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Anxiety, Coping Strategies and Resilience among Children and Adolescents during COVID-19 Pandemic: A Systematic Review

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Abstract

COVID-19 pandemic is a global challenge that affects people's mental health worldwide. Experiencing anxiety by children and adolescents, who are vulnerable to the impact of sustained stressors during developmentally sensitive periods, can lead to long-lasting effects on their health. The article brings insight into the short and long-term consequences of the COVID-19 pandemic on the children and adolescents' mental health. The particular aim of this study is to investigate the relationship between anxiety, stress, and resilience in young individuals in the context of COVID-19. A review of the psychological effects of pandemic on children and adolescents was done using electronic databases. Most reviewed studies reported risk factors of psychosocial problems among children and adolescents during pandemics, resilience and positive coping as protective factors for the occurrence of anxiety and stress symptoms, and mediating role of parents' stress impact on children's behavioral and emotional problems. Clinical implications are discussed and additional research is suggested.

Keywords: anxiety, resilience, COVID-19, children, adolescents, mental health, pandemic effects

1. Introduction

As a result of danger, the brain responds with anxiety and anxiety behavior. In an evolutionary understanding, an anxiety reaction is aimed to avoid given threat. In fact, anxiety states may lead to adaptive behaviors, as the lack of given anxiety reaction in the event of a threat, e.g. a pandemic, could have negative consequences [1, 2]. The anxiety state and its aftermath can result desirable in numerous ways. One of them is escape or avoidance of danger, which increases the distance between the organism and the harmful factor. The anxiety state may trigger aggression towards the source of danger to neutralize it, or submissive behavior, resulting in the possibility of survival in life-threatening situations. An important factor in generating an anxiety reaction is the distance to the threat, what can be distinguished into immediate threat, perception of danger from a distance, and the presence of

risk without a specific threat. Neuroimaging studies have shown activation of more archaic brain structures (such as the paraventricular gray matter) due to immediate threat, while at a greater distance to the danger, there was enhanced activation of the ventral prefrontal cortex. The variety of anxiety states occurring in humans is mainly related to the dynamic development of the prefrontal cortex [3].

2. Pandemic as a source of anxiety

The current crisis places multifaceted burden on children. The socio-ecological impact of the pandemic, which is understood to be enormous, must be also considered. The pandemic has affected children at different levels – health, social, family and individual [4]. COVID-19 worldwide crisis causes stress, worry and helplessness among children and adolescents. A role of sensitivity to anxiety in children was emphasized. However, it is still unclear whether the sensitivity to anxiety precedes or is a consequence of fear. It may be also a two-way relationship [5].

A risk factor for anxiety disorders in children is anxiety sensitivity. A meta-analysis found that anxiety sensitivity was associated with a higher level of anxiety [6]. The research results indicated so far a significant increase in the frequency of anxiety symptoms in children and adolescents due to the pandemics. Developmental mental health problems are associated with several risk factors. They affect more often children with special educational needs, those in poor general condition, whose parents have problems with mental health or who grow up in dysfunctional families.

The impact of COVID-19 pandemic and lockdown on children and youth depends on several vulnerability factors such as the developmental age, educational status, pre-existing mental health condition, being economically underprivileged or being quarantined due to infection/fear of infection [7, 8]. Children and adolescents may be more susceptible than other social groups to the psychosocial effects of pandemics, because they are in a critical period of development. Adolescence is a phase associated with increased risk for many psychiatric disorders, such as anxiety and depression [9]. Additionally, many of hormonal and neurobiological changes during adolescence correspond with heightened emotional reactivity and the ongoing process of incorporating coping strategies and stress regulation [10, 11]. Simultaneously, adolescence is marked by the increased importance of peer relationships and a greater reliance on peers for social support. The COVID-19 pandemic, especially for children and adolescents, will have a significant impact on their growth in terms of their whole life [12].

Resilience reflects processes and resources that restore equilibrium, offset challenges, and foster adaptation to harsh conditions. Research on individual adaptation to uncertain conditions during the pandemic requires longitudinal analyses, because factors connected with resilience will change dynamically over time.

As a result of COVID-19, children and adolescents have experienced unprecedented disruption of their daily lives. It is anticipated that this intermission may trigger mental illness, including anxiety. Many studies provided child and/or adolescent reports of anxiety during COVID-19 pandemic [13–15]. Chinese research found that 18.9% of children reported anxiety symptoms on the Screen for Child Anxiety Related Emotional Disorders [14]. Another study of prevalence of anxiety symptoms disclosed its frequency as 37.4% [15]. Parental reports according child and adolescents mental difficulties included anxiety symptoms as worry (28%), fear of death of a relative (22%) [16, 17].

The factors that generate anxiety include specific, characteristic personality traits of parents, especially their timidity. This applies to both parents, but more to

the mother. Parents' anxiety behavior is taken over by the child as a result of social learning through imitation, identification and replication of parental behaviors patterns. Among other factors triggering anxiety are also specific educational influences of parents and specific educational attitudes. The source of fear is the parental overprotective attitude, which can take two forms: over-indulgent care and domination-based care, or the attitude of excessive demands. A dysfunctional family has a negative impact on the development of all its members, especially children. The pandemic contributes to the exacerbation of dysfunctional family characteristics.

Anxiety is reduced by relationship with parents based on acceptance, love and care, when the child feels and knows that she/he is loved. Those children who have had too few of these situations acquire relatively permanent tendency to react with fear. Especially those, who had too little anxiety-relieving stimuli in early childhood. The emergence of anxiety is also related to temperamental traits. Children with anxiety traits are more likely to perceive the changes caused by a pandemic as a threat.

Social isolation is considered to be one of the most important psychological risk factors for the development of various diseases, including anxiety disorders. In single people, genes responsible for the production of inflammatory proteins were activated, while those related to fighting viral infection were inactive [18].

