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The effects of COVID-19 on young people's mental health and psychological well-being

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1. Introduction

The outbreak of COVID-19, the disease resulting from the severe acute respiratory syndrome-coronavirus 2 (SARS-CoV 2), was a landmark of the year 2020 for most (if not all) parts of the globe. As of the writing of this paper (December 2020), over 80 million people have been diagnosed with the virus globally, and over 1.7 million people have died diagnosed with complications of the disease. The governments around the world have taken strict measures to control the spread of the virus, measures that have restricted social contacts to the minimum. The aim of this article is to delineate the impact of the COVID-19 pandemic on adolescents and young people's mental health and psychological well-being. In the first part, the paper gives an overview of the COVID-19 pandemic and its impact. Then, the normative developmental characteristics of adolescence and emerging adulthood are presented, characteristics that might render these developmental stages particularly sensitive in terms of psychological well-being. Past research on previous disasters is then briefly reviewed under a resilience framework, in order to explain what we have learnt regarding the effects of previous disasters on psychological well-being of adolescents and young adults. In the second part, the article presents empirical evidence on the effects of the COVID-19 pandemic on adolescent and youth mental health. Evidence on what (what mental health and psychological well-being effects does the pandemic have?), how (how can these effects be explained?), and whom (who is more vulnerable to the negative consequences of the pandemic) is presented. In the third part, some possible routes of action are suggested for various stakeholders.

1.1 COVID as a disaster affecting youth's normative development

Disasters are widespread disruptive events that may occur for a short or a long period of time and that cause disruption and loss on many levels, for example simultaneously affecting

individuals, families, communities, societies, and economies. Examples are strong earthquakes, large wildfires, floods, nuclear and other technological accidents. In 2020, the emergence of COVID-19 pandemic can be classified as a disaster. To control the spread of the disease, governments all over the world have taken measures that have had an enormous impact on the lives of billions of people. Even though physical health is understandably the first priority during a pandemic, the impact of the COVID-19 pandemic and of the resulting measures on mental health has also been an important concern (Gruber et al., 2020). Past research has indicated that, compared to adults' mental health, young people's mental health is often disproportionately affected by calamities (Danese et al., 2020). In addition, social isolation and loneliness precipitate depression and anxiety in children and adolescents (Loades et al., 2020). How and why does the COVID-19 pandemic affect adolescents and emerging adults' psychological well-being?

Adolescence is the developmental stage when young people transform from children to adults. Several key processes unfold during this period, such as the advent of new cognitive capacities, neurobiological changes, and changes in the social interactions with increasingly more time spent outside the family. These processes make for an increasing independence from parents; adolescents strive for more autonomy (Branje et al., 2012), and try to construct a personal identity that will gradually help them navigate possible adult roles (Meeus, 2016). All these essential characteristics of adolescence are severely threatened by the pandemic. In addition, adolescence is a particularly vulnerable developmental stage because this period is when many psychological symptoms increase in prevalence, and several psychological problems may emerge for the first time. Taken together, the developmental characteristics

of adolescence along with the psychological vulnerabilities of this stage render adolescence particularly important to study in light of the psychological impact of the COVID-19 pandemic.

Emerging adulthood is a relatively new term (e.g., Arnett, 2007) describing the developmental stage between ages 18 to 25, when youth in most western countries are legally considered as adults, but have not yet achieved most of the major developmental milestones of adulthood (like completed education, a steady job, financial independence, marriage etc.). These young people also find themselves in an important developmental stage. Emerging adulthood is often the first time when young people are leaving their home to live independently, and it is also when youth are doing key steps to building their future, by finishing higher education, gaining work experience, building a career, forming mature romantic and sexual relationships etc. (Arnett, 2007). Most of these developmental tasks, like the above-mentioned in the case of adolescence, are also seriously hampered by the COVID-19 pandemic.

