LEUPHANA
UNIVERSITÄT LÜNEBURG

Mental health of school children before and in times of the Corona-Pandemic

Peter Paulus

ISBN: 978-3-933791-33-7

Contact:
Prof. Dr. Peter Paulus
Centre for Applied Health Sciences
Leuphana University Lueneburg, Germany
Tel: 0049 4131 677 7962
Email: paulus@leuphana.de

2022

Introduction

The coronavirus pandemic, with its fast-spreading variants and high morbidity rates, results in sometimes severe outcomes, mostly in elderly people. Even if young people are largely spared developing severe disease and admission to hospital, they are still susceptible to the virus and can transmit the virus without being ill themselves. They can also be affected by 'long' or 'post-Covid-19' associated illnesses, which are characterised by persistent or new symptoms and health restrictions emerging as much as three months after a SARS-CoV-2 infection, as initial studies show. Patients report muscle or body aches and fatigue, coughing, pain in the throat and chest area, as well as anxiety disorders and depression, compared to a control group (Roessler et al. 2021; Interministerial Working Group 2021).

The preventive measures introduced have also changed, and will continue to change, not only society, culture and the world of work, but also the everyday experiences of young people, as is becoming increasingly well known (Walper et al. 2021). As a result of these measures to contain the pandemic, its accompanying symptoms and consequences, they have had to accept considerable restrictions in their opportunities at school to further their education and personal development.

This article will take a closer look at just one area of these changes and focus on the mental health of children and young people, especially in their roles as students at school.

Schools are crucially important places for children and young people. They are places where they encounter their peers, places where they acquire important social-emotional experiences and behavioural dispositions that they need in order to cope with challenges in their age-specific developmental phases. They are also places for getting to know different ways of life, cultures and social conditions. Time spent in and after school is of critical importance for the formation of a stable and, at the same time, reflexive ego identity, at the core of which mental health is embedded. This is especially true of adolescence with its dynamic development, which is organised formally through school as well as non-formally and informally through sports clubs, activities and their group of friends. Schools are thus not only places where educational learning opportunities are created for learning curricular subjects with cultural significance, although they are now being increasingly addressed in the so-called Catch-Up Programme (BMBF 2021) in Germany.

Methodological issues

Empirical data only provides a rough idea of the pandemic's effects on the mental health of the next generation. This is because the pandemic is a dynamic process, the course of which is also determined by personal and situational factors that reveal diverse

aspects of both direct and indirect stress factors and stress reactions. Some of these aspects will be discussed in this article.

First the data we have about the pandemic in Germany should be examined. The phase of the pandemic in which data were collected is of great importance, for example, whether it was at the beginning of the pandemic during the ten weeks of school closures in the first lockdown in March/April 2020, or later during the lockdown free periods in May–June 2020 before the school holidays in summer 2020; during the partial lockdown in November 2021, or during the second lockdown in early 2021. Another important factor is the form of teaching during the lockdown free periods. Was it in-person teaching or an alternation between digital distance learning and homeschooling? How the samples were determined is also crucial for the significance of the results. Often the circumstances dictated that, for example, random sampling was not possible, and as a result often only cross-sectional data was used as the basis for reports. This leads to biases that limit the validity of the data collected (Bujard et al. 2021). Likewise, the data collected is often of limited quality, because it is mostly survey data and not behavioural and observational data. Finally, the date of publication can be misleading if we infer from it when the data was collected (Leopoldina. National Academy of Sciences 2021, p. 6). Generally speaking, all pandemics are not the same. Empirical data is only comparable when we have precise information on the times and circumstances in which it was collected. It is thus not yet possible to systematically present the results of available studies and account for the specific features of the measures introduced in the context of schools, parental homes and local authorities. Despite this unclear situation, certain trends can be recognised and will be reported in what follows.

Mental health

Before an overview can be given, it is important to clarify what is understood here by mental health, and thus which spectrum of mental phenomena is included. Mental health is not only understood as the absence of mental illnesses, problems, abnormalities and disorders in experience and behaviour, but as a process that, in a successful case, combines two aspects. On the one hand, it is the individual's *productive adaptation* to societal and cultural challenges and, on the other, his or her *self-realisation,* which is about achieving one's own wishes, hopes and even the shaping of one's own life plan. In the well-known definition of the WHO (2019), both aspects come into play, although the process of productive adaptation is in the foreground: 'Mental health is a state of well-being in which a person can realize his or her potential, cope with the normal stresses of life, work productively and contribute to his or her community.'