Studies in the UK, Europe, and Asia evidenced COVID-19 related anxiety and somatic symptoms in children. 20–50% children and adolescents were reported to experience worries about themselves, friends or family catching COVID-19, 8–10% children and young people had moderate to high somatic symptoms [13, 19–21]. Some research results indicated a significant increase in the level of anxiety (by 164%) in the self-assessment of health of children and young people during pandemic Covid-19 [22]. The researchers also reported that age, gender, knowledge about COVID-19, degree of worry about epidemiological infection, and confidence about overcoming the outbreak significantly influenced the children's psychological status [23]. Studies also reported that girls showed higher anxiety levels during COVID-19 than male adolescents did. Some studies also reported that the anxiety levels among the adolescent population were significantly higher than those in children. In addition, adolescents in senior high school had the greatest anxiety symptoms [24]. Levita's study showed that over 47% of girls and 60% of boys aged 13–18 had an anxiety increase above the cut-off point on the scale assessing the presence of anxiety [21]. Rates in European and Asian studies were lower, ranging between 10 and 30% [14, 15, 19]. Differences in anxiety have been established between European countries. Anxiety and depressive symptoms were more likely in children whose parents reported higher levels of stress [25]. Some studies showed that being female was a risk factor for higher rates of anxiety symptoms [15, 26], while other found that sex did not predict anxiety symptoms [14]. The financial strain predicted higher anxiety symptoms [17].

Perceived stress in parents and children was associated with negative coping strategies. Additionally, children's stress levels were influenced by prior and current parental overreactivity. These results suggested that children in families with negative coping strategies and a history of parental overreactivity might be at risk for negative consequences of the lockdown [27]. Some families assumed that they are unable to cope with the multiple new challenges. They experienced a sense of chaos, inability to take decisions while focusing on negative information that aggravates panic. Other families looked for strategies to handle the difficulties. They moved on to mobilization stage and initiated all available coping resources.

Few studies have assessed protective factors. The awareness of COVID-19, together with pursuing interests, were protective against anxiety symptoms and helped in reducing child mental distress related to pandemic [15, 16]. Deterioration

in mental state of minors caused by pandemics requires undertaking decisive protective measures- already now, during the ongoing limitations- as well as conducted in future long-term therapy. Worsening of children's mental health status due to COVID-19 pandemics illuminates that age-specific coping strategies are crucial in response to distinct needs of young population.

3. Coping

3.1 Coping - background

Coping is substantial in considerations of how stressors affect children and adolescents as it emphasizes active role in the transactional process of dealing with stressful situations in a youngster's life, but also brings reflections about one's future development [28].

The understanding of coping in children and adolescents for many years relied on conceptualization of coping in adulthood defined by Lazarus and Folkman [29]. In this traditional approach coping is "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" ([29], p. 141). It is understood as conscious cognitive and behavioral activity, aimed at reducing the intensity or duration of unpleasant feelings, preventing the occurrence and development of emotions or limiting the negative effects on their well-being. In the theory of psychological stress coping strategies can be categorized into problem-focused and emotion-focused [30]. Problem-focused forms of coping comprise of "aggressive interpersonal efforts to alter the situation, as well as cool, rational, deliberate efforts to problem solve, and emotion-focused forms of coping include distancing, self-controlling, seeking social support, escape-avoidance, accepting responsibility, and positive reappraisal ([30], p. 572). Folkman et al. [31] show possible ways of influencing health by the coping process: coping with stress can influence neurochemical reactions (their frequency, intensity, duration); coping with stress may be associated with engaging in anti-health behaviors; some forms of coping, such as denial or avoidance, may lead to maladaptive coping behaviors.

Slightly different approach towards coping assume that coping strategies can be considered as engaged and disengaged [32]. While engaged coping involves active confronting with stressors and reassuring thoughts, disengagement coping implicates passive reaction pattern, palliative response and avoidance. Empirical results clearly show that the first group of strategies is positively associated with more sense of control and psychological well-being [32].

When considering child and adolescent coping, the approach should be complemented by the developmental framework. Unquestionable is fact that coping strategies used by children depend on the age [28, 33]. Out of many ways of coping that have been identified in studies children and adolescents appear to favor: support seeking within the family, problem-solving (and instrumental action), escape, and, when escape is not possible, distraction. Young children use predominantly behavioral strategies to distract themselves (eg. playing with something fun), while older children use cognitive strategies (eg. thinking about something pleasant). Behavioral strategies of coping are common among children but normatively decrease in middle childhood. Preschool children mostly engage in: seeking social support (primarily from caregivers), intervening directly in stressful situations, withdrawing, avoidance, or using behavioral activities to distract attention. Due to progress of cognitive development, school children occur to rely on more varied coping strategies as they adjust cognition in problem-solving and distraction

tactics, but also turn to sources of support outside family. In adolescence independence in thinking, ability to monitor one's behavior and manage emotions by using positive self-talk and cognitive reformulation improve repertoire of coping strategies [28]. Over time anger-related emotion regulation decrease and media use as a way of managing stress increase [33]. Generally, children coping capacities develop in problem-solving strategy from instrumental action to planful problem-solving, in support-seeking from reliance on adults to more self-reliance. In distraction tactic behavior action gives way to cognition (with more organization, flexibility, integration with other coping strategies and aim specifically at problem) [34].

Not only age matters in understanding ability to cope with stress among children, but also gender. As the findings show [35] girls aged 8–13 tend to use more often maladaptive coping patterns than boys. Among young females as emotional regulating strategies (minimization and distraction/recreation) and problem-focused tactics (positive self-instructions) were decreased, while rumination, resignation and aggression were increased. Girls were also characterized by increase in engaging in the problem-focused strategy (support seeking) [35, 36]. The results of other study [37] indicated that active distraction used by girls decreased over time, while passive distraction increased. The paper referred also to boys who presented increase in self-destructive and aggressive coping behaviors increased with age.

Developmentally orientated researchers suggest that process of dealing with stress by children should comprise of such factors as emotion regulation, family functioning, temperament (and deriving from it reactivity) and the role of social interactions [28]. Researchers agree that positive coping lead to better psychological well-being and mental health [38–40].