There are three main ways via which the COVID-19 pandemic can affect mental health (Gruber et al., 2020). First, this pandemic is a long-term, widespread, high-stakes disaster that disrupts daily routines for a long time and creates severe uncertainty about the present and the future. Therefore, the pandemic is a significant source of stress, for adults and youth alike. Second, it is a multisystemic disaster, as it affects and disrupts individuals, families, communities, states, and economies, having long-term effects on the micro-, meso-, and macro-system (Masten, 2020). Social interactions are disrupted and minimized with resulting increase in loneliness. Many people are threatened by the consequences of getting infected; in cases of infection or death, social support is minimized as well, whereas traditional, typical ways of grieving and handling grief are also disrupted because of the strict social distancing

measures. Third, as Gruber et al., (2020) point out, this pandemic disrupts several protective factors for mental health under stress, such as supportive social interactions, access to mental health services, etc. That is, whereas under more or less typical stressful conditions having supportive social interactions with family members, relatives, friends, or other community members may serve a soothing and stabilizing function, the current pandemic deprives youth from such interactions. Empirical evidence on the effects from past disasters on youth psychological well-being corroborate with the idea that disasters are risk factors for youth mental health.

1.2 Resilience Research and Empirical Knowledge from Past Disasters

Resilience research is an interdisciplinary subfield that cuts across several fields in the social and health sciences, like psychology, education, psychiatry, medicine, and public policy. Resilience describes good adaptation of a dynamic system (a person, a family, a community, etc.) despite threatening conditions and adversity (Masten, 2015). The main focus of resilience research is to investigate the characteristics and the dynamic processes that help individuals, families, and societies successfully adapt under stress. As a field, resilience research emerged in the last five decades (Masten, 2020) and it has been closely linked with the study of disasters and their effects on people and communities. The main aims of resilience research in disasters are to better understand who is doing well and why, as well as to use this understanding to improve and promote the adaptation of those who do less well.

Useful knowledge from resilience research has emerged from past disasters, such as the 2004 tsunami in the Indian ocean (Catani et al., 2008) and the oil spill in the Gulf of Mexico (Osofsky et al., 2016). Key findings from extant resilience research can be distilled down to four factors that summarize why different people get affected from disasters to a different degree: 1.

Exposure dose: how much is the individual exposed; 2. Developmental timing: when in the life of an individual does the disaster hit; 3. Individual differences: pre-existing differences in risks, resources and assets; 4. The socio-ecological framework: how efficiently the socio-ecological framework of the person functions (Masten, 2020). That is, youth are expected to experience more disruption from the pandemic if they are more exposed to the disaster (dose; e.g., school closures without sufficient support for e-learning, having parental income reduced, COVID-related threat for the life of a family member etc.), if they experience the effects of the pandemic on an important transitional time (developmental timing; e.g., school closures just before national exams), if they showed suboptimal adjustment before the disaster (individual differences; e.g., youth already experiencing difficulties with schooling before the pandemic), and if they live in contexts (families, schools, communities) with fewer resources.

2. The Effects of the Pandemic on Youth's Psychological Well-Being: Empirical Evidence

Before presenting some empirical findings on the effects of the pandemic on youth's mental health and psychological well-being it is important to keep in mind that these effects are not equally likely for everyone (Ambrose, 2020; Ioannidis, 2020). ***The pandemic tends to magnify pre-existing social inequalities in resources (such as good quality education, income, access to health care, access to other supporting services) resulting in an unequal impact on youth from different social strata.***

In order to be able to detect changes in mental health and psychological well-being resulting from the pandemic, researchers must have data of the same participants and the same constructs from at least two timepoints, for example before *and* during (or after) the pandemic. Such longitudinal studies can make meaningful comparisons before and during (or

after) the pandemic and solid conclusions regarding the impact of COVID on mental health and psychological well-being may thus be reached. Studies that only collected data during one timepoint in the pandemic can still offer important insights regarding youth's mental health, but such studies are in a weaker position to attribute any effect to the pandemic. This is an important distinction that should be kept in mind when examining the effects of the COVID-19 pandemic on youth's mental health.