However, as becomes clear in the following overview, in many cases there is no talk of this at all, but rather of mental disorders, abnormalities and problems, from the presence of which conclusions are drawn about an individual's mental health. These

mental disorders 'represent disturbances in a person's mental health that are often characterised by a combination of distressing thoughts, emotions, behaviours and relationships with others. Examples of mental disorders include depression, anxiety disorders, behavioural disorders, bipolar disorders and psychosis' (WHO 2019). This is what the data shows.

Mental health situation of children and young people before the pandemic

The data available for the period before the pandemic show that about 18–20% of children and adolescents have mental disorders (Ravens-Sieberer 2021; Waldhauer et al. 2018; KKH Kaufmännische Krankenkasse 2021). Such disorders occur more frequently (24.5%) among

Table 1. Prevalence of mental health problems by gender and age for the KiGGS baseline survey and KiGGS wave 2 (Baseline survey: N= 7,100 girls, N = 7,377 boys and KiGGS wave 2 N = 6,637 girls, N = 6,568 boys); CI = Confidence Interval. Source: KiGGS baseline survey (2003–2006), KiGGS wave 2 (2014–2017); (Klipker et al. 2018).

	KiGGS baseline survey		KiGGS wave 2	
	%	(95% CI)	%	(95% CI)
Girls	**15.9**	**(14.9–17.0)**	**14.5**	**13.2–15.9)**
Age group				
3–5	17.2	(14.7–19.9)	13.9	(11.2–17.1)
6–8	14.7	(12.4–17.4)	13.8	(11.6–16.2)
9–11	18.6	(16.5–21.0)	16.4	(13.3–20.1)
12–14	15.9	(13.8–18.3)	13.9	(11.9–16.3)
15–17	13.4	(11.5–15.6)	14.6	(12.2–17.3)
Boys	**23.6**	**(22.3–24.9)**	**19.1**	**(17.7–20.6)**
Age group				
3–5	21.4	(18.9–24.2)	20.9	(17.5–24.7)
6–8	25.3	(22.7–28.2)	22.3	(19.4–25.4)
9–11	28.8	(26.2–31.7)	22.2	(19.0–25.7)
12–14	25.8	(23.1–28.9)	19.2	(16.6–22.0)
15–17	17.2	(14.8–20.0)	12.2	(9.9–15.0)
Total (boys and girls)	**19.9**	**(19.0–20.8)**	**16.9**	**(15.9–17.9)**

students of lower secondary schools, intermediate secondary schools or comprehensive schools, compared to 15.3% among students of grammar schools. Over the years from 2003 to 2017, an increase in abnormalities can be observed, especially among older children and adolescents (Otto et al. 2020). The results of the BELLA study, which is part of the more comprehensive KiGGs study of the Robert Koch Institute, can be used as a reliable, because representative source. It also enables a comparison of the mental health situation of children and adolescents (3–17 years) based on surveys from 2003 and 2006. Table 1 reflects the results, which are listed according to age groups and gender, which in turn can be roughly assigned to categories of the education system: early childhood education (3–5 years) and school (primary or secondary level I and II; 6–

17 years) (Klipker et al 2018). More differentiated analysis reveals that 16% of children and adolescents show symptoms for depression, 15% for anxiety, 12% for aggressive or unruly behaviour and 5% for ADHD (Klasen et al. 2016; 2017; Wartberg et al. 2018).

Evidence of the significance of mental stress among children and adolescents is also found in the numbers of children and adolescents seeking psychotherapeutic treatment, which more than doubled in the years from 2008 to 2019. The BARMER Arztreport (2021) reports that the main reasons were depression (18%) followed by anxiety disorders (14%), with the listed topped by reactions to severe stress and adjustment disorders (23%). Results of the analysis of insurance data (KKH Kaufmännische Krankenkasse 2021; UKE 2014) indicate the role that depression now plays in these early ages of life. For example, diagnoses of depression among 6–18year olds increased by 97% within ten years (2009-2019).

Changes in mental health during the pandemic

The pandemic leaves clear traces on school students' psycho-social development and thus on their mental state. The most fundamental thing to be mentioned here is the restrictions on schooling, which not only affects the training of their intellectual skills, but also makes contact with friends and peers difficult or even impossible (see Dohmen & Hurrelmann, 2021). Furthermore, detachment from the parental home is delayed, and their social life, including leisure activities and consumer behaviour, is largely limited to digital channels. Their personal development and orientation towards life, which for young people unfolds in addressing and engaging with social and political issues, is also only possible to a limited extent. Importantly, however, the pandemic is also a threat to the health of most young people, with potentially severe, long-term and sometimes even fatal consequences. As a result, many also experience increased levels of anxiety and stress, coupled with feelings of a subjectively experienced loss of control and the restriction of access to protective factors and support systems, due to the global extent of the pandemic and its unpredictable duration (Gruber et al. 2020).