3.2 Coping in children and adolescents in the context of COVID-19 pandemic

At this point, the literature on children's coping strategies in the context of COVID-19 pandemic and its impact on children's psychosocial well-being is still limited. The outcomes come mostly from observations, and research conducted in Europe and Asia.

Several studies have primarily examined coping strategies and factors associated according to age of children. Research conducted by Domínguez-Álvarez et al. [41] in a Spanish sample of children aged 3–12 during the acute phase of COVID-19 pandemic proved that children's coping strategies differed between age groups and that stress management relied more on strategies reflecting engagement than disengagement. Parents of preschoolers, middle-aged children and early adolescents referred to child's coping and possible observed changes on behavior related to the pre-pandemic functioning through specially developed scale. Comparing to older children, preschoolers appeared to use more strategies based on negative emotion regulation (such as yelling or getting angry). Children aged 7–9 were reported as using more engaged-oriented strategies such as problem solving, looking for understanding of such extraordinary circumstances and seeking instrumental social support. Early adolescents presented range of strategies of pandemic stress management and more complex ways of coping through positive emotion regulation (e.g., "trying to calm him/herself"), but also humor ("making jokes or trying to laugh about the current situation") and wishful thinking ("wishing it never had happened"). Typically, engagement coping was positively correlated with psychosocial adjustment across all age groups. Disengagement-orientated coping was associated to some of the COVID-19-related stressors (i.e., close death, economic impact, and particularly fear of the future) and distinctively was related with negative outcomes (i.e., higher levels of behavioral and emotional difficulties) [41].

A study of Chinese adolescents aged 13–17 [42] revealed that general positive coping was protective factor for the occurrence of depressive, anxiety and stress. Additionally, positive coping was a protective factor for trauma-related distress in older adolescents. Negative coping occurred to be a risk factor for depression, anxiety, stress symptoms and trauma-related distress in a whole sample regardless of gender.

Available literature examining children and adolescents' coping during COVID-19 pandemics focused also on the impact of adults from the environment of young people. Role of family and school in managing psychological distress among youngsters due to pandemics is being highlighted. Attention should be drawn to parents' distress, parent–child relationships, the marital relationship in the family system, teachers' distress, teacher–student relationships, and peer relationships within the school [43]. In one notable study [44] coping skills were investigated along with children's adjustment. Results showed that maternal coping skills were protective factor with prediction for children's positive emotions.

Accordingly to research findings, what helpful strategies in managing stress and anxiety can be provided by parents and specialists during the period of COVID-19 pandemics? Most studies report that attention should be paid to effective, sensitive, emotion-focused and empathetic communication concerning life-threatening illness as it assets children and other family members' long-term psychological wellbeing [45].

Kang et al. [46] drew four main tactics for caregivers: Acknowledge, Discuss, Do, and Reflect. The first one refers to caregivers' acknowledgement of the change and its possible consequences in order to ensure children that they can turn to their caregivers for support. Second strategy is based on supporting youngsters with accurate information from trustworthy sources tailored to their age and level of understanding aiming generally at better understanding of pandemics. Third tactic is associated with ensuring predictability in child's environment, maintaining routines and – what seems to be crucial - equipping children with coping strategies (through expression of their feelings via writing and drawing, breathing exercises and progressive muscle relaxation, staying with touch with friends and schoolmates over social media platforms but with caregiver supervision). Finally, the fourth suggestion indicates caregivers' affecting their psychological well-being [46].

Also De Young et al. [47] in their report described Australian parents' efforts to support their children during early stages of COVID. They noticed that nearly 43% caregivers kept their child from seeing or hearing any information about COVID-19. 25% parents appeared to be a lot more cautious or overprotective with their child during the pandemic. Although many parents were found to relieve child of stress and anxiety through empathetic response to child's emotion (94.3% of a research sample), maintenance or creating new routines (88.4%), staying in touch with family and friends (88.4%), managing emotion and thoughts by verbal communication (87.3%) and, finally, using practical coping strategies (78.5%). Positive parenting responses, including sticking to routines and showing empathy, correlated with more positive affect and emotion regulation in children and more positive parent–child relationships while taking care of daily habits was associated with less anxiety, depression and angry behaviors among youngsters.

As it was indicated, coping plays essential role for children and adolescents' adjustment to stressors associated with COVID-19 pandemics such as uncertainty, social isolation, disruption in daily life routine, parents' stress (such as working from home) [48].

When dealing with stress induced by the COVID-19 pandemic also resilience should be taken into account as it protects from future various psychiatric outcomes among young people.

4. Resilience

4.1 Resilience - background

In the last 20 years, there has been a growing interest in resilience theory. The first findings in this area were based on the long-term observation of people who suffered from schizophrenia. It was found that despite a difficult course of the disorder, some people's abilities to cope are more adequate than the others [49]. These findings had an impact on broad research among children exposed to difficult developmental conditions [50]. As a result of ample evidence confirming negative consequences of trauma to mental development and mental health [51], there were attempts to find individual risk and protective factors which could differentiate the results of risk exposure [52]. Based on the findings, there were hopes for finding prevention and treatment methods to reduce psychopathology among those who experienced trauma [53]. Mental health's researchers and practitioners are concerning not only with the effects of stressful or traumatic events but also the factors that determine the ability to restore physical equilibrium. Resilience is widely known as the ability to bounce back after facing up an extremely stressful situation or the ability to cope successfully with traumatic experiences. According to The American Psychological Association, resilience is defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress" [54]. It refers to individual processes and mechanisms. As far as such understanding of resilience is useful, it seems to be insufficient for understanding the complexity of the concept [49, 52, 53].