2.1 Effects on psychological well-being

Several longitudinal studies from different countries around the world document increased mental health symptoms and decreased psychological well-being during the first wave of the pandemic. For example, a recent study in Australia found that compared to before the pandemic, adolescents' self-reported depressive symptoms, anxiety, and life satisfaction all deteriorated during the first lockdown in Spring 2020 (Magson et al., 2020). Effect sizes for these differences were small for depressive symptoms, medium for anxiety symptoms, and medium/large for satisfaction with life. This means that adolescents experienced the largest deterioration in life satisfaction, whereas changes in depressive symptoms were rather small. Similarly, a study in Southern Italy found large negative effects on young people's mental health during the first month of lockdown, as indicated by ***increases in depression, anxiety, somatic complaints, and aggressive behaviour, and decrease in psychological strengths*** (Parola et al., 2020). Comparable results came from a study in Germany that showed decreased autonomy and psychological well-being, and increased anxiety and depression (Schwinger et al., 2020). A preprint (preliminary) longitudinal study in Norway found small but significant increases in clinical levels of psychiatric problems in adolescents during the lockdown (Hafstad et al., 2020). Also, a longitudinal study including both a clinical and a

community sample from Canada showed that youth in both samples reported deteriorations in their mental health symptoms (Hawke et al., 2020).

Of note, in addition to the above-mentioned negative consequences for adolescent mental health, youth also report some positive aspects of the situation arising from the pandemic (e.g., lockdown). Specifically, a study examining the narratives of a large sample of Italian adolescents (Fioretti et al., 2020) found that *some positive themes emerged in the adolescents' narratives such as discovering oneself, discovering family relationships, and sharing life at a distance*. In addition, a study in Canada documented some positive effects (along the more obvious negative effects), like spending more time with family, having more free time to exercise and sleep, spending less and saving more, and greater self-reflection (Hawke et al., 2020). Also, a preprint (preliminary) study in Australia found that adolescents showed some stress-related growth after the schools reopened, like being able to deal better with uncertainty, controlling small daily hassles from unnecessarily annoying them etc. Specifically, the more students were taught at school before the lockdown to use positive strategies, like emotional management, attention and awareness, coping skills etc., the more able they were to apply adaptive coping strategies (like emotional processing, positive reappraisal, strengths use), and the higher the stress-related growth they reported (Waters et al., 2020). These findings concur with the notion that the psychosocial effects of the lockdown are multifaceted.

2.2 Effects on relationships

Apart from mental health, questions about the effects of the pandemic-related restrictive measures on young people's family relationships are also important to consider. To date, the findings are mixed, reflecting methodological diversity. A longitudinal study that compared

Dutch families six months before and during the first lockdown in the Netherlands (Spring 2020) examined changes in four aspects of parenting and parent-adolescent relationship quality (parental support, parent-adolescent conflict intensity, positive and involved parenting, discipline practices and processes; Donker et al., 2020). For two of these four aspects, a pattern of deterioration was detected: Compared to before the lockdown, parents' reports of positive and involved parenting and adolescents' reports of parental support declined during the lockdown. However, adolescents' reports of conflict intensity also declined, which shows that the effects of the lockdown on families are multifaceted.

Another longitudinal study in the Netherlands applied a shorter-timescale design with eight bi-weekly assessments of adolescents and parents across 16 weeks (Bülow et al., 2020). Adolescents and parents participated four times before the lockdown, and four times during the lockdown, and reported on parental warmth, parent-adolescent conflict, parental autonomy support, psychological control, and behavioural control. Overall, results indicated considerable stability in relationship quality during the lockdown, as only autonomy support temporarily decreased at the start of the lockdown, to slowly recover during the lockdown (Bülow et al., 2020). However, there were considerable differences in how families reacted to the lockdown measures (see section 2.4.1).

Other evidence suggests that spending more time with family during the pandemic was a protective factor for mental health, whereas spending more time online and more time connected virtually with friends were associated positively with depression (Ellis et al., 2020). However, the direction of effects in this latter finding is unclear because this study was cross-

sectional. It can be that depression leads youth to seek more contact with friends as a soothing act. More longitudinal research is needed in this regard.

2.3 Social Media Use

The effect of the pandemic and the ensuing measures on youth's social media use is important, but difficult to understand yet. On the one hand, social media is one way to connect with friends and family that is safe in terms of infection, and, therefore, it may provide a means of social support. On the other hand, studies before the pandemic have established a link between adolescent excessive social media use and lower psychological well-being, such as depression (Ivie et al., 2020), risky behaviours (Vannucci et al., 2020), and body image disturbances (Saiphoo & Vahedi, 2019).

