exposure, environmental factors, and amygdala functional connectivity [2]. The relationship between interparental conflict (IPC) and childhood depression is thought to be mediated by parental warmth and rejection, with general cognitive style serving as a moderator, according to research on the processes through which both IPC and general cognitive style impact IPC [3]. Researchers discovered that the presence of depressive symptoms alone was associated with increased pain sensitivity and increased desire for sweet-tasting foods and treats. They also found that depression blocked sucrose's analgesic effects [4]. Other studies have shown that results in a sample of low-income Brazilian students point to a range of variables, including the possible impact of psychological family violence, that influence children's depressed behaviour [5]. Drug use during pregnancy also had an impact on a woman's capacity to manage her emotions, which resulted in anxious or depressive behaviour in the offspring [6]. Additionally, it was shown that marital violence is connected to depressive symptoms, which in a clinical population are linked to suicidal ideation [7].

When parental depression and child depressive/anxiety symptoms are related in an assisted conception design, it has been demonstrated that depressive symptoms are partially caused by environmental mechanisms independent of inherited effects and are not taken into account by shared adversity assessments [8]. Child abuse and other traumatic childhood events were associated to anxiety and/or unhappiness [9].

Regarding the genetics of childhood depression, recurrent maternal depression did not appear to interact with gene variants thought to be crucial in the regulation of the stress response and predict symptoms of depression in children and adolescents in this sample [10]. Last but not least, researchers emphasize how early-onset severe depressive disorder is caused by altered corticolimbic functional connectivity. Using resting state functional magnetic resonance imaging (fMRI), the study discovered a diminished connection between the amygdala and cognitive control areas in children aged 7 to 11 who had a history of major depressive disorder (MDD) throughout early infancy and/or a mother who had experienced depression. This suggests a decreased connection within networks that are assumed to be favourably (e.g., limbic areas) and adversely (e.g., dorsal frontal/parietal regions) linked with the amygdala. However, because to the limited sample size, further research is needed to confirm this data [11].

Diagnosis

The diagnosis of childhood depression was the focus of two prior investigations, each of which used a different method. One of them claims that clinically meaningful bouts of MDD in preschoolers may be recognized and correctly diagnosed using age-appropriate Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria. To detect all clinically relevant symptoms of depression in preschoolers, the 2-week length criterion may not be the optimal, according to the Validation of Preschool Depression Research (PDS) subsample of the same longitudinal study [12]. It was noted that while using strict DSM criteria, an adapted DSM (i.e., 2-week criteria set aside) criteria for preschoolers might be taken into account in order to cover a group of children who, while not yet diagnosed with MDD, would probably benefit from additional clinical attention and are at risk for future mood disorder [12].

According to the authors, who claimed that their study included the largest sample of preschoolers to date, episode duration should be given less 'weightage' in diagnostic decisions when dealing with preschoolers because it is more accurately viewed as a dimensionally as an indicator of severity rather than dichotomously when defining 'cases' at the studied age group. We are even more cautious when we consider that the DSM group at follow-up in the research only represents a small sample with a chance of type II error. In the most recent study, researchers investigated whether baseline parental assessments of a child's melancholy symptoms may forecast mood changes in kids. According to the research, there is a comparable degree of link between new-onset child mood disorder (NOMD) and the ratings of depression by both children and parents. The study discovered that parent reports performed much better than child reports for younger children in terms of NOMD prediction, but there were no differences between parent and child reports for children older than 12 years old. The study's goal was to analyse depressive parents' statements, however as not all parents were experiencing a depressive episode at baseline, the findings should be read with caution. The sample's gender imbalance raises the likelihood of further bias and suggests that the findings could not be applicable to dads or homes without a history of parental depression [13].