Considering resilience it is worth pointing out that nowadays it is not only referred to individual traits, abilities but also family and environmental factors. Despite being observed in one's behavior, resilience is bound up with external issues. In the early 80ties, resilience was treated as characters strength and flexibility. This comprehension indicates resilience as the responsibility of the individual and omits the influence of family and social support which may be stigmatizing [55]. Being resilient is connected with a biological basis but it is also under the influence of the environment and can change during lifespan [52].

The major dimensions of resilience are risk and protective factors. Risk factors involve negative life experiences and nonadoptive traits. Protective factors involve individual traits, family and social support [1]. In the practical approach, there were found plenty of protective and risk factors which may be useful in planning proper psychological interventions. The major protective factors include individual traits: high self-esteem, sense of efficiency, sociability, intelligence, cheerful disposition, faith, talents, family factors: cohesion, compatibility, close relations between family members, good financial situation, external factors: safe neighborhood, having a mentor, belonging to a pro-social organization, attending an efficient school, features of society's politics and culture - protection of the health and safety, care of the education system, prevention and protection against violence [56]. Risk factors are divided into specific and nonspecific. Nonspecific risk factors may lead to different disorders. Specific factors are strictly connected with a specific disorder. Commonly mentioned nonspecific factors include attention disorders, family conflicts, school failures, peer rejection, poverty, discrimination [55].

There are three major models of resilience: compensatory model, protective (or immunity) model and challenge model [55]. The compensatory model assumes that protective factors constrain the risk factors. The Protective (or immunity) model is based on the assumption that protective factors interact with risk factors and influence one's behavior. Whereas the challenge model indicates that a medium level of risk factors make one more resistant to stress [57].

Resilience processes are activated in the face of adversity that cannot be controlled by the subject. As a result, resilience is considered in accidental cases such as war, disaster, illness [58].

4.2 Resilience in the light of COVID 19 pandemic

COVID 19 pandemic creates an extraordinary, demanding situation worldwide. It is named as a global health crisis and one of the greatest challenge in the medical, economic and social areas of our times. Despite being a global demand, pandemic COVID 19 concerns individuals. People had to face up with adversities as uncertainty and unpredictability that may lead to an increased level of stress. According to the previously mentioned thesis that people can differ considerably in terms of coping with adversities and numerous factors may modify the ability to deal with difficulties, resilience is an issue of growing interest in the light of pandemic COVID 19. Researchers are trying to identify factors that can play a protective role for mental health in the current situation [4].

There are a plethora of findings concerning the mental health of medical workers [4]. During the pandemic period, they are found to be exposed to stress factors to the great extent. However, as was mentioned above, pandemic related problems apply to every each of us. In China, it was found that adolescences are more likely to manifest depressive symptoms than adults during pandemic COVID- 19 [15]. The situation of children and adolescents in terms of a pandemic should be taken into consideration to a great extent.

Children and adolescents during the pandemic period have had to face up: isolation, remote learning, social distancing, limited contacts with peers, loneliness [15]. Those difficulties seem to be crucial in the children's and adolescences because they are strictly connected with their basic needs and they also impairs the unspecific protective resilience factors. They are also exposed to the stress of their parents which may also influence the child's mental health and his or her abilities to cope with stress.

Major research areas concerning the pandemic period applied to specific risk and protective resilience factors among children, the role of parents mental health condition on child resilience, possible interventions that may enhance resilience will be analyzed.

To find the risk and protective factors that may promote resilience, there were examined Hong-Kong families. The study group consists of children aged 2–12. Researchers assumed that family demographics, child psychosocial wellbeing, habits, parent–child interactions and parental stress will be crucial for resilience in the pandemic period. The research was based on the online survey completed by the parents based on their child's observations. The risk factors that were found involves special educational needs of the child, chronic disease of a child, mental illness of mothers, one-parent family and low economic status of the family. Moreover, sleep difficulties, insufficient exercises, excessive use of electronic devices were connected with worse functioning of a child and higher level of parents stress. It is worth pointing out that, as it was proved, not only the child's difficulties strictly connected with pandemic are tremendous but also the family situation and mental health of a parent before the emergence of COVID 19 [59].

Similarly to the previous findings, Fegert, Vitiello, Plener, Clemens suggested that the role of environmental (including family) and intrinsic stress-related processes are vital to predict the functioning of a child in the pandemic situation [60].

Daks, Peltz and Rogge focused on the parents' traits and abilities as a resilience risk and protective factor. They found out that psychological flexibility versus inflexibility of a parent is a part of resiliency and can affluence the current

pandemic situation. The 742 parents completed the online survey which measured the level of psychological flexibility. It was proved that the more flexible the parent is the better family cohesion is achieved. The lower flexibility of a parent can lead to disagreement in the family. In general, pandemic related circumstances increase the level of stress and the possible discord in the families. It was proved that the families with greater cohesion and greater psychological flexibility can cope with pandemic stressor more successfully than the families with lower psychological flexibility and, as a result, more family discords. There was also proved that the parents attitudes towards flexibility and results of particular attitude influence the child's level of stress. The research proved once again the role of parents traits, emotions and behavior on how resilient a child will be [57].

There are also suggestions that the younger the child is the more important role of protective resilience factors connected with a parent is. A developing child's brain is more likely to be disturbed by stress factors. Moreover, young children's executive functions and self-regulating skills are not developed to a great extent which could be also protective for them. The parents' cognitive flexibility, stress coping strategies, mental health, positive parenting and attachment, warmth and sensitivity can be protective for a child. As far as the self-regulation skills of a child are immature, a parent should take over the function of the child's emotion regulation by effective communication and emotional support. Despite the factors connected with a parent ability, the role of sport and creative activities were also pointed out as factors that can support the child in enhancing his and her abilities to cope with stress, regulate emotions and strengthen resilience [61].

On the other hand, resilience understood as the child's trait was found to play a protective role for intrusive rumination during pandemic COVID 19. There was found a connection between creativity and intrusive rumination. The more creative children seem to be, the more intrusive rumination can create. However, it was found that resilience is a moderator between creativity and intrusive rumination. Highly developed resilience contributes to cognitive flexibility, positive thinking and, as a result, better adaptation [62].

