

Risk Factors in Depression and Anxiety Disorders from the Framework of Developmental Psychopathology

Gelişimsel Psikopatoloji Çerçevesinden Depresyon ve Anksiyete Bozukluklarında Risk Faktörleri

© Ceren Gökdağ¹, © Rukiye Kızıltepe²

¹Manisa Celal Bayar University, Manisa

¹Pamukkale University, Denizli

ABSTRACT

Depression and anxiety disorders are among the most prevalent psychiatric disorders that negatively affect individuals' life in many ways. Understanding how these highly comorbid emotional disorders develop and persist might guide prevention, intervention, and treatment studies. Some common vulnerability factors underlie depression and anxiety disorders. Developmental psychopathology deals with these vulnerabilities and risk factors from a lifetime perspective. The aim of this review is to present the risk factors associated with depression and anxiety from the perspective of developmental psychopathology. For this purpose, we discussed genetic and biological factors, temperament, negative childhood experiences, family and peer relationships, and some cognitive and emotional factors as risk factors. Also, we discussed how these risk factors lead to depression and anxiety disorders. This review emphasizes that some common transdiagnostic risk factors underlie emotional disorders and highlights the importance of a developmental psychopathology perspective to understand the developmental pathways of depression and anxiety disorders.

Keywords: Depression, anxiety, developmental psychopathology, risk factors

ÖZ

Depresyon ve anksiyete bozuklukları kişilerin hayatını birçok açıdan olumsuz etkileyen en yaygın görülen psikiyatrik bozukluklardandır. Eş tanılanma oranının fazla olduğu bu bozuklukların nasıl geliştiğini ve sürdüğünü derinlemesine incelemek ve anlamak, önleme, müdahale ve tedavi çalışmalarına rehberlik etmektedir. Duygusal bozukluklar olarak anılan depresyon ve anksiyete bozukluklarının altında ortak bazı yatkınlık faktörlerinin yattığı düşünülmektedir. Gelişimsel psikopatoloji bu yatkınlık ve risk faktörlerini yaşam boyu bakış açısıyla ele almaktadır. Bu gözden geçirme çalışmasının amacı gelişimsel psikopatoloji bakış açısıyla depresyon ve anksiyete ile ilişkili risk faktörlerini incelemektir. Çalışmada risk faktörleri olarak genetik ve biyolojik faktörler, mizaç, çocukluk dönemi olumsuz yaşantıları, olumsuz aile ve akran ilişkileri ve bazı bilişsel ve duygusal faktörler ele alınmıştır. Söz konusu risk faktörlerinin depresyon ve anksiyete bozukluklarına nasıl zemin hazırladığı tartışılmıştır. Bu gözden geçirme çalışması, duygusal bozuklukların altında tanılar üstü bazı ortak risk faktörlerinin yattığını vurgulamakta, depresyon ve anksiyete bozukluklarının gelişimsel yollarını anlamak için gelişimsel psikopatoloji perspektifinin önemine işaret etmektedir.

Anahtar sözcükler: Depresyon, anksiyete, gelişimsel psikopatoloji, risk faktörleri

Introduction

Depression and anxiety disorders, adversely affecting the individual in particular and society in general, are widespread psychiatric problems with increased comorbidity, which has led these disorders to be addressed together in recent years (Barlow 1991, Bullis et al. 2019). Depression and anxiety are now considered projections of a whole and scrutinized for underlying etiological and maintenance factors, mainly due to the influence of the transdiagnostic approach that advocates shared predisposition factors underlying mental disorders and aims to design standard treatment protocols (Harvey et al. 2004).

The present review study attempts to convey the common predisposition factors for depression and anxiety disorders from a developmental psychopathology perspective. Developmental psychopathology may be conceived of as a study of physiological and psychological health in a developmental context and from a life-span

perspective (Masten 2006) and explores developmental processes underlying disorders. Even though it considers risk factors separately for each condition, we contextualize developmental risk factors for both disorder groups in this review study since depression and anxiety often appear together and share common processes, as indicated by the transdiagnostic approach. In terms of developmental psychopathology, both risk factors and protective factors are important in the development of disorders. Identifying risk factors and carrying out prevention studies or determining protective factors and promoting one's such characteristics mean much for both the prevention and treatment of psychological problems. Yet, one of the fundamental steps for preventing an emerging problem or explaining its developmental processes seems to identify risk factors first (Obradovic' et al. 2012). Cicchetti (1994) argues that risk factors outweigh protective factors for the emergence of maladjustments and that protective factors are no longer sufficient to hinder the adverse effects of risk factors. Upon the argued importance of addressing risk factors, we examine developmental risk factors for depression and anxiety disorders. In this respect, we first give a brief insight into these disorders and their coexistence, then present the definition and basic principles of developmental psychopathology, and finally discuss a common set of developmental risk factors for depression and anxiety.

Depression and Anxiety Disorders

Depressed mood, characterized by feeling unhappy, depressed, sad, guilty, and worthless, inability to have pleasure, changes to appetite, sleep problems, decreased sexual desire, and attention and memory problems, turns into major depression when becoming an episode (American Psychiatric Association 2013). Although major depression was historically referred to under diverse categories and names in diagnostic systems, it is clustered under depressive disorders in the current diagnostic system (American Psychiatric Association 2013). It is known that the lifetime prevalence of major depression, one of the most common mental disorders, reaches 20% and that it recurs frequently and, therefore, brings many undesirable consequences (Gotlib and Hammen 2008).