The Corona and Psyche studies consist of COPSY-1 (June 2020), COPSY-2 (December 2020/January 2021) (see RAVENS-Sieberer et al. 2020a, b; Ravens-Sieberer et al. 2021; N> 1000, 7–17 years); the pairfam Covid-19 study (May–July 2020) (see Walper & Reim 2020; N= > 824, 16–20 years); and the Young People and Corona studies: JuCo study 1 (May 2020) and study 2 (November 2020) (see Andresen et al. 2020a, b; Wilmes et al. 2020; N= 5520; N= >7000; 15-30 years). They provide an initial good, empirically validated overview of the accompanying psychological symptoms and consequences. Further survey results (see below) supplement and substantiate this overview. The

COPSY Study 2 shows that 85% feel psychological stress, whereas in the first survey it was only 71%. Even at that time, indications of mental health problems had risen from 18% before the pandemic to 30% by May 2020. By the second survey in December 2020/January 2021, the figures for anxiety had risen again from 24 to 30% and for depressive symptoms from 11 to 15%. Specifically, psychological and psychosomatic symptoms such as irritability (54%), problems falling asleep (44%), headaches (40%) and abdominal pain (31%) were reported more frequently. In the second lockdown at the turn of the year 2020/2021, 70% felt that their current quality of life was reduced. This compares to 60% in June and 30% before the pandemic. They also report an increase in school-related problems. Two thirds found school and learning more stressful than before the pandemic. In the pairfam COVID-19 study, a similar proportion (almost 60%) of students reported that they found learning more difficult at home than at school. Similarly, the amount of time students spent learning during the two lockdown periods decreased significantly (with large differences in the mean averages, but at 50 and 60% respectively) compared to the time before the pandemic. Other research shows that school students were anxious, and especially those who were about to graduate from school during the school closures were significantly stressed because they were worried about their future careers or that the school closures could have a negative impact on their school performance (Anger et al. 2020). Others were worried about their future at school. Loneliness and social isolation were also reported by about one third of the young people in the 2nd JuCo study (Andresen et al. 2020). In the LIFE Child study (Vogel et al. 2021), which surveyed 700 families during the first lockdown in spring 2020, children and young people also mentioned, among other things, that they were worried about their family. In the Generation Corona study (Pronova bkk 2021) in which 16–29 year olds were interviewed, more than half admitted that they felt sad and depressed more often, and complained about inner unrest. Among 16–18 year olds, 81% agreed that their lives had worsened considerably. In the Prevention Radar study (Hanewinkel et al. 2020), 58% of the students also reported a drop in life satisfaction, on average by 21%, with 45% feeling stressed. Emotional problems were more prevalent in higher years, at just over 19%, than in lower years, and also more prevalent than in the pre-pandemic years. The reports of feeling down, being unhappy and having to cry frequently (i.e. symptoms of depressive stress) were one third more frequent than before the pandemic. The pairfam study showed that depression symptoms among 16-19 year olds increased from 10% to about 25% after the first lockdown (May/June2020). This would mean that, according to projections by the Federal Institute for Population Research (Bujard et al. 2021), about 477,000 young people were affected, and in total about 1.7 million of those aged 11–17 have experienced a deterioration in health-related quality of life as a result of the pandemic (with data up to July 2021, see Bujard et al. 2021). In this context, it is worth mentioning that requests for therapy for children

and adolescents have increased by 60% compared to 2020, according to the German Psychotherapists Association (DPtV 2021). Topics that are then brought up psychotherapeutic sessions include anxiety related to death, tensions in the domestic environment and the experience of domestic violence (Bundesverband der Vertragspsychotherapeuten 2021). These findings reflect those reported before the pandemic, however in a magnified form. Children and adolescents who come from homes with cumulative stresses (e.g. low income, low educational level of parents) are more likely to experience the negative effects of the pandemic (Autorengruppe Bildungsberichterstattung 2020). They are more likely not to have the necessary space and support at home and therefore have greater problems in distance education, which then also set them back in their educational development.