There are plenty of findings that proved the negative effects of the pandemic. In contrary, there are also suggestions that self-isolation, remote learning may have also positive consequences that we should take advantage of. Dvorsky, Breaux and Becker extracted a specific situation, in which pandemic connected circumstances can be helpful for a child or adolescents. Remote learning was found to be helpful for children with educational problems in its traditional way. Online lessons provide a child possibility to individualize the way of learning. For instance, children with attention and behavior disorders have an opportunity to engage in activities that help them to overcome difficulties more likely than in schools. Those who suffer peer victimization have an opportunity to focus on learning and enhance selected, positive relations. Some children are also supposed to discover hobbies or talents more often. Moreover, the necessity to stay at home may provide an opportunity to bond up with family members as there are more chances to spent time together [63].

According to the researcher, resilience can be enhanced by mindfulness training and cognitive-behavioral techniques [64]. What is more, it was found that such training can also influence emotional intelligence defined as the ability to identify, understand the reason and the consequence of emotions and cope adaptively with them, Based on this assumption, Yonon tried to find the impact of mindfulness training on resilience during the pandemic period among middle schools. The Connor-Davidson Resilience Scale and Emotional Intelligence Scale were used. 180 students were examined. They were divided into the experimental and the control group. The Experimental Group participated in 8-weeks long Mindfulness Training. It was found that students from the experimental group enhanced significantly

resilience as well as emotional intelligence. Mindfulness training was found to help to accept the present situation, avoid judgment and, as a result, avoid negative emotions [65].

Some practical guides devoted to resilience can be also found. Bartlett and Viverte on Childs Trends published: “Ways to Promote Children’s Resilience to the COVID-19 Pandemic”. The authors pointed out protective factors, presented as tips for a parent. They pointed out that sensitive, responsive caregiving, especially in the light of pandemic is an issue of paramount importance. There was suggested that not only a parent can meet this need but also adults who are not living with a child (grandparents, teachers). There is an importance of the usage of internet and electric devices to keep the contact. What is more, meeting basic needs is necessary. It is crucial for parenting to look for and benefit from the community services when it is needed. The third protective factor that was analyzed is emotional support for a child. Authors propose to take care of reassurance children about the love and support of a parent. It is worth keeping daily routines and practise with child regulation skills. In the guide, there was also indicated that support for caregivers is as important as support for a child. The mental health of a parent can be protective for the mental health of a child. The last suggestion is devoted to maintenance social contacts as far as it is possible using the internet. There were also pointed out the importance of conducting regular visits by professionals, social workers within families with violence abuse and poverty problem [66].

A parallel example of the open guide on how to enhance resilience during a pandemic was prepared by the Centre on the Developing Child, Harvard University. In this approach, researchers focus on the necessity to keep a balance between the negative and the positive outcomes related to pandemic. On the one hand, we should reduce the sources of stress, on the other – adjust supportive issues. It was indicated that the level of stress could be reduced by the social programs and organization promoting meet basic needs (food, healthcare, internet access), help in receiving financial support, encourage self-care for adults. Supportive issues that were mentioned concerns responsive relationships. Such relationships are commonly known as the relationship between a caregiver and a child but in this case, there is also a focus on a responsive relationship between an adult and adult. Responsive relationships have the potential to meet the needs of a person and relief stress. There was highlight the role of adults family and friendship relationships but also the contact with professional family workers and a parent. What is more, according to this guide, core skills such as executive function and self-regulation should be strengthened. These skills can be enhanced by basic activities such as day planning, creating checklists and prioritizing needs [67].

Centre for Childhood Resilience had also prepared tips that should be taken into consideration to promote resilience within children and their families. They also pay special attention to the role of caregivers on children during the pandemic period. Firstly, there was a focus on a safe environment for a child. As a safe environment physical and emotional support is understood. There was an assumption that the environment of a child is safe when it is explicable. Moreover, according to the tips, parents should support the child in emotional regulation. It is worth pointing out that the role of self-care of a parent is mentioned again. Additionally, the role of building relationships and connectedness with parents, siblings and remote family is highlighted [68].

Taking everything into account, resilience seems to be a crucial issue in the light of pandemic COVID-19. It was found to be vital to find factors that may affect children coping strategies. However, as far as it was concerned, parental care is an issue of paramount importance. There should be taken into consideration the supportive role of a parent on a child in detail. Moreover, a parent should also take care of his

or her mental health to be able to take proper care of a child [57, 59–61, 66–68]. Additional factors that can be improved to enhance children's and adolescents resilience during the pandemic mentioned above include: keeping relationships, reflecting optimistic approach, keeping a daily routine, practising mindfulness training and performing physical activities [59, 62, 65].

5. Conclusions and future directions

The COVID-19 pandemics seem to highlight the need for shaping effective means of coping with stress and anxiety and develop innovative strategies to improve the psychological well-being in young individuals. As review of the literature shows, caregivers “try to do their best”. However, consequences of anxiety, stress and violence exposure may be leading problems to meet in psychological and psychiatric care after pandemics. Taking into account that the way children and their parents response to pandemic stressors plays fundamental role for their adjustment, there is need of combining both child and family variables in tailored-preventive interventions targeted at enhancing resilience of children and their parents, reducing negative coping strategies, practicing effective means of coping with stress in order to protect their mental health now and in the future.