As a diagnostic category, anxiety disorders are a cluster covering many sub-diagnoses. Anxiety disorders characterized by fear, distress, and worry often host symptoms such as being alert, freezing, or avoiding, as well as physical symptoms (e.g., muscle tension, dry mouth, and sweating) (American Psychiatric Association 2013). Anxiety disorders are among the most prevalent mental problems with diagnoses such as generalized anxiety disorder, specific phobia, social phobia, and panic disorder. Bandelow and Michaelis (2015) showed that the lifetime prevalence of all anxiety disorders ranges from 11% to 34%. Specific phobia, social phobia, panic disorder, and generalized anxiety disorder are known to be the most common and comorbid disorders, respectively (Kessler et al. 2010).

Depression and anxiety are frequently seen together. Even though comorbidity is a major problem in psychiatry (Kendall and Clarkin 1992), the relevant research documented that 28% of people with any clinical disorder meet two or more diagnostic criteria throughout their lives and that the most common comorbid diagnoses are depression and anxiety disorders (Kessler et al. 2005). It was found that the majority of those with anxiety disorders also meet the diagnosis of major depression (Mineka et al. 1998). Similarly, most people with depression fall into the diagnostic criteria for anxiety disorders (Brown et al. 2001). As a matter of fact, the symptoms of these disorders may mimic each other. Negative mood, feeling helpless and hopeless, being alert, low energy, slow reactions, sleep problems, difficulty in attention and focusing, ruminative thinking, and problems in regulating emotions may be counted as common symptoms among people with depression and anxiety (Maser and Cloninger 1990). The high comorbidity of depression and anxiety disorders has prompted scholars to delve deeper into these conditions and understand the commonality, ultimately highlighting the transdiagnostic approach. This contemporary approach argues that some shared susceptibility factors and maintenance characteristics underlie mental problems and, thereby, focuses on developing standard treatment models for different problems (Harvey et al. 2004, Mansel et al. 2013, Gökdağ and Kaçar-Başaran 2022). Accordingly, the high rate of comorbidity of depression and anxiety disorders brought these problems to be considered together from a transdiagnostic approach (Fusar-Poli et al. 2019), and these two diagnostic categories were previously discussed as a whole under emotional disorders (Barlow 1991, Mathews and MacLeod 2005).

Considering the background above, the question "How is it/develops?" becomes more significant to be responded to than the question of "What is it?" Seeking a grounded answer to the first question then makes it possible to carry out prevention and intervention studies before any psychopathologies occur. A substantial number of theories, models, and studies have focused on this question to date; one of them is developmental psychopathology.

Developmental Psychopathology

For many years, scholars in different disciplines have sought to understand the causes, nature, and course of psychological disorders (Sroufe and Rutter 1984, Zeman et al. 2019). Developmental psychopathology, on the other hand, emerged as an autonomous discipline in the 1970s, separating from fields such as child clinical psychology and psychiatry that target to present an understanding and explanation for psychopathology (Cicchetti 1984, Sroufe and Rutter 1984). Despite the differences, developmental psychopathology synthesizes the perspectives blossoming in these disciplines and adopts a life-span perspective to illustrate psychopathology and typical development (Cummings and Valentino 2015).

The literature is full of different conceptualizations of developmental psychopathology (see Sroufe and Rutter 1984, Rutter 1988); yet, developmental psychopathology is fundamentally a scientific field to understand and explain the interaction between the biological, psychological, and social aspects of typical and atypical development from a life-span perspective (Cicchetti 1993, Cicchetti 2000). Masten (2006) reviewed all definitions of developmental psychopathology and stated that it could be defined as the study of physiological and psychological health in a developmental context. To put it another way, developmental psychopathology considers psychopathology not a disorder but a deviation from adjustment and focuses on the association between adaptive and maladaptive behaviors and the processes leading to such behaviors from a developmental perspective (Sroufe 1989, Cicchetti 2013).

Developmental psychopathology emphasizes the significance of exploring the biological, individual, familial, social, and cultural factors and the interactions among these factors that may lead one to either problems and maladjustments or resilience (Toth and Cicchetti 2010, Cummings and Valentino 2015). Hence, it adopts a multifaceted and dynamic approach to address risk factors, protective factors, and their dyadic interactions that regulate a developmental course (Sroufe 1997, Cicchetti and Cohen 2006, Masten 2006). While risk factors are defined as those that adversely affect one's growth and contribute to the risk of psychopathology, protective factors are the features promoting one's healthy development and keeping them away from psychopathology (Kerig et al. 2012). The interaction of risk and protective factors at different contexts and levels during development is closely linked with the heterogeneous nature of development and psychopathology. The two fundamental principles of the developmental psychopathology approach are the existence of varying risk and protective factors and the consequent diversity of adjustment problems (Klahr et al. 2012, Cicchetti 2013). Equifinality refers to that different developmental pathways and risk factors may lead to the same maladjustment or behavioral outcomes (Masten 2006, Klahr et al. 2012). For example, as mentioned in the section below, many different risk factors at the individual or societal level (e.g., genetic anomalies, insecure attachment, witnessing domestic violence, poverty) can lead to depression. Multifinality, on the other hand, indicates that a risk factor or developmental pathway may be associated with different developmental outcomes (Masten 2006, Klahr et al. 2012). However, different developmental outcomes vary depending on the individual characteristics of the child and adolescent and their environments (Kerig et al. 2012). In other words, the nature of developmental psychopathology highlights multiple pathways to adjustment and maladjustment from a developmental perspective and the interaction between the risk and protective factors predisposing to these developmental pathways.