However, there are not only negative developments to report, or those that show no effects, as in some cases the pandemic has produced explicitly positive effects. For example, the use of digital media led to a reduction in the experience of loneliness (Autorengruppe Bildungsberichterstattung 2020). It also has the potential to promote young people's independence, enable new forms of participation and encourage them to discover new spaces of freedom (Gaupp et al. 2021, Bujard et al. 2021; Federal Ministry for Family Affairs, Senior Citizens, Women and Youth 2020, p. 518ff.), thereby feeling less alone and experiencing less stress (Walper & Reim 2020).

Effects on everyday school life

It is not easy to assess the effects on student mental health and well-being of the behavioural and situational preventive measures taken in primary and secondary schools and classrooms to contain the coronavirus pandemic. These measures are varied and their sequence has been adapted to rapidly changing infection events depending on regional and local circumstances through political decisions at the federal level and in the federal states. It is worth mentioning here the two nation-wide school closures, affecting approximately 11 million school students, resulted in distance learning and emergency childcare as pedagogical measures. In 2020, the first lockdown saw 44 days of almost complete school closures and 59 days of partial school closures. In the second lockdown in 2020/2021, there were a total of 61 days on which schools were completely closed and 112 days on which schools were partially closed (for a chronological overview of the key measures taken to contain the coronavirus pandemic in Germany, see Bujard et al. 2021, p. 10). When schools are open, there have been the following types of teaching, adapted to the type of school: in-person lessons (e.g. for graduating classes, special schools), alternating in-person and online lessons (daily, weekly), limited in-person lessons, distance lessons (as an option when incidence rates exceed 100).

Statistics on the effects of the Covid-19 pandemic are provided by the schools on a weekly basis (https://www.kmk.org/dokumentation-statistik/statistik/schulstatistik/schulstatistische-informationen-zur-covid-19-pandemie.html). In addition, when schools are open, school hygiene measures are in place and compliance is monitored, including physical distancing, wearing masks, and testing. Foot traffic plans must also be drawn up, classrooms redesigned, indoor air hygiene ensured and concepts for organising breaks developed, implemented and monitored.

This means that even in the school year 2021/22, schools will not operate normally as they did before the pandemic. Students, teachers and families will have to continue to live with restrictions due to the coronavirus pandemic.

We will only be able to assess their effect on everyday school life, on learning and ultimately on a child's education once learning and educational trajectories have been systematically studied in theory-informed research. However, as research findings prove that mental health mediates between learning opportunities and learning outcomes (Paulus 20210), it is already clear that the negative psychological effects of the pandemic on school students described above will have an impact on these trajectories. Helmut Fend (2006) describes this relationship as education fulfilling its tasks by working on the 'soul' of the human being, by working on the abilities and attitudes of young learners. It aims to promote mental health, the abilities, the knowledge as well as the mental attitudes of children and young people (Fend 2006, p. 174). Without taking mental health into account, and its functions of providing for a student's productive adaptation and self-realisation, schools will not be able to really fulfil their educational mission. The mental situation of students in the pandemic and the possible post-pandemic once again reinforces its importance for the success of school.

What options do schools have for intervention?

What matters is health management in the school and its goals. It is clear what the most fundamental and thus the most important goal is: Keep schools open as a centre of life for children and young people, and only close them as a last resort. All other goals must be subordinate to this goal. This is because the negative physical, psychological and educational effects of proactive school closures among students, as well as the subsequent economic effects on society, would most probably outweigh the benefits (AWMF 2021).

Health management then means two things. First of all, ‘health must be managed’ and, second, ‘managing must be healthy’. Let’s take the second point first. Here it is a question of ensuring that the processes initiated to combat the pandemic in school do not become a burden for those involved, in this case for the students. What matters is ‘healthy leadership’ at the various organisational levels in the school. With such ‘salutogenic leadership’ (Schneider 2014), schools are able to communicate planned measures, as well as those already introduced, to the students, both in their year and in their lessons, so (1) they understand why they should follow the measures, (2) they have the feeling that they can cope with these measures competently and (3) they can see the reason for these measures. When these three aspects come together, students experience what the Israeli-American stress researcher Aaron Antonovsky describes as a sense of coherence (Antonovsky 1997) and, according to his model of salutogenesis, the decisive conditions for mental health are already given and the foundations for learning at school are already laid.

To the first point now. The question here is: How can the pandemic be managed? In the previous section, we discussed the measures that ultimately have to be implemented at the school level. If they are implemented in accordance with this health management process, preventative measures will serve to maintain and promote mental health. These measures form the framework, as it were, for substantive measures that, in varying degrees of complexity and sophistication, serve in this pandemic situation to (1) shape school life, (2) adapt teaching as needed and (3) develop counselling services. Sengpiel (2021) has made suggestions for schools in Lower Saxony for these three fields of action, among others, but these can also claim validity for the other federal states. For shaping school life (that is, school culture), the psychological and physical needs of the students need to be addressed with a special focus on their social-emotional learning processes.