In the four main limbic brain regions of prepubescent Wistar Kyoto (WKY) rats, baseline levels of monoamines and DHEA were measured (a putative animal model of childhood depression). In two regions of the hippocampus, 'Brain-Derived Neurotrophic Factor (BDNF)' baseline levels were assessed and compared to Wistar strain controls. In the second phase, prepubescent WKY rats were used to test the efficacy of fluoxetine, desipramine, and dehydroepiandrosterone sulphate as chronic antidepressants (DHEAS). WKY prepubescent rats showed altered levels of monoamines in the limbic system, decreased levels of BDNF in the CA3 area of the hippocampus, and lower levels of DHEA in the VTA when compared to controls. Only DHEAS treatment reduced immobility in prepubertal WKY rats during the forced swim test when compared to saline-administered controls, statistically speaking. Wistar controls were unaffected by antidepressants. These results imply a potential involvement for BDNF and DHEA(S) in the pathophysiology and pharmacology of paediatric depression [15].

Prevention

The prevention of childhood depression was looked at in two research. In an experimental Dutch controlled trial, "FRIENDS for Life," a 10-week program (plus two booster sessions), was presented as an effective school-based preventative program for children with early or mild symptoms of anxiety or depression (albeit it was non-randomized). The CBT-based treatment comprises cognitive restructuring exercises, social support training, exposure, relaxation methods, and instruction in problem-solving abilities [15]. The

findings of the other study, which used economic modelling techniques, showed that preventive interventions for childhood and adolescent depression have a very favourable population cost-effectiveness. However, before being widely adopted, implementation issues, particularly those relating to provider acceptability, must be resolved. The study, which concentrated specifically on the screening of children in the Australian population in 2003, came to the conclusion that any national package of preventive health services must include screening children for signs of depression and offering a psychological intervention to prevent a diagnosable case of MDD because they represent excellent value for money [16].

Prognosis

Five studies, each focused on a different instrument for assessing depression in children, were carried out. The Mood and Feelings Questionnaire (MFQ) and its evaluation of equivalency across racial, ethnic groups were the subject of a research among 6th and 8th grade children in the Seattle Public School District. According to this, measuring non-equivalence is not likely to be the root of disparities in MFQ scores between groups [17]. The Positive Affect (PA) and Negative Affect (NA) Schedule for Children - Parent Version underwent a psychometric examination using a sample of children and teenagers from a school (PANAS-C-P). The results of the aforementioned study partially support the PANAS-C-P as a parent-reported perspective of youth PA and NA among school-based juveniles [18]. Researchers conducted a psychometric analysis of the Revised Child Anxiety and Depression Scale - Parent Version in a clinical population. The previously described scale shown encouraging psychometric properties and the ability to distinguish between the specific anxiety disorders as well as between anxiety and depressive diseases [19]. The Depression Self-Rating Scale and Child Post Traumatic Stress Disorder Symptom Scale were modified for use in Nepali in order to assess childhood depression across cultures, proving that alternative validation and transcultural translation can be accomplished in low clinical resource settings by task-shifting the validation process to trained mental health paraprofessionals using structured interviews [20]. The most current research demonstrated conclusively that the RCADS-DAN is a valid screening tool for anxiety in young people in Denmark by analysing results from the Revised Child Anxiety and Depression Scale (RCADS) on a nationwide sample of Danish youth. After examining a sample of depressed outpatients, there is evidence that adult participants with a history of childhood-onset depression have higher levels of Axis I comorbidity than those with adult-onset depression. They are also more likely to meet the criteria for comorbid DSM - Axis I diagnoses, particularly anxiety disorders and avoidant and paranoid personality disorders. Anxiety and depression were strongly associated across all age groups and in both boys and girls. This result indicates that even though they may be assessed separately, they share a large amount of variation. The cohort solely used mothers' reports to determine the stability of anxiety and depressive symptoms, while utilizing a big sample, which may have limited the validity of the data and encouraged over reporting [21]. Finally, a different investigation looked at the effects of conduct disorder (CD) and depression in young females in connection to elements of oppositional defiant disorder (ODD). According to the study's findings, emotional dysregulation and rebellious characteristics of ODD should be acknowledged as therapeutic objectives in order to avoid depression in the future. The study also discovered that in girls between childhood and adolescence, CD symptoms frequently precede depression [22]. In relation to medical depression-related comorbidities, researchers looked at the relationship between psychological well-being (anger, depression, and anxiety) and endothelial function in childhood, raising the possibility that psychosocial adversity in childhood may be a risk factor for later cardiovascular diseases. According to the study's findings, females between the ages of 12 and 16 who self-reported psychological health had lower hyperaemia peripheral artery tonometry scores (attenuated endothelial function). Nevertheless, a potential bias in selection is suggested by the low participation rate, particularly among boys, and the fact that participants were younger than the control group [23]. In relation to paediatric cancer, researchers looked at the prevalence of depression and quality of life among Japanese paediatric cancer patients and found that lower Paediatric Quality of Life Inventory (PedsQL) scores correlated with higher Birleson Depression Self-rating Scale for Children (DSRS-C) scores, indicating that a child's higher propensity to experience depression was correlated with a low health-related quality of life. The requirement of "being able to complete a physical and psychological questionnaire" does not specify whether this ability