Risk Factors for Depression and Anxiety from a Developmental Psychopathology Framework

This section discusses developmental risk factors for depression and anxiety disorders, also known as emotional disorders. Below is a brief but clear presentation of hereditary and biological characteristics, temperament characteristics, adverse experiences in childhood, family and peer relationships (attachment, parenting, and peer relationships), and how some cognitive and emotional processes pave the way for the development of emotional disorders.

Hereditary and Biological Characteristics

Recent years have witnessed a plethora of studies investigating the hereditary origins of depression and anxiety. Accordingly, behavioral genetics studies (i.e., family, twin, and adoption studies) show that genetic factors have an important place in the emergence of anxiety and depression (Middeldorp et al. 2005). A meta-analysis study examining the hereditary roots of depression concluded that the risk of depression was about three times higher in first-degree relatives of the patients with a depressive disorder when compared to the control group (Sullivan et al. 2000). In another study on the genetic origins of anxiety, Hettema et al. (2001) found that the probability

of having an anxiety disorder varied between 4 and 6 times in the first-degree relatives of those with anxiety disorders than of control group. In parallel with these findings, twin studies also emphasize genetic characteristics. For example, the previous research reported that the risk of developing anxiety or depression is greater in identical twins than in other siblings (Sullivan et al. 2000, Gordon and Hen 2004, Hettema 2008). Besides, there has been a growing interest in the interaction of genes and the environment in recent years. In general, findings from behavioral genetics emphasize that the non-shared environment plays an essential role in depression and anxiety, as well as the known contributions of genes (Penner-Goeke and Binder 2022). In this regard, Triantafyllou et al. (2022) documented that genetic predisposition contributes to the development of depression symptoms by 33% and the non-shared environment by 67%.

There are also remarkable findings regarding the neurobiological processes underlying anxiety and depression. One of the first explanations for the neurobiological factors of depression is associated with serotonin deficiency (Albayrak and Ceylan 2004). However, current research indicated that serotonin deficiency alone does not raise an adequate explanation for depression (Cowen and Browning 2015). Kerig et al. (2012) reported that serotonin deficiency is not the cause of depression but causes increased susceptibility to other psychiatric disorders besides depression. Another explanation is related to irregularities in the hypothalamic-pituitary-adrenocortical (HPA) axis. It is often uttered that irregular activation in the HPA axis is associated with depression and anxiety (Varghese and Brown 2001, Gülseren 2004). Yet, Menke (2019) reported that not all with depression suffer irregularities in the HPA axis and, therefore, cannot benefit from treatments targeting the HPA axis. Nevertheless, it is more widely accepted in the literature that neurotransmitter systems interact with each other. For example, for many years, the treatment of depression and anxiety has targeted three monoaminergic neurotransmitter systems (serotonin (5-HT), norepinephrine (NE), and dopamine (DA)) that assume critical roles in the regulation of emotions (Hamon and Blier 2013, Lima-Ojeda et al. 2018). In recent studies, regulators targeting the glutamatergic system (e.g., ketamine and esketamine) were reported to be effective in mood disorders (Henter et al. 2018). Another contemporary explanation is related to GABA. It is assumed that GABA is also associated with mood disorders (Sarawagi et al. 2021), given its key role in cognitive and physiological processes (e.g., memory, stress response, attention) (Mody and Pearce 2004).

Overall, hereditary and biological characteristics may also bear risk factors for depression and anxiety disorders. Although these hard-to-control characteristics are among etiological factors, environmental features actually initiate the emergence of these genetic and biological factors' impacts. Therefore, the interaction of genes/biology and environment is far-reaching in the emergence and maintenance of depression and anxiety disorders, particularly from a developmental psychopathology framework.

Temperament

Temperament, denoted as the set of characteristics shaping one's unique behaviors, being rooted in genetic background, and becoming evident in the first years of life (Thomas and Chess 1986, Cloninger 1994, Kristal 2005), is among the factors frequently explored in the developmental psychopathology literature. Although temperament is not the only factor affecting human development, it can be effective in the emergence of developmental problems by interacting with other characteristics (Sari 2018). Temperament as a life-long fixed trait (Roberts and DelVecchio 2000), brings lifelong impacts on one's development by influencing the use of coping strategies (e.g., getting stressed being with strangers and avoiding them in response or enjoying being with strangers and, thus, approaching/seeking support), self-regulation, development of personality traits, and the formation of some experiences (Rothbart and Bates 2006).

Researchers have proposed many temperament traits so far. Since we aim to revisit the temperament traits that are closely linked with depression and anxiety disorders, this section addresses only some basic traits. Even though the previous research indicated that many different temperament traits are associated with psychopathology in both childhood and adulthood, some temperament traits indeed seem to be more prominent (see Kostyrka-Allchorne et al. 2020). It is widely agreed that negative affect, aka neuroticism, (i.e. the predisposition to feel fear, anxiety, disappointment, and sadness) is closely related to emotional problems (Antony et al. 2002, Murris and Ollendick 2005, Nigg 2006). But does this show that temperament is the only factor in emotional issues? According to Rothbart and Bates (2006), reactive temperament traits for negative emotions are not explanatory alone, but those for managing negative emotions are also important. These traits are called effortful control and defined as the ability to control or regulate emotions, impulses, and behaviors. As a matter of fact, previous studies proved that internalizing problems increase as negative affect increases and effortful control decreases (Murris and Ollendick 2005, Lunetti et al. 2022).