The mental health promotion initiative *MindMatters, a Whole-School Approach Promoting Mental Health and Wellbeing*, which is widely used throughout Germany, has ten modules offering a wide range of suggestions for students and teaching staff concerning topics such as ‘making friends and belonging’ in secondary schools, ‘bullying’ or ‘coping with stress’. The programme also helps develop in a targeted manner core competencies of social-emotional learning, such as self-awareness, self-management, empathy, as well as relationship and decision-making competencies (www.mindmatters-schule.de; BARMER Ersatzkasse & DGUV 2021).

Furthermore, the stressful situations and support needs of educationally disadvantaged students must be regularly addressed in (pedagogical) conferences. For hours of

coverage, that means creating a safe, reliable framework for the students. A regular morning circle, flexible lesson plans and set counselling hours are examples of how structured timeframes can address the needs, wishes and ideas of the students. It is also important to make agreements about how school members should interact with each other in times of distance learning (e.g. class rules). Regarding 'in-school counselling', schools should offer low-threshold counselling services for students and expand the possibilities of contacting school councillors and school education workers, school social workers and, if necessary, also involving external partners. Finally, counsellors should actively reach out to students easing contact by using different forms of communication, such as chat group meetings, emails, video meetings, telephone calls etc.

Preparing schools for further disasters

The pandemic shows how important health, and especially mental health, is for the success of schools. A pandemic acts like a spotlight by revealing pre-existing mental health problems among students. In this paper the focus was on students. This does not mean that the mental health of teachers and school administrators is irrelevant, on the contrary. They are the central actors not only when it comes to maintaining and expanding the performance of schools in times of the pandemic and a possible post-pandemic, but also in designing schools in which their mental health is understood as a crucial condition for their performance as effective educators. Accordingly, they are also a focus of research.

The coronavirus pandemic will not be the last pandemic, nor will it be the last disaster. The catastrophic flood which hit North Rhine-Westphalia and Rhineland-Palatinate in July 2021 is a harbinger of other events to come. And these will present not only schools, but society as a whole with major challenges if risks are not minimised and resources mobilized through forward-looking interventions, if prevention and health promotion do not take hold. In schools, this will be the task of everyone involved: students, teachers, school administrators, non-teaching staff, parents and partners outside the school.

Literature

Andresen, S., Heyer, L., Lips, A., Rusack, T., Schröer, W., Thomas, S., & Wilmes, J. (2020b): „Die Corona-Pandemie hat mir wertvolle Zeit genommen" – Jugendalltag 2020 ['The Corona pandemic has taken valuable time away from me' - Youth Daily Life 2020]. Hildesheim: Universitätsverlag Hildesheim. https://doi.org/10.18442/163

Andresen, S., Lips, A., Möller, R., Rusack, T., Schröer, W., Thomas, S., & Wilmes, J. (2020a): Erfahrungen und Perspektiven von jungen Menschen während der Corona-Maßnahmen. Erste Ergebnisse der bundesweiten Studie JuCo [Experiences and perspectives of young people during Corona measures. First results of the nationwide study JuCo]. Hildesheim: Universitätsverlag Hildesheim. https://doi.org/10.18442/120

Andresen, S.; Lips, A.; Möller, R.; Rusack, T.; Thomas, S.; Schröer, W.; Wilmes, J. (2020): Erfahrungen und Perspektiven von jungen Menschen während der Corona-Maßnahmen. Erste Ergebnisse der bundesweiten Studie JuCo [Experiences and perspectives of young people during Corona measures. First results of the nationwide study JuCo]. Universitätsverlag Hildesheim. https://doi.org/10.18442/120

Anger, S., Bernhard, S., Dietrich, H., Lerche, A., Patzina, A., Sandner, M., & Toussaint, C. (2020): Schulschließungen wegen Corona: Regelmäßiger Kontakt zur Schule kann die schulischen Aktivitäten der Jugendlichen erhöhen [School closures due to Corona: regular contact with school can increase young people's school activities]. IAB-Forum 23. April 2020. https://www.iab-forum.de/schulschliessungenwegen-corona-regelmassiger-kontakt-zur-schule-kann-die-schulischen-aktivitaten-der-jugendlichen-erhohen/

Antonovsky, A. (1997). Salutogenese. Zur Entmystifizierung der Gesundheit [Unravelling the mysteries of health]. (extended German edition by A. Franke). Tübingen: dgvt-Verlag

Autorengruppe Bildungsberichterstattung. 2020. Bildung in Deutschland 2020 [Education in Germany 2020]. DE: wbv Media. https://doi.org/10.3278/6001820gw.