is only cognitive or also related to the participant's state of health, which could lead to bias in the inclusion criteria. Additionally, the definition of a child of 'primary school age' is not age-specific [24].

Treatment

Researchers studied cutting-edge treatments for depression in preschoolers and techniques for predicting treatment results in cases of childhood depression in terms of care. In one study, an Emotional Development (ED) module was presented as a tool (PCIT-ED) intended to instruct parents on how to assist the child's emotional development and enhance emotion management. The three components that make up PCIT-ED are dispersed throughout 14 sessions. The parent-child relationship is the main emphasis of conventional PCIT in order to strengthen the parent-child connection and the parent's ability to create loving and effective boundaries with the child. In addition to a revolutionary ED module that teaches parents how to better assist their children's emotional development and emotion regulation, PCIT-ED uses six-session Child Directed Interaction (CDI) and Parent Directed Interaction (PDI) modules. The first module (CDI) focuses on strengthening the parent-child link by teaching positive play techniques, whereas the PDI aims to lessen disruptive behaviour by training the parent to deliver effective directions and educate the parent in strategies for addressing disobedience. Eight parent-child pairs with depressed preschoolers had substantial reductions in depression severity ratings when PCIT-ED was administered. However, given the results were preliminary and this open study utilized a small sample, a randomized controlled experiment is required to support the drawn conclusions. A more typical baseline profile of baseline affective functioning in natural settings (lower NA and higher PA) and time with parents could serve as a foundation for treatment response in children, according to research using ecological momentary assessment of NA, PA, and companions in natural settings [25].

Critical issues

The methodological aspects of the studies discussed in this review must also be highlighted because methodological inconsistencies make it difficult to compare and extrapolate the findings across studies. The majority of research used small samples, which emphasizes the significance of evaluating the consistency of the outcomes. Other methodological flaws included the lack of control groups, among others. Even while the authors claim that these peculiarities had no impact on the results, it's feasible that they will make it more difficult to generalize and reproduce the findings. It is interesting that there is little experimental research on childhood depression, which may be due to ethical limitations on child subjects in studies, since just two experimental studies were discovered in the present study. The negative consequences of depressive diseases on children's quality of life are frequently highlighted in recent scientific studies on paediatric depression, either directly or indirectly. Sadly, the findings of the research suggest that children depression commonly arises in environments of vulnerability and poverty, where personal and social needs connected to childhood depression are routinely disregarded. This investigation shown that childhood-onset depression commonly causes a variety of psychiatric issues and co-morbidities, failing to act as a warning to families to seek help while it is still feasible to swiftly improve the children's poor mental health.