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References

- [1] Nesse RM, Williams GC. Evolution and healing: the new science of Darwinian medicine. London, Phoenix. 1996.
- [2] Rybakowski J. Choroby psychiczne w świetle teorii ewolucji. *Wszechświat*. 2018; 119,1-3, 52-59.
- [3] Mobbs D, Petrovic P, Marchant JL, Hassabis D, Weiskopf N, Seymour B, Dolan RJ, Frith CD. When fear is near: threat imminence elicits prefrontal-periaqueductal gray shifts in humans. *Science*. 2007; 24;317(5841):1079-83. DOI: 10.1126/science.1144298. PMID: 17717184
- [4] Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*. 2020; 12;14:20. DOI: 10.1186/s13034-020-00329-3
- [5] Waszczuk MA, Zavos HM, Eley TC. Genetic and environmental influences on relationship between anxiety sensitivity and anxiety subscales in children. *Journal of Anxiety Disorders*. 2013; 27(5):475-484. DOI: 10.1016/j.janxdis.2013.05.008
- [6] Noël VA, Francis SE. A meta-analytic review of the role of child anxiety sensitivity in child anxiety. *Journal of Abnormal Child Psychology*. 2011; 39(5):721-733. DOI: 10.1007/s10802-011-9489-3.
- [7] Singh S, Roy D, Sinha K, Parveen S, Sharma G, Joshi G. Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations. *Psychiatry Research*. 2020; 293 :113429. DOI:10.1016/j.psychres.2020.113429
- [8] Marques de Miranda D, da Silva Athanasio B, Sena Oliveira AC, Simoes-E-Silva AC. How is COVID-19 pandemic impacting mental health of children and adolescents?. *International Journal of Disaster Risk Reduction*. 2020; 51:101845. DOI:10.1016/j.ijdr.2020.101845
- [9] Lee FS, Heimer H, Giedd JN, Lein ES, Šestan N, Weinberger DR, Casey BJ. Mental health. Adolescent mental health--opportunity and obligation. *Science*. 2014; 31;346 (6209):547-9. DOI: 10.1126/science.1260497
- [10] Ahmed SP, Bittencourt-Hewitt A, Sebastian CL. Neurocognitive bases of emotion regulation development in adolescence. *Developmental Cognitive Neuroscience*. 2015 Oct;15:11-25. DOI: 10.1016/j.dcn.2015.07.006.
- [11] Spear L. The behavioral neuroscience of adolescence. New York: WW Norton & Company. 2010.
- [12] Wade M, Prime H, Dillon T, Browne DT. Why we need longitudinal mental health research with children and youth during (and after) the COVID-19 pandemic. *Psychiatry Research*. 2020; 290: 113143. DOI: 10.1016/j.psychres.2020.113143
- [13] Liu S, Liu Y, Liu Y. Somatic symptoms and concern regarding COVID-19 among Chinese college and primary school students: A cross-sectional survey. *Psychiatry Research*. 2020; 289,113070. DOI: 10.1016/j.psychres.2020.113070
- [14] Xie X, Xue Q, Zhou Y, Zhu K, Liu Q, Zhang J, Song R. Mental Health Status Among Children in Home Confinement During the Coronavirus Disease 2019 Outbreak in Hubei Province, China. *JAMA Pediatrics*. 2020; 174(9):898-900. DOI: 10.1001/jamapediatrics.2020.1619

- [15] Zhou SJ, Zhang LG, Wang LL, Guo ZC, Wang JQ, Chen JC, Liu M, Chen X, Chen JX. Prevalence and socio-demographic correlates of psychological health problems in Chinese adolescents during the outbreak of COVID-19. *European Child & Adolescent Psychiatry*. 2020; 29(6):749-758. DOI: 10.1007/s00787-020-01541-4
- [16] Jiao WY, Wang LN, Liu J, Fang SF, Jiao FY, Pettoello-Mantovani M, Somekh E. Behavioral and Emotional Disorders in Children during the COVID-19 Epidemic. *The Journal of Pediatrics*. 2020; 221:264-266.e1. DOI: 10.1016/j.jpeds.2020.03.013
- [17] Rosen Z, Weinberger-Litman SL, Rosenzweig C, Rosmarin DH, Muennig P, Carmody ER, Rao ST, Litman L. Anxiety and distress among the first community quarantined in the U.S. due to COVID-19: psychological implications for the unfolding crisis. 2020; *PsyArXiv*. Preprint DOI: 10.31234/osf.io/7eq8c
- [18] Kiecolt-Glaser JK, McGuire L, Robles TF, Glaser R. Psycho neuroimmunology and psychosomatic medicine: back to the future. *Psychosomatic Medicine*. 2002; 64(1):15-28. DOI: 10.1097/00006842-200201000-00004.
- [19] Orgilés M, Morales A, Delvecchio E, Mazzeschi C, Espada JP (2020). Immediate psychological effects of the COVID-19 quarantine in youth from Italy and Spain. *PsyArXiv*. DOI: 10.31234/osf.io/5bpfz.
- [20] Waite P, Creswell C (2020). Report 01: Findings from the first 1500 participants on parent/carer stress and child activity. *Emerging Minds Co-Space Study*. Available from: <https://emergingminds.org.uk/wp-content/uploads/2020/04/Co-SPACE-initial-report-first-1500-participants-06-04-20.pdf> [Accessed: 2021-03-01]
- [21] Levita L. Initial research findings on the impact of COVID-19 on the well-being of young people aged 13 to 24 in the UK. COVID-19 psychological research consortium (C19PRC). 2020.
- [22] Kooth. A Kooth data release: How has COVID-19 affected the mental health of children and young people in the United Kingdom? 2020. Available from: <https://about.kooth.com/covid19-data/> [Accessed: 2021-02-28]
- [23] Liu X, Luo W-T, Li Y, Li C-N, Hong Z-S, Chen H-L, Xiao F, Xia J-Y. Psychological status and behavior changes of the public during the COVID-19 epidemic in China. *Infectious Diseases of Poverty*. 2020;9:58. DOI: 10.1186/s40249-020-00678-3
- [24] Meherali S, Punjani N, Louie-Poon S, Abdul Rahim K, Das JK, Salam RA, Lassi ZS. Mental Health of Children and Adolescents Amidst COVID-19 and Past Pandemics: A Rapid Systematic Review. *International Journal of Environmental Research and Public Health*. 2021; 18(7):3432. DOI: 10.3390/ijerph18073432
- [25] Orgilés M, Espada JP, Delvecchio E, Francisco R, Mazzeschi C, Pedro M, Morales A. Anxiety and Depressive Symptoms in Children and Adolescents during COVID-19 Pandemic: A Transcultural Approach. *Psicothema*. 2021; 33(1):125-130. DOI: 10.7334/psicothema2020.287.
- [26] Oosterhoff B, Palmer CA, Wilson J, Shook N. Adolescents' Motivations to Engage in Social Distancing During the COVID-19 Pandemic: Associations With Mental and Social Health. *Journal of Adolescent Health*. 2020; 67(2):179-185. DOI: 10.1016/j.jadohealth.2020.05.004
- [27] Achterberg M, Dobbelaar S, Boer OD, Crone EA. Perceived stress as mediator for longitudinal effects of the COVID-19 lockdown on wellbeing of