Recent findings also emphasized the close relationship between other temperament structures and emotional problems in addition to negative affect. A meta-analysis study examined the relationship between temperament traits in infancy, childhood, and adolescence psychopathology and found the psychopathology level was negatively correlated with the self-regulation temperament structure (includes the temperament traits that play a role in emotion regulation) and positively related to negative affect (includes temperament traits with a predisposition to feel negative emotions, as suggested by Rothbart), behavioral inhibition (covers temperament traits such as shyness, fear, and avoidance of novelty), and activity level (including the amount of physical movement and temperament traits related to impulsivity) (Kostyrka-Allchorne et al. 2020). These findings, therefore, emphasize that temperament traits associated with low self-regulation and high negative affect may be considered transdiagnostic risk factors for internalizing problems.

It should be noted that both the meta-analysis study above and some other studies addressing temperament and psychopathology emphasized behavioral inhibition. Defined as a temperament trait or reaction that allows one to withdraw or prevent themselves from new and unfamiliar situations or people, behavioral inhibition has lifelong effects (Kagan 1999). Although behavioral inhibition was shown to have a strong association with anxiety disorders in childhood and adulthood (Rosenbaum et al. 1993, Gladstone et al. 2005), it was also reported to be a risk factor for depression (Gladstone and Parker 2005). Liu and Pérez-Edgar (2019) highlighted behavioral inhibition as a risk factor for emotional problems through some neural, cognitive, and environmental characteristics. It was found that excessive activation in the amygdala with behavioral inhibition, cognitive mechanisms (e.g., some attentional biases against negative stimuli), and some negative parenting styles (e.g., overprotective) may cause emotional issues.

As mentioned, other factors interacting with temperament traits also pave the way for emotional problems; parenting is one of them. Temperament traits can affect parenting, as well as the parenting style that the child is exposed to may affect the emergence of temperament or temperament-related traits, which may cause emotional problems (Kiff et al. 2011). For example, the parent of a child with a difficult or emotionally unappealing temperament may be overly controlling or apathetic in keeping the child balanced. Thus, the child exposed to excessively controlling, apathetic, or harsh parenting will likely exhibit maladaptive behaviors, have difficulty regulating their emotions, and show psychological problems. On the other hand, an overprotective or intrusive parenting style that a child with high behavioral inhibition is exposed to also increases the risk of their behavioral avoidance on emotional problems (Liu and Pérez-Edgar 2019). Temperament can sometimes become a risk factor for emotional problems alone, but mostly in interaction with other characteristics and elements. This reflection of temperament also shows up in the emotional problems of adulthood.

The impacts of adult temperament traits on psychopathology are mainly demonstrated through the temperament traits defined in Cloninger's psychobiological personality model (Cloninger et al. 1993). Harm avoidance among these traits is defined as one of the biological aspects of personality, characterized by being pessimistic, anxious, nervous, and shy, low tolerance for uncertainty, and behavioral inhibition (Cloninger et al. 1993). Many cross-sectional studies revealed that harm avoidance is strongly correlated with depression (Nery et al. 2009, Gökdağ and Arkar 2016, Kaçar-Başaran et al. 2019) and anxiety disorders (Liotta 2013, Gürdal et al. 2018). A comprehensive longitudinal study showed that harm avoidance and pessimism are related to both depression and anxiety disorders (Nyman et al. 2011). In a meta-analysis study, harm avoidance was discovered to be highly correlated with depression and anxiety disorders beyond the other three temperament traits in the model (Miettunen and Raevuori 2012). In addition to those in Cloninger's model, a recent study emphasized the transdiagnostic nature of inhibited temperament, defined as fearful and avoidant toward novelty, and found it to be closely related to depression and anxiety disorders (Feola et al. 2020).

The literature focusing on individual differences in adulthood also considers some personality-related aspects as temperament traits. Neuroticism (negative affect) and extraversion (positive affect), which are two personality traits with solid relationships with psychopathology, are also referred to as the "big two" (Watson et al. 2005). These traits that are closely linked with emotional experience share common and similar implications for both depression and anxiety disorders. Neuroticism and extraversion are accepted as the precursors of some negative and positive individual differences, respectively, and both play an essential role in the path to emotional disorders (Clark and Watson 1991, Watson et al. 2005, Norton and Mehta 2007). However, the role of neuroticism seems to be more prominent in this relationship. Griffith et al. (2010) showed that neuroticism showed a low correlation with externalizing disorders ($r = .29$) but almost overlapping with internalizing disorders ($r = .98$). In addition, neuroticism is known to be a strong predictor of the comorbidity of depression and anxiety (Khan et al. 2005, Xia et al. 2011).

To sum, temperament traits are developmental characteristics starting from infancy and persisting throughout life and can be considered a common risk factor for depression and anxiety disorders. In particular, high levels of negative affect, harm avoidance, and behavioral inhibition and low effortful control are referred to as risk factors for the development of depression and anxiety. These traits can also become risk factors by paving the way for the emergence of other traits to be potential risk factors (e.g., negative parenting, difficulties in emotion regulation, or repetitive negative thinking) or by boosting their effects.