Studies on social media use during the pandemic, and the meaning of such medial use for mental health result in inconsistent findings. For example, a study in Canada found that those youth who reported more social media use during the pandemic, as well as being more connected to friends via social media, also reported more depression (Ellis et al., 2020). In addition, the more COVID-related stress youth reported, the stronger the connection between social media use and depression (Ellis et al., 2020). Similar findings for a negative relationship between social media use and depression were also found in an Australian study (Tillman et al., 2020). However, these findings were not supported by another study (Magson et al., 2020). In addition, the direction of this effect is still unclear; it is equally likely that those with more depression might resort to more social media use, or those with more social media use might subsequently become more depressed.

2.4 Going a step further: Who and Why

While empirical evidence accumulates for the link between the COVID-19 pandemic and changes in mental health and psychological well-being, two relevant questions require further attention. First, who is most likely affected by the pandemic? What characteristics (individual, familial, or community) might predispose some people to more negative effects during the pandemic, or might protect some other people against the negative effects? Second, why does the COVID-19 pandemic contribute to changes in psychosocial adjustment? What are the factors that can explain this link?

2.4.1 Heterogeneity – moderators of effects.

Not all young people react to COVID-related stress and the lockdowns in the same way. Studies have examined factors that might explain who is more affected by these unusual conditions. Several individual, biological, and family factors have been examined for their potential to dampen the effects of the pandemic on psychological well-being.

Adolescents who had been exposed to high levels of Early Life Stress (ELS) several years before the COVID-19 pandemic show more depressive symptoms during the lockdown in Spring 2020 compared to adolescents with lower exposure to ELS (Gotlib et al., 2020), indicating that pre-existing vulnerability plays a role in the responses to stress from COVID-19 (Masten, 2020). Coping skills before the lockdown may also explain some variability in who is most affected by the pandemic. Adolescents with greater active coping skills (coping actively with a problematic situation) showed less decline in parental support during the lockdown, compared to adolescents with weaker coping skills (Donker et al., 2020). Also, feeling socially connected during the pandemic was a protective factor for mental health, meaning that the

more young people reported feeling socially connected, the smaller the changes in mental health during the pandemic (Magson et al., 2020).

A biological factor that moderates the effects of the pandemic on psychological mental health is Heart Rate Variability (HRV), an indicator of parasympathetic autonomous nervous system functioning. Adolescents with higher resting state HRV showed a stronger link between COVID-19 stress and mental health, compared to adolescents with lower resting state HRV (Miller et al., 2020). That is, higher resting HRV adolescents showed less emotional symptoms when under low COVID-19 related stress, and more emotional symptoms when under high COVID-19 related stress; in other words, those adolescents were more sensitive to their environment, for better and for worse (Miller et al., 2020).

Finally, families that experienced difficulties in parent-adolescent relationship qualities before the lockdown (for example, higher parent-adolescent conflicts, or higher parental psychological control) were more vulnerable to the negative effects on parent-adolescent relationship quality from the COVID-19 lockdown (Bülow et al., 2020). This implies that relationship quality and family functioning before the lockdown plays a role in how a dynamic system like the family, will respond to stress.

2.4.2 Mechanisms – mediators of effects.

Next to the link between COVID-19 related stress and/or the lockdown measures with young people's mental health, as well as to the findings indicating who is at higher risk for unfavourable psychological outcomes, an important question to investigate is what explains

those links. Several studies have examined many mediators, that is, factors that “carry” the effects of COVID-19 stress or the lockdowns on psychological well-being.

One possible explanation for why the pandemic affects youth’s mental health is that it hampers their autonomy (Bülow et al., 2020). Autonomy development is a hallmark of adolescence and emerging adulthood, and the pandemic might comprise a major setback for normative development. In fact, the perceived decreases in basic psychological need satisfaction (need for autonomy and need for connectedness) during the lockdown were found to explain the deterioration in mental health symptoms due to the pandemic (Schwinger et al., 2020).

Uncertainty is another possible reason for the negative effects of the pandemic and the lockdown on mental health (Rettie & Daniels, 2020). Specifically, people with higher tolerance for uncertainty were found to be doing better during the first months of the pandemic, compared to people with lower tolerance for uncertainty. Furthermore, this link between uncertainty tolerance and mental health was found to be explained by the coping strategies: people with higher tolerance for uncertainty were able to apply more adaptive coping strategies, which then associated with more favourable mental health outcomes (Rettie & Daniels, 2020; Waters et al., 2020).