- parents and children. *Scientific Reports*. 2021; 3;11(1):2971. DOI: 10.1038/s41598-021-81720-8. PMID: 33536464; PMCID: PMC785920
- [28] Skinner EA, Zimmer-Gembeck MJ. The development of coping. *Annual Review of Psychology*. 2007; 58: 119-144. DOI: 10.1146/annurev.psych.58.110405.085705
- [29] Lazarus RS, Folkman S. *Stress, appraisal, and coping*. New York: Springer Publishing Company; 1984.
- [30] Folkman S, Lazarus RS, Gruen RJ, DeLongis A. Appraisal, coping, health status, and psychological symptoms. *1986; 50(3):571-579*. DOI: 10.1037//0022-3514.50.3.571
- [31] Folkman S, Lazarus RS, et al. Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*. 1986; 50(5): 992-1003.
- [32] Dijkstra MT, Homan, AC. Engaging in Rather than Disengaging from Stress: Effective Coping and Perceived Control. *Frontiers in Psychology*. 2016; 7: 1415. DOI: 10.3389/fpsyg.2016.01415
- [33] Eschenbeck H, Schmid S, Schröder I, Wasserfall N, Kohlmann, CW. Development of coping strategies from childhood to adolescence: Cross-sectional and longitudinal trends. *European Journal of Health Psychology*. 2018; 25(1), 18-30. DOI: 10.1027/2512-8442/a000005
- [34] Zimmer-Gembeck M, Skinner EA. The development of coping across childhood and adolescence: an integrative review and critique of research. *International Journal of Behavioral Development*. 2011; 35.1: 1-17. DOI: 10.1177/0165025410384923
- [35] Hampel P, Petermann F. Age and gender effects on coping in children and adolescents. *Journal of Youth and Adolescence*. 2005; 34.2: 73-83. DOI: 10.1007/s10964-005-3207-9
- [36] Eschenbeck H, Carl-Walter K, Lohaus A. Gender Differences in Coping Strategies in Children and Adolescents. *Journal of Individual Differences*. 2007; 28:1, 18-26. DOI: 10.1027/1614-0001.28.1.18
- [37] Grouer MW, Thomas SP, Shoffner D. Adolescent stress and coping: A longitudinal study. *Research in Nursing & Health*. 1992;15.3: 209-217. DOI: 10.1002/nur.4770150307
- [38] Bridges LJ. Coping as an element of developmental well-being. In: Bornstein MH, Davidson L, Keyes CLM, Moore KA, editors. *Crosscurrents in contemporary psychology. Well-being: Positive development across the life course*. Lawrence Erlbaum Associates Publishers; 2003; 155-166.
- [39] Chao R Ch-L. Managing stress and maintaining well-being: Social support, problem-focused coping, and avoidant coping. *Journal of Counseling & Development*. 2011; 89.3: 338-348. DOI: 10.1002/j.1556-6678.2011.tb00098.x
- [40] Mayordomo T, Viguer P, Sales A, Satorres E, Meléndez J. Resilience and Coping as Predictors of Well-Being in Adults. *The Journal of Psychology*. 2016; 150:7, 809-821, DOI: 10.1080/00223980.2016.1203276
- [41] Domínguez-Álvarez B, López-Romero L, Isdahl-Troye A, Gómez-Fraguela JA, Romero E. Children Coping, Contextual Risk and Their Interplay During the COVID-19 Pandemic: A Spanish Case. *Frontiers in psychology*. 2020; 11: 3427. DOI: 10.3389/fpsyg.2020.577763
- [42] Zhang C, Ye M, Fu Y, Yang M, Luo F, Yuan J, Tao Q. The psychological impact of the COVID-19 pandemic on teenagers in China. *Journal of Adolescent Health*.

2020; 67:6: 747-755. DOI: 10.1016/j.jadohealth.2020.08.026

[43] Zhou X. Managing psychological distress in children and adolescents following the COVID-19 epidemic: A cooperative approach. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2020; 12(1), 76-78. DOI: 10.1037/tra0000754

[44] Petrocchi S, Levante A, Bianco F, Castelli I, Lecciso F. Maternal Distress/ Coping and Children's Adaptive Behaviors During the COVID-19 Lockdown: Mediation Through Children's Emotional Experience. *Frontiers in Public Health*. 2020; 8:587833. DOI: 10.3389/fpubh.2020.587833

[45] Dalton L, Rapa E, Stein A. Protecting the psychological health of children through effective communication about COVID-19. *The Lancet Child & Adolescent Health* 2020; 4(5), 346-347. DOI: 10.1016/S2352-4642(20)30097-3

[46] Kang YQ, Lim TS, Ragen ES, Tan MY, Aishworiya R. Managing Children's Anxiety During COVID-19 Pandemic: Strategies for Providers and Caregivers. *Frontiers in Psychiatry*. 2020; 11:552823. DOI: 10.3389/fpsy.2020.552823

[47] De Young, Paterson, March, Hoehn, Alisic, Cobham, Donovan, Middeldorp, Gash, Vasileva. COVID-19 Unmasked Young Children – Report 1: Early findings and recommendations Brisbane. Queensland Centre for Perinatal and Infant Mental Health, Children's Health Queensland Hospital and Health Service. [Internet] 2020. Available from: <https://www.childrens.health.qld.gov.au/wp-content/uploads/PDF/COVID-19/COVID19-Unmasked-Survey-Progress-Report-01.pdf> [Accessed: 2021-03-01]

[48] de Figueiredo CS, Sandre PC, Portugal LCL, Mázala-de-Oliveira T, da

Silva Chagas L, Raony Í, Bomfim POS. COVID-19 pandemic impact on children and adolescents' mental health: Biological, environmental, and social factors. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*. 2021; 106, 110171. DOI: 10.1016/j.pnpbp.2020.110171

[49] Borucka A, Ostaszewski K. Koncepcja resilience. Kluczowe pojęcia i wybrane zagadnienia. *Medycyna Wieku Rozwojowego*. 2008; 12: 587-597.