Adverse Childhood Experiences

The short- and long-term impacts of childhood experiences have been addressed since the earliest works of psychology. The experiences starting from fertilization may have significant effects on subsequent physical and mental health (Center on the Developing Child at Harvard University, 2010). While positive experiences bring lifetime gains, adverse ones can end up with devastating consequences on a large scale, such as psychopathology. In this regard, the literature hosts studies attempting to reveal the relationship between adverse childhood experiences and psychopathology in childhood, adolescence (Kızıltepe et al. 2020, Rowell and Neal-Barnett 2021), and adulthood (e.g., Kessler et al. 1997, 2010). In general, such experiences were said to be an eminent predisposition factor for depression and anxiety (Young et al. 1997).

Primary adverse childhood experiences that are related to psychopathology can be counted as neglect and abuse, parental psychopathology, loss of parents, divorce of parents, family members' involvement in crime, prolonged separation from family, physical disorders, and financial difficulties. Parental psychopathology is particularly seen as a risk factor for the child to develop psychopathology (Lieb et al. 2000). Parental mental health problems also threaten the emotional stability of the child or adolescent, leading to some cognitive, emotional, and behavioral predispositions in the child and, thus, making the child vulnerable to mental problems (Goodman and Brand 2008). Losses, such as prolonged separation from caregivers (Brietzke et al. 2012) and the death of one of the parents (Conway et al. 2010), also adversely affect the child's behaviors and pose a risk for emotional problems. Moreover, the effects of these adverse events are thought to persist into adulthood. A study by Kessler et al. (2010) with a large clinical sample documented that 25% of adults with psychological problems had a history of loss.

In addition to the risk factors above, a significant and widespread risk factor for depression and anxiety in childhood and adolescence is the parents' divorce (Sands et al. 2017). Considering the rise in divorce rates in recent years, more and more children face their parents' divorce every year. The literature showed that children and adolescents with divorced parents are at risk of developing depression and anxiety compared to their peers with parents living together (Hoyt et al. 1990, Aro and Palosaari 1992, Salahian et al. 2021). However, rather than the direct effect of the divorce, some other child- and parents-related characteristics (e.g., the child's temperament or coping skills and parents' mental state or changing their parenting style) and some undesirable life events (e.g., witnessing the intra-familial conflict before and after the divorce, financial difficulties, and not seeing one of the parents anymore) contribute to the risk of psychopathology (Amato 1994, Sevi Tok 2020, Avci et al. 2021).

It was consistently demonstrated in the literature that stressful life events are likely to lead to the onset and maintenance of both depression and anxiety (Kessler 1997, Kendler et al. 1999, Young and Dietrich 2015). It is also known that the risk of depression and anxiety is doubled as the number of cumulative and chronic stressful life events increases (Young and Dietrich 2015, Su et al. 2022). Yet, some studies discovered that the probability of onset of anxiety or depression differs by type of stressful life events (Finlay-Jones and Brown 1981, Eley and Stevenson 2000). For example, Finlay-Jones and Brown (1981) reported that stressful life events related to losses were linked with the onset of depression, but those related to danger were correlated to the onset of anxiety. In the same study, it was found that people with both depression and anxiety were more likely to report life events related to danger and loss together.

Scrutinized with emotional problems more in the literature, adverse childhood experiences are indeed child neglect and abuse, which are also referred to as childhood traumas. Chronic childhood traumas are considered within the etiological features of psychopathology (Benjet et al. 2010). Empirical findings showed that neglect and abuse are robustly associated with childhood and adulthood problems (e.g., Green et al. 2010, Kessler et al. 2010, Jaffee 2017). A substantial body of research indicated that individuals with depression and anxiety disorders share overlapping childhood traumas (e.g., Örsel et al. 2011, Wang et al. 2019, Gökdağ, 2020), that those with comorbidities have more childhood traumas (e.g., Gökdağ 2020, Safren et al. 2002, Hovens et al. 2010), and that the high incidence of childhood traumas elevate the co-occurrence of depression and anxiety

(Widom et al. 2007, Simon et al. 2009). These results may then refer to the transdiagnostic nature of childhood traumas.

Despite not directly, childhood neglect and abuse pave the way for adult emotional problems by facilitating the occurrence of other adverse features (Nolen-Hoeksema and Watkins 2011, McLaughlin et al. 2020). These adverse experiences may cause emotional issues by disrupting one's emotional processes (e.g., emotional reactivity or difficulty in emotion regulation), cognitive processes (e.g., ruminative or repetitive thinking), and social information processing (e.g., threat perception, negative attribution) (McLaughlin et al. 2020). Child abuse and neglect may initiate a predisposition to psychopathology by adversely affecting the functions of brain development (McCrorry et al. 2012) and interacting with more negative familial and environmental conditions (e.g., Kim and Cicchetti 2010, Sperry and Widom 2013, Lippard and Nemeroff 2019). Therefore, early adverse incidents may trigger the development of other adverse susceptibility factors and make one vulnerable to emotional problems. However, recent findings revealed that childhood traumas affect not only the victim but also other generations (Buss et al. 2017, Kızıltepe 2021, Russotti et al. 2021). For example, the childhood abuse and neglect experiences of parents increase the probability of their children exhibiting depression and anxiety (Jovanovic et al. 2011, Su et al. 2022). It should be noted that it may happen in the case of the intergenerational transmission of the risk factors that parents were exposed to during childhood and the interactions of the adverse effects of parents' exposure to these negative experiences. For example, Russotti et al. (2021) found that the mother's history of abuse and neglect increases her depression and abuse and neglect behaviors towards her child, which, in turn, contributes to the adolescent's internalization and externalization problems. Thereby, adverse experiences by parents or other caregivers, as well as adverse childhood experiences, are determined to be risk factors for intergenerational transmission and depression and anxiety.