AWMF (ed.) (2021). S3-Leitlinie Maßnahmen zur Prävention und Kontrolle der SARS-CoV-2-Übertragung in Schulen. Lebende Leitlinie. Kurzfassung [S3 guideline measures to prevent and control SARS-CoV-2 transmission in schools. Living guideline. Abridged version]. https://www.awmf.org/uploads/tx_szleitlinien/027-076k_Praevention_und_Kontrolle_SARS-CoV-2-Uebertragung_in_Schulen_2021-02_01.pdf

Barmer Ersatzkasse & DGUV (Hrsg.) (2021). MindMatters – Mit psychischer Gesundheit gute Schule entwickeln [MindMatters - Developing good schools with mental health]. Wuppertal/ Berlin 2021.

Barmer Arztreport 2021: Psychotherapie bei Kindern und Jugendlichen [Psychotherapy for children and adolescents]. BARMER (ed.).

https://www.barmer.de/blob/282916/043d9a7bf773a8810548d18dec661895/data/barmer-arztreport-2021.pdf.

Berngruber, A. & Gaupp, N. (2021). Unterstützung suchen, Unterstützung leisten – Junge Menschen in der Zeit des ersten Corona-Lockdowns [Seeking Support, Providing Support - Young People in the Time of the First Corona Lockdown]. In N. Gaupp, B. Holthusen, B. Milbradt, Ch. Lüders & M. Seckinger (eds.) Jugend ermöglichen – auch unter den Bedingungen des Pandemieschutzes [Enabling youth - even under the conditions of pandemic protection] (pp. 17-29). München: Deutsches Jugendinstitut

Bettge, S., Wille, N., Barkmann, C., Schulte-Markwort, M., Ravens-Sieberer, U. & Group, B. S. (2008). Depressive symptoms of children and adolescents in a German representative sample: results of the BELLA study. European child & adolescent psychiatry, 17, Supl.1, 71-81.

Bujard; M.; Von den Driesch, Ruckdeschel, K., Laß, I., Thönnissen, C., Schumann, A., Schneider, N.F. (2021). Belastungen von Kindern, Jugendlichen und Eltern in der Corona-Pandemie. BIB. Bevölkerungs. Studien 2 [Stress factors affecting children, adolescents, and parents in the Corona pandemic. BIB. Population. Studies 2]. Wiesbaden: BIB. DOI: https://10.12756/bro-2021-

Bundesministerium Familie, Senioren, Frauen und Jugend (2020). 16. Kinder- und Jugendbericht Förderung demokratischer Bildung im Kindes- und Jugendalter [16th Report on Children and Youth Promoting Democratic Education in Childhood and Adolescence]. Berlin: BMFSFJ

Bundesverband der Vertragspsychotherapeuten (2021). Psychische Belastungen und Lebensumstände bei Kindern und Jugendlichen in der Corona-Krise [Psychological stress and life circumstances in children and adolescents in corona crisis]. Psychotherapie in Politik und Praxis, 1,

DAK-Kinder- und Jugendreport 2019: Gesundheitsversorgung von Kindern und Jugendlichen in Deutschland Schwerpunkt: Ängste und Depressionen bei Schulkindern [Health care of children and adolescents in Germany Focus: Anxiety and depression in school children]. Storm, A. (ed.). Beiträge zur Gesundheitsökonomie und Versorgungsforschung. medhochzwei Verlag, Heidelberg, Neckar.

DAK-Kinder- und Jugendreport 2020: Schwerpunkt Corona-Pandemie: Folgen für die Krankenhausversorgung von Kindern und Jugendlichen [DAK Children and Adolescents Report 2020: focus on Corona pandemic: consequences for hospital care of children and adolescents]. Storm, A. (ed.). Gesundheitsökonomie und Versorgungsforschung. medhochzwei Verlag, Heidelberg.