[50] Masten A.S, Powell J.L. A Resilience Framework for Research Policy and Practice. In: Luthar S.S, editor. *Resilience and Vulnerability*. Cambridge University Press. 2003. p. 1-28. DOI: 10.1017/CBO9780511615788.003

[51] Schore, A. N. Relational trauma and the developing right brain: The neurobiology of broken attachment bonds. In T. Baradon, editor. *Relational trauma in infancy: Psychoanalytic, attachment and neuropsychological contributions to parent–infant psychotherapy*. Routledge/Taylor & Francis Group. 2009; p. 19-47.

[52] Southwick, S. M, Bonanno, G. A, Masten, A. S, Panter-Brick C, Yehuda R. Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*. 2014; 5. DOI: 10.3402/ejpt.v5.25338

[53] Masten A.S. Resilience in developing system: Progress and promise as the fourth waves rises. *Development and Psychopathology*. 200; 19: 921-930. DOI: 10.1017/S0954579407000442

[54] American Psychological Association. The road to resilience. Washington, DC: American Psychological Association. [Internet]. 2014. Available from: <http://www.apa.org/helpcenter/road-resilience.aspx> [Accessed: 2021-04-17]

- [55] Garmezy N. Stres-Resistant Children: The Search for Protective Factors. In: Stevenson J, editor. *Recent Research in Developmental Psychopathology*. Pergamon Press: Oxford – New York – Toronto – Sydney – Paris – Frankfurt; 1985. p. 213-234.
- [56] O'Dougherty Wright M, Masten A.S. Resilience processes in development. In: Goldstein S, Brooks R.B, editors. *Fostering positive adaptation in the context of adversity*, w: *Hand Book of Resilience in Children*. New York: Kluwer Academic; 2005. p. 17-38.
- [57] Daks J.S, Peltz J.S, Rogge R.D. Psychological flexibility and inflexibility as sources of resiliency and risk during a pandemic: Modeling the cascade of COVID-19 stress on family systems with a contextual behavioral science lens. *Journal of Contextual Behavioural Science Empirical Research*. 2021; 18: 16-27.
- [58] Luthar S.S, Zigler E. *Vulnerability and Competence: A Review of Research on Resilience in Childhood*. *Amer. J. Orthopsychiatry*. 1991; 61: 6-22. DOI: 10.1037/h0079218
- [59] Tso, W.W.Y, Wong, R.S, Tung, K.T.S. Vulnerability and resilience in children during the COVID-19 pandemic. *Eur Child Adolesc Psychiatry*. 2020; 291. DOI: 10.1007/s00787-020-01680-8
- [60] Killgore W.D.S, Taylor E.C, Cloonan S.A, N.S. Dailey N.S. Psychological resilience during the COVID-19 lockdown. *Psychiatry research*. 2020; 291. DOI: 10.1016/j.psychres.2020.113216
- [61] Urbanowicz A, Shankland R, McAloney-Kocman K. Coping in isolation: Predictors of individual and household risks and resilience against the COVID-19 pandemic. *Social Sciences & Humanities Open*. 2021; 3. DOI: 10.1016/j.ssaho.2021.100123
- [62] Wang Q, Xin Zhao X, Yuming Yuan Y, Baoguo Shi. The Relationship Between Creativity and Intrusive Rumination Among Chinese Teenagers During the COVID-19 Pandemic: Emotional Resilience as a Moderator. *Front Psychol*. 2020; 11. DOI: 10.3389/fpsyg.2020.601104
- [63] Dvorsky, M.R, Breaux R, Becker S.P. Finding ordinary magic in extraordinary times: child and adolescent resilience during the COVID-19 pandemic. *Eur Child Adolesc Psychiatry*. 2020. DOI: 10.1007/s00787-020-01583-8
- [64] Joyce S, Shand F, Tighe J, Laurent S.J, Bryant R.A, Harvey S.B. Road to resilience: A systematic review and meta-analysis of resilience training programs and interventions. *BMJ Open*. 2018; 8. DOI: 10.1136/bmjopen-2017-017858
- [65] Yuan Y. Mindfulness training on the resilience of adolescents under the COVID-19 epidemic: A latent growth curve analysis. *Personality and Individual Differences*. 2021; 172. DOI: 10.1016/j.paid.2020.110560
- [66] Bartlet J.D., Viverte R. *Child Trends. Ways to Promote Children's Resilience to the COVID-19 Pandemic* [Internet]. 2020. Available from: <https://www.childtrends.org/publications/ways-to-promote-childrens-resilience-to-the-covid-19-pandemic> [Accessed: 2021-04-17]
- [67] Center on the Developing Child. Harvard University. *How to Help Families and Staff Build Resilience During the COVID-19 Outbreak*. [Internet]. 2020. Available from: <https://developingchild.harvard.edu/resources/how-to-help-families-and-staff-build-resilience-during-the-covid-19-outbreak/> [Accessed: 2021-04-17]
- [68] Center for Childhood Resilience. *Promoting Resilient Families During COVID-19*. [Internet]. 2020. Available from <https://childhoodresilience.org/resources-1> [Accessed: 2021-04-17]