In summary, stressful life events in childhood or adolescence and the individual, familial, or environmental consequences of these events may hinder one's many developmental areas and may predispose them to psychopathology. These life events can also undermine the coping skills of children and adolescents, disrupt their emotion regulation processes, or exacerbate the effects of other existing developmental risk factors.

Family and Peer Relationships

The developmental psychopathology approach acknowledges early life experiences in maladjustments such as depression and anxiety (Sroufe et al. 1999). It is known that the attachment with the caregiver in the first years of life rather affects other developmental periods (Bowlby 1973). The attachment and interaction with caregivers initiate internal working models shaping one's expectations, beliefs, and attitudes about self, the world, and others (Bowlby 1969, Kesebir et al. 2011). Internal working models also forge one's emotional and behavioral responses to a situation and touch cognitive evaluations of interpersonal events (Bowlby 1969, Lee and Hankin 2009). When their needs are consistently and sensitively satisfied, a child perceives themselves as valuable and have a positive self-image. Since perceiving others as reliable and accessible, their internal working models turn positive, which lays the foundation of secure attachment. In the opposite case, the child may develop a negative self-image. Internal working models become negative, which leads to insecure attachment (Belsky and Fearon 2002, Sakman and Sümer 2018).

People with insecure attachment patterns due to early experiences are at risk of developing depression and anxiety (Blatt and Levy 2003, Egeland and Carlson 2004, Sümer et al. 2009). Insecure attachment is often shown as a risk factor for anxiety and depression not only in childhood and adolescence (e.g., Colonesi et al. 2011, Spruit et al. 2020) but also in adulthood (Wautier and Balter Blume 2004, Van Assche et al. 2020). However, it is emphasized that insecure attachment does not directly cause psychopathology but that one with insecure attachment is more likely to follow certain developmental paths compared to other paths (Lee and Hankin 2009). It was previously claimed that insecure attachment is associated with risk factors on the path to psychopathology (Mikulincer and Shaver 2007). In other words, there are a number of mediating factors between insecure attachment and psychopathology in adulthood. Roberts et al. (1996) proposed that insecure attachment causes depression by ruining self-esteem. Although insecure attachment is considered a risk factor for psychopathology, some studies suggested conflicting findings regarding the relationship between attachment dimensions and depression and anxiety (Sümer et al. 2009, Zheng et al. 2020). For example, a meta-analysis concluded that while depression was weakly associated with avoidant attachment, it was vice versa with attachment anxiety (Zheng et al. 2020). To sum, developmental psychopathology sees the attachment with parents or the caregiver in the early stages of development as a risk factor for depression and anxiety and highlights the significance of parental characteristics and interaction with parents in the emergence of maladjustments.

The previous research suggested that parental characteristics are effective in maladjustments extending to adulthood and with an onset in adulthood (Rothrauff et al. 2009, Spokas and Heimberg 2009). In this regard, many studies emphasized the relationships between parental characteristics depression and anxiety in childhood and adolescence (see Romero-Acota et al. 2021, Yalçın and Özdemir 2021). For example, children of overprotective, negligent, or authoritarian parents are at risk of depression and anxiety (Spokas and Heimberg 2009, Ebrahimi et al. 2017, Hock et al. 2018). Parents' critical attitudes and rejection are also prominent risk factors for depression and anxiety symptoms/problems among children (Rapee 1997, Anhalt and Morris 2008, Direktör and Çakıcı 2012). Exposure to negative parenting may predict emotional disorders in adulthood. Gökdağ (2020) showed that adults with depression and anxiety disorders had a similar level of negative perceived parenting (low care/warmth, high overprotection) in their childhood and that this level was higher than in the healthy control group. From a developmental psychopathology perspective, since exposure to such forms of parenting would end up with not meeting the child's needs or hindering their autonomy in their developmental tasks, it is likely to affect the child's cognitive and emotional characteristics (i.e., leading them to develop a negative belief system or adopt more cognitive distortions), which then predisposes to depression and anxiety symptoms (Shah and Waller 2000, Stack et al. 2010). For example, it is known that authoritarian parenting harms children's self-image (Singh 2017). Since children and adolescents are not welcome to express and share their feelings in harsh and authoritarian families, it is more likely that the children of such families have ineffective coping skills and difficulties in emotion regulation (Wolfradt et al. 2003, Goagoses et al. 2022). In addition, parental psychopathology predisposes children and adolescents to psychopathology through learning processes (e.g., imitation or modeling) or arranging their environments (Dodge 1990). To put it another way, children can model both their parents' psychopathology symptoms and the ineffective emotional and cognitive features leading to their psychopathology.

In addition to parental characteristics, toxic peer relationships in childhood and adolescence (e.g., exclusion, discrimination, and rejection) are also associated with depression and anxiety (e.g., Russell et al. 2012, Platt et al. 2013). Nevertheless, the relevant literature frequently emphasizes that bullying is a marked important risk factor for depression and anxiety (Smokowski and Evans 2019, Kızıltepe et al. 2020). Bullying not only hinders development during childhood and adolescence but also leads to a predisposition to many psychopathologies in adulthood (Gladstone et al. 2006, Smokowski and Evans 2019). This view is also supported by the findings that adults exposed to peer bullying during childhood and adolescence are at risk for depression and anxiety (Winding et al. 2020). Interestingly, the previous research showed that bullies and bystanders, as well as victims, report depression and anxiety symptoms (Tural Hesapçioğlu et al. 2018, Midgett & Dumas, 2019). In brief, families and peers with whom children and adolescents are in direct contact are considered key in the initiation and maintenance of depression and anxiety with their functional and structural characteristics.