DAK Präventionsradar 2020: Kinder und Jugendgesundheit in Schulen – Ergebnisbericht 2020/2021 [DAK Prevention Radar 2020: Child and Adolescent Health in Schools - Results Report 2020/2021]. Hanewinkel R., Hansen J., Neumann C., Petersen F.L. IFT-Nord, Kiel. https://dak.de/dak/bundesthemen/praeventionsradar-2381332.html#/

Deutschen Psychotherapeutenvereinigung (2021). Patientenanfragen während der Pandemie [Patient inquiries during the pandemic]. Psychotherapie aktuell, 13,2, 6-13

Dohmen, D. & Hurrelmann, K. (2021). Wie die Pandemie die Entwicklung von Jugendlichen beeinträchtigt [How the pandemic affects adolescent development]. Das Deutsche Schulportal (https://deutsches-schulportal.de/expertenstimmen/klaus-hurrelmann-dieter-dohmen-wie-die-corona-pandemie-die-psychosoziale-entwicklung-von-jugendlichen-beeintraechtigt/)

Gaupp, N.; Holthusen, B.; Milbradt, B.; Lüders, Ch. & Seckinger, M. (eds.) (2021). Jugend ermöglichen – auch unter den Bedingungen des Pandemieschutzes [Enabling youth - even under the conditions of pandemic protection]. Munich: Deutsches Jugendinstitut

Gruber, J., Prinstein, M., Abramowitz, J. S., Albano, A. M., Aldao, A., Borelli, J. L. et al. (2020). Mental Health and Clinical Psychological Science in the Time of COVID-19: Challenges, Opportunities, and a Call to Action. PsyArXiv Preprints, https://doi.org/10. 31234/osf.io/desg9

Interministerielle Arbeitsgruppe (2021). Bericht der Interministeriellen Arbeitsgruppe Long-Covid. Unterrichtung durch die Bundesregierung [Report of the Long-Covid Interministerial Working Group. Briefing by the Federal Government]. Deutscher Bundestag 19. Wahlperiode. Drucksache 19/32659

KKH Pressemitteilung vom 03.06.2021. Corona stresst 77 Prozent der Schüler [Corona stresses 77 percent of students]. https://www.kkh.de/presse/pressemeldungen/schuelerstress.

Klasen F., Meyrose A.K., Otto C. et al. (2017). Psychische Auffälligkeiten von Kindern und Jugendlichen in Deutschland [Mental disorders of children and adolescents in Germany]. Monatsschr Kinderheilkd 165, 402–407. https://doi.org/10.1007/s00112-017-0270-8.

Klasen F., Petermann F., Meyrose A.K. et al. (2016). Verlauf psychischer Auffälligkeiten von Kindern und Jugendlichen: Ergebnisse der BELLA-Kohortenstudie [Course of mental disorders in children and adolescents: Results from the BELLA cohort study]. KindhEntwickl 25, 10–20. https://doi.org/10.1026/0942-5403/a000184.

Klipker, K., Baumgarten, F., Göbel, K., Lampert, T., & Hölling, H. (2018). Psychische Auffälligkeiten bei Kindern und Jugendlichen in Deutschland – Querschnittsergebnisse aus KiGGS Welle 2 und Trends [Mental health problems in children and adolescents in Germany - cross-sectional results from KiGGS wave 2 and trends]. Journal of Health Monitoring 3(3). DOI 10.17886/RKI-GBE-2018-077.

Kuger, S., Walper, S. & Rauschenbach, Th. (Hrsg.) (2021): Aufwachsen in Deutschland 2019 – Alltagswelten von Kindern, Jugendlichen und Familien [Growing up in Germany 2019 - Everyday worlds of children, adolescents and families]. AID:A 2019. Bielefeld: wbv

Leopoldina. Nationale Akademie der Wissenschaften (2021). Kinder und Jugendliche in der Coronavirus-Pandemie: psychosoziale und edukative Herausforderungen und Chancen. 8. Ad-hoc-Stellungnahme – 21. Juni 2021 [Children and adolescents in the coronavirus pandemic: psychosocial and educational challenges and opportunities. 8th ad hoc statement - June 21, 2021]. Frankfurt a.O.: Leopoldina. https://www.leopoldina.org/uploads/tx_leopublication/2021_Corona_Kinder_und_Jugendliche.pdf

Otto C., Reiss F., Voss C. et al. (2020). Mental health and well-being from childhood to adulthood: design, methods and results of the 11-year follow-up of the BELLA study. Eur Child Adolesc Psychiatry. https://doi.org/10.1007/s00787-020-01630-4.

Paulus, P. (Hrsg.) (2010). Bildungsförderung durch Gesundheit [Promotion of education through health]. Weinheim: Juventa.