Even though there has been an increase in interest in this subject, many of the publications found also indicated that human resources, such as the general healthcare team, are still not appropriately prepared to handle paediatric depression. In light of this, it is crucial to conduct additional research on the development of programs that effectively prepare healthcare professionals to deal with childhood depression directly or indirectly in the clinical setting, as well as how to identify and treat the illness to stop its negative effects. Placebo effects exceed even pharmacological therapies, according to studies on the therapy of paediatric depression. Because the closeness of the contact between the child and the therapist increases the child's sense of self and their identification with the adult, which helps in reestablishing attachment and security seeking, the role of a therapist is even more crucial in psychosocial treatments. The effects of therapeutic alliance are more prominent in children and adolescents than in the adult population. In particular, the impact of traumatic events is not fully absorbed until a young age, and depressed moods are more sensitive to relationship modifications than fundamental adult cognitions. Children also have different risk and developmental factors than do adults. Since the psychopathology of depression as a whole differs from that of anxiety or other disorders more among young people, the treatment of depression is more vulnerable to

nonspecific factors like the relationship with the therapist. There are several reasons why young people experience stronger placebo effects [26]. For example, the therapist's "positive mirror" aids children in developing transference more effectively. The child is able to reestablish his or her feeling of value and confidence in the adult world without the clinician's therapeutic position.

All psychotherapies strive to change depressing interpretations into uplifting ones, hopelessness into optimism, fear into bravery, helplessness into mastery. Young people are more responsive to the fundamental safety because of this. Meta-Cognitive therapy (MCT) is gaining popularity as a treatment for mental health problems. The self-regulatory executive function model, which serves as the theoretical underpinning of MCT, claims that psychopathology is brought on by the cognitive attentional syndrome (CAS), a persistent thinking pattern. People utilize the CAS, or dysfunctional coping strategies, to try to manage distressing thoughts and feelings. Numerous clinical investigations have examined and shown the efficacy of MCT [27]. In order to prevent severe depressive episodes from repeating, John Teasdale, Zindel Segal, and Mark Williams first developed the most well-known treatment, mindfulness-based cognitive therapy (MBCT) [28]. In order to reduce the recurrence of depression, MBCT combines elements of cognitive therapy with mindfulness training. Mindfulness practices are used to help people notice a fall in mood without instantly passing judgment or responding to it. With this increased self-awareness, cognitive therapy principles are then employed to assist individuals in escaping negative, repetitive thinking patterns that feed depression symptoms. Studies looking at the influence of a person's moderators on treatment outcomes have also shown that MBCT may be most effective in avoiding relapse among people who are most at risk for doing so.

Impact of Covid-19 and Mental Health

In March 2020, COVID-19 was deemed a pandemic, prompting lockdown requests from several nations throughout the world. The goal of this study was to evaluate the literature on the impact of lockdown procedures implemented in response to the COVID-19 outbreak on young people's mental health. Lockdown techniques and children's mental health are incompatible, according to longitudinal data from a UK research. They specifically observed a statistically significant increase in depression ratings with a medium-to-large effect size. Their findings emphasize the need of considering the possible impacts of lockdown on children's mental health while planning the continuing response to the global pandemic and the recovery from it [29]. Significant risk factors for anxiety included special needs, the existence of mental problems prior to the lockdown, as well as excessive media exposure. Parent-child interaction was protective against sadness and anxiety. The COVID-19 lockdown has caused psychological suffering and drawn attention to vulnerable populations, such as individuals who have had or are now experiencing mental health issues. The most important thing is to help vulnerable kids and teenagers with their mental health issues. It is necessary to create clinical recommendations to lessen the consequences of the COVID-19 lockout as well as public health initiatives to assist this group [30].

CONCLUSION

The purpose of this paper is to present a comprehensive analysis of 'childhood depression'. On the basis of literature review and projections for the future, legitimate concerns are assessed, including any constraints that are in place as well as potential growth areas in the next years. Understanding human health and illness in all of its interconnections is crucial, and this is emphasized strongly by the biopsychosocial approach employed in our training programs. According to the biopsychosocial perspective, a complex phenomenon or event may have numerous causes. This aims to inform readers on the serious societal problem of childhood depression. It also supports the use of various forms of therapy and treatment, such as medication, cognitive behavioural therapy, individual psychodynamic therapy, and family therapy, for children who exhibit varied degrees of depression.

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