Cognitive and Emotional Factors

Cognitive characteristics (e.g., negative thoughts, beliefs, or thinking styles) and emotional processes indicating how one approaches or deals with their emotions can also become developmental risk factors for depression and anxiety disorders (Garber and Rao 2014, Vasey et al. 2014). This section lists some cognitive and emotional factors that can be considered risk factors for emotional disorders.

The cognitive model of depression (Beck et al. 1979, Beck 2008) proposes some cognitive mechanisms driving one to depressive symptoms. Among them, there are cognitive schemas that start to develop in the early period and include negative beliefs about oneself, the future, and the world. According to Beck (1967), negative cognitive schemas and dysfunctional attitudes, including beliefs such as loss, failure, and worthlessness, make it difficult for one to cope with stress and exacerbate depressive symptoms. Such cognitive mechanisms begin to develop in early childhood, become permanent in adolescence, and then affect one throughout life (Beck et al. 1979, Young et al. 2003). It should be noted that these cognitive mechanisms interact with the other risk factors touched upon above. For instance, exposure to early negative experiences and toxic parenting, insecure attachment patterns, and some temperament traits are considered risk factors for dysfunctional cognitive schemas and beliefs (e.g., Young et al. 2003, Morris et al. 2014, Gökdağ and Arkar 2016). These cognitive mechanisms are not only risk factors for depression but also mediate the development of anxiety disorders (e.g., Lee and Hankin 2009, Hawke and Provencher 2011). In particular, self-efficacy, loss of control, anxiety sensitivity, negative interpretation of uncertainty, and anxiety-provoking beliefs about thoughts are recognized as risk factors for anxiety disorders (e.g., Wells 1995, Riskind and Williams 2005, Muris 2007). Whether specific to depression or anxiety, these negative beliefs begin to develop in the early period and affect one's both current mood and psychological state in adulthood. When encountering a situation that triggers these beliefs, one may

develop some negative automatic thoughts that are the reflection of these beliefs. If these thoughts are out of control, their emotional symptoms then start to occur (Clark and Steer 1996, Dozois and Dobson 2010).

Some emotional characteristics may become risk factors for depression and anxiety. In particular, how one responds to emotions and how difficulties they experience in emotion regulation can be counted among these. The concept of emotion regulation, which was initially defined in the developmental psychology literature, is defined as a process from the emergence of emotional reactions to their end, that is, as a complex process pointing to how to experience and show emotions, and has been discussed as a concept that directly affects psychological problems in the clinical psychology and psychopathology literature for the last 30 years (Thompson 1991, McRae and Gross 2020). Difficulties in this process (e.g., inability to recognize and not acknowledge emotions, adopting inefficient or inappropriate strategies in regulating emotions, and demonstrating impulsive reactions) contribute to one's negative emotions and, in turn, adversely affect their psychological state (Gratz and Roemer 2004).

The development of emotion regulation dates back to the first years of life. While one's emotions are regulated by the caregiver's responses in the first years of life, they gradually begin to grasp the connection between events and psychological states and emotions in the following years, and then emotion regulation is accelerated thanks to socialization. Emotion regulation is indeed dynamic and open to transformation throughout life (Thompson and Goodman 2010). One needs to recognize that the family environment and the events exposed by the child are critical in this development process since the child acquires emotion regulation skills by observing their environment, their parents' reactions and emotion socialization, and family climate (Morris et al. 2007). Although many previous studies revealed the robust relationship between difficulties in emotion regulation or the use of dysfunctional strategies and psychopathology in childhood, adolescence (see Compas et al. 2017), and adulthood (see Aldao et al. 2010), what deserves attention is that the link between the variables above and depression and anxiety disorders. It is known that those with depression or anxiety disorders use more rumination and avoidance strategies and less cognitive reappraisal strategies when regulating their emotions (Aldao et al. 2010). In this regard, it was discovered that less use of reappraisal predicts future depression and anxiety symptoms (Brewer et al. 2016). On the other hand, research findings showing that people with depression or anxiety disorders have similar difficulties in regulating their negative emotions indicate that difficulty in emotion regulation is a common factor for emotional issues (e.g., Tull et al. 2009, Gürdal et al. 2018, Gökdağ 2020). Overall, emotional problems seem to arise from difficulties in the emotion regulation processes of children, adolescents, and adults. The developmental background of emotion regulation suggests that it should be referred to as a risk factor in the developmental psychopathology approach.

Discussion

The present review addresses some risk factors specific to depression and anxiety disorders, which are common psychological problems both alone and comorbid throughout life, from a developmental psychopathology perspective. In general, hereditary and biological factors, temperament traits, family and peer relationships, adverse life events, and some cognitive and emotional features are shown as major developmental risk factors for emotional problems since they are significant susceptibility factors and maintenance traits in the emergence of emotional symptoms in both children and adolescents and adults. Although addressed separately, these factors are inevitably in interactions. As mentioned above, family climate, parental behaviors, stressful life events, and temperament traits have effects on the development of emotional dysregulation. Some hereditary features may also facilitate the emergence or persistence of risk factors. Therefore, prospective in-depth studies are recommended to consider these risk factors together.