Finally, the subjective levels of stress regarding COVID-19 explain part of the debilitating effects of the pandemic on psychological well-being (Gotlib et al., 2020). For youth still living with their parents, parental behaviour might be the filter through which parental stress and

the difficulties of the lockdown are affecting children and adolescents' behavioural and emotional problems (Spinelli et al., 2020).

2.5 Short Summary: What do we know thus far?

Empirical evidence concurs with the idea that the pandemic arisen from COVID-19 and the resulting governmental restrictive measures have had a toll on youth's mental health and psychological well-being. Youth appear to experience high levels of stress, depression, and anxiety, and lower levels of life satisfaction, whereas some evidence also suggests that young people's relationships with parents might also be affected. In addition, studies support one of the core ideas in resilient research, that ***people with better pre-pandemic adjustment and with more access to resources and assets might be affected to a lesser extent by the pandemic, compared to less well-adjusted youth.***

However, it is important to keep in mind that the evidence is far from conclusive, as, for example, some longitudinal evidence suggests mostly stability -only few changes- in family relationships during the pandemic, compared to before the pandemic. In addition, other studies seem to imply that, under favorable pre-existing conditions, there might also be some space for positive development through the pandemic. It is utterly important to keep in mind that the pandemic will most probably need several more months (if not years) to abate and all the evidence in this article is based on what is likely the tip of the iceberg.

3. Implications

Several implications arise from the findings above. Overall, ***youth public policy should focus on decreasing inequalities in access to resources among youth from different socioeconomic***

strata. This could be achieved by allocating more funding to the development and distribution of programs that decrease resource inequalities. For example, not all youth across all (European) countries have access to the necessary technologies to attend online schooling during school closures; decisions should be taken to quickly help those that are most in need. In addition, given the situation is rapidly changing and new measures are often dictated without much time for preparation, public policy should take care to decrease bureaucracy and simplify procedures for access to more resources.

Overall, policies and interventions would likely be beneficial if they help young people maintain a daily structure and daily routines, if they provide youth with opportunities for social rewards and a sense of belonging, as well as if they provide access for youth to resources from which youth can get support (Loades et al., 2020). Sense of belonging is a significant psychological resource, especially in times of stress (Masten, 2020), and feeling socially connected during the pandemic has been found to associate with lower anxiety, depression, and higher life satisfaction during the current pandemic (Magson et al., 2020). Therefore, ***youth services and centres could focus on developing, promoting and fostering access to online or alternative forms of interventions to promote sense of belonging and social connectedness in isolated youth.***

Simply increasing social contacts may not necessarily address young people's sense of loneliness, which implies that additional skills, like recognizing alternatives, and providing structure and a routine during the periods of social isolation may be helpful (Loades et al., 2020). Furthermore, ***engaging youth in the development and administration of youth programs***, holds an additional promise, as youth benefit from opportunities to engage to

recovery. They need validation that what they are experiencing is indeed a disaster with vastly negative consequences, but they also need opportunities to offer support and help, because such opportunities will help them *build a sense of agency and self-efficacy* (Masten, 2020).

Single Session Interventions also hold some promise during the pandemic, because of the ease of access and application (Gruber et al., 2020). These are psychological and psychoeducational interventions that can either be offered by a specialist or be self-administered. Pre-pandemic evidence supports the efficacy of such interventions in alleviating anxiety, problem behaviours, depression and other mental health difficulties in young people (Schleider et al., 2019; Schleider & Weisz, 2017).

4. Conclusion

The COVID-19 pandemic is a global disaster that affects people's lives at multiple levels. There is considerable evidence supporting a deterioration in young people's psychological well-being during the pandemic. Also, studies support the core ideas of the resilience research framework, that the pandemic has non-uniform, unequal effects on youth: those who were doing better before the pandemic, and those with more access to resources during the pandemic are faring better. More importantly, these findings hint to the social inequalities that pre-exist and are amplified from the pandemic (e.g., Ioannidis, 2020). Given that the situation arising from the pandemic is complex, worldwide, and has multisystemic implications that affect individuals directly and indirectly, it might be reasonable to expect that a potentially severe mental health "pandemic" will ensue (Gruber et al., 2020).

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