The risk factors discussed in this paper are common factors for depression and anxiety disorders. The mentioned disorders, which frequently emerge simultaneously and are characterized by similar symptoms (Maser and Cloninger 1990, Kessler et al. 2005), are also considered emotional problems. In this sense, the transdiagnostic approach aims to understand the etiological and maintenance factors of such problems and to develop standard treatment protocols for them (see Fusar-Poli et al. 2019, Gökdağ and Kaçar-Başaran 2022). The influence of this current approach has brought common risk factors for emotional problems under the spotlight in recent years and led to various models proposed for understanding how one develops these problems (e.g., Nolen-Hoeksema and Watkins 2011, McLaughlin et al. 2020). These models also consider some developmental features, such as life events, parenting styles, and early attachment patterns. These features then pave the way for developing some individual differences that are directly linked with psychopathology. Therefore, exploring common risk factors from a developmental perspective is likely to enhance our understanding of psychopathologies and help carry out more efficient prevention and intervention studies. In addition, since these risk factors are known to

not only cause developmental maladjustments in adulthood but also be transferred to future generations (e.g., Kızıltepe 2021), the risk of developmental maladjustments may be alleviated across generations thanks to effective prevention and intervention practices.

Despite these implications of understanding common risk factors, it should be noted that some features distinguish depression and anxiety disorders. Nolen-Hoeksema and Watkins (2011) also claimed some triggers to distinguish the two conditions, although uttering common risk factors underlying the diagnosis. The authors stated that, including common risk factors, loss-related life events cause depressive symptoms, while those related to threats lead to anxiety symptoms. Therefore, as it is important to gain insight into common risk factors and consider them as a whole, it is equally valuable to discover disorder-specific risk factors.

The literature consistently not only marks many risk factors at individual, familial, and societal levels when it comes to increased risk of anxiety and depression but also offers a number of protective factors against or to reduce the risk of these disorders. Active coping (Roohafza et al. 2014, Song et al. 2021), positive peer relationships (Yeh et al. 2014), presence of a trusted adult (Dooley et al. 2015), perceived social support from family and friends (Roohafza et al. 2014, McKinley et al. 2021) are some of the protective factors mentioned in the literature against depression and anxiety. Yeh et al. (2014) found that perceived support from school reduces the effect of familial risk factors on internalizing problems. Identifying protective factors, as well as risk factors, in the development of depression and anxiety is key for prevention and intervention studies. From a life-span perspective, it seems possible to reduce risk factors and promote protective factors. For example, the “FRIENDS for Life” program, one of the school-based prevention programs developed to prevent anxiety and depression, aims to increase adolescents’ problem-solving and active coping skills. In a study, it was determined that the adolescents with anxiety risk had decreased depression levels and anxiety symptoms at the end of the mentioned program (Ahlen et al. 2012). In summary, as frequently emphasized in this review, risk and protective factors interact throughout life for adjustment or maladjustment in the multifaceted and heterogeneous nature of human development.

This study is not free of limitations. First, since we aim to introduce the risk factors of depression and anxiety from a developmental psychopathology perspective, the studies included are not addressed through a systematic literature review. Second, apart from the risk factors discussed in this study, there are a number of other risk factors associated with depression and anxiety (see Fauzi et al. 2021). In addition to individual risk factors (e.g., excessive internet use (Škařupová et al. 2015) and chronic physical illness (Pinquart and Shen 2011)), exposure to political violence (Haj-Yahia 2008) and low community security (Stirling et al. 2015) may be counted among environmental risk factors for depression and anxiety. Yet, this review introduces some fundamental risk factors frequently addressed in other sources on developmental psychopathology (see Ollendick and Hirshfeld-Becker 2002, Garber and Ruo 2014, Vasey et al. 2014).

Despite these limitations, to the best of our knowledge, this review is the first to combine depression and anxiety disorders from a developmental psychopathology perspective. This study makes a comprehensive and holistic evaluation of individual, familial, and environmental risk factors, particularly genetic and biological ones. Contrary to the previous research, we also determine risk factors for depression and anxiety not only in childhood and adolescence but also in the developmental path extending into adulthood. Finally, we adopt both the transdiagnostic approach and a developmental psychopathology perspective to explain depression and anxiety, which may be considered another authentic aspect of the study.

Conclusion

Since depression and anxiety disorders bear some shared developmental risk factors, understanding these factors is believed to enhance our understanding of the nature and development of these disorders. Moreover, adopting the fundamental principles of developmental psychopathology is thought to enhance this understanding further. Therefore, further research is obviously needed to scrutinize the subject. Future research is recommended to employ a longitudinal design to empirically investigate depression and anxiety from a developmental psychopathology perspective. Moreover, more longitudinal studies are needed to establish causal relationships between risk factors and disorders, given that the literature is full of studies employing a cross-sectional design to examine risk factors in childhood and adolescence retrospectively. Besides, the previous research engaging in risk factors associated with depression and anxiety often focused on individual factors; thus, future studies may better target contextual and relational risk and protective factors. In addition to examining shared risk factors, we also think that discovering disorder-specific risk factors may be helpful. Exploring which processes related to common risk factors lead to different disorders may also be among the aims of future studies. Overall, identifying common and disorder-specific risk factors is likely to enhance the

efficiency of prevention and intervention studies. Finally, this review is believed to steer future research considering the paucity of studies on this subject in the national literature and the importance of identifying risk factors in studies in the international literature.

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