Pronova bkk (2021). Generation Corona. Ludwigshafen: Pronova bkk

Ravens-Sieberer, U.; Kaman, A.; Otto, C.; Adedeji, A.; Devine, J.; Erhart, M.; Napp, A.-K.; Becker, M.; Blanck-Stellmacher, U.; Löffler, C.; Schlack, R., & Hurrelmann, K. (2020): Psychische Gesundheit und Lebensqualität von Kindern und Jugendlichen während der COVID-19-Pandemie – Ergebnisse der COPSY-Studie [Mental health and quality of life of children and adolescents during the COVID-19 pandemic - results of the COPSY study]. In: Deutsches Ärzteblatt International 117 (48), 828–829. DOI: 10.3238/arztebl.2020.0828

Ravens-Sieberer, U., Otto, C., Kriston, L., Rothenberger, A., Döpfner, M., Herpertz-Dahlmann, B., Barkmann, C., Schön, G., Hölling, H., Schulte-Markwort, M., Klasen, F., & The BELLA study group (2015). The longitudinal BELLA study: design, methods and first results on the course of mental health problems. European Child and Adolescent Psychiatry, 24(6), 651-663.

Ravens-Sieberer U., Kaman A., Erhart M., Devine J., Schlack R., Otto C. (2021). Impact of the COVID-19 pandemic on quality of life and mental health in children and adolescents in Germany. European Child & Adolescent Psychiatry. DOI: 10.1007/s00787-021-01726-5.

Ravens-Sieberer, U., Kaman, A., Erhart, M., Devine, J., Hölling, H., Schlack, R., Löffler, C., Hurrelmann, K., Otto, C. (2021). Quality of Life and Mental Health in Children and Adolescents during the First Year of the COVID-19 Pandemic: Results of a Two-Wave Nationwide Population-Based Study. Available at SSRN: https://ssrn.com/abstract=3798710 or http://dx.doi.org/10.2139/ssrn.3798710.

Roessler, Martin, Falko Tesch, Manuel Batram, Josephine Jacob, Friedrich Loser, Oliver Weidinger, Danny Wende, Annika Vivirito, Nicole Toepfner, Martin Seifert, Oliver Nagel, Christina König, Roland Jucknewitz, Jakob Peter Armann, Reinhard Berner, Marina Treskova-Schwarzbach, Dagmar Hertle, Stefan Scholz, Stefan Stern, Pedro Ballesteros, Stefan Baßler, Barbara Bertele, Uwe Repschläger, Nico Richter, Cordula Riederer, Franziska Sobik, Anja Schramm, Claudia Schulte, Lothar Wieler, Jochen Walker, Christa Scheidt-Nave, Jochen Schmitt (2021). Post-COVID in children, adolescents, and adults: results of a matched cohort study including more than 150,000 individuals with COVID-19. https://www.medrxiv.org/content/10.1101/2021.10.21.21265133v1 Schneider, St. (2014). Salutogene Führung: Die Kunst der gesunden Schulleitung [Salutogenic leadership: the art of healthy school leadership]. Cologne: Carl Link

Sengpiel, J. (2021). Wie können wir Belastungen von Schülerinnen und Schülern in der Pandemie begegnen? [How can we address student stress in the pandemic?]. Schulverwaltungsblatt für Niedersachsen – Nichtamtlicher Teil, 3, 143-147

Thönnissen, C., Wilhelm, B., Alt, P., Reim, J., & Walper, S. (2020): Scales Manual of the German Family Panel. Waves 1 to 11. Release 11.0 (with contributions from: Christine Finn, Madison Garrett, Tita Gonzalez Aviles, Lara Minkus & Martin Wetzel). Retrieved from http://www.pairfam.de/fileadmin/user_upload/redakteur/publis/Dokumentation/Manu-als/Scales_Manual_pairfam_5.0.pdf

Vogel, M.; Meigen, Ch.; Sobek, C.; Ober, P.; Igel, U.; Körner, A.; Kiess, W. & Poulain, T. (2021). Well-being and COVID-19-related worries of German children and adolescents: A longitudinal study from pre-COVID to the end of lockdown in Spring 2020. Journal of Child Psychology & Psychiatry, https://doi.org/10.1111/jcv2.12004

Waldhauer, J.; Kuntz, B. & Lampert, Th. (2018). Unterschiede in der subjektiven und psychischen Gesundheit und im Gesundheitsverhalten bei 11- bis 17-jährigen

Jugendlichen an weiterführenden Schulen in Deutschland: Ergebnisse der Studie zur Gesundheit von Kindern und Jugendlichen in Deutschland: Erste Folgebefragung (KiGGS Welle 1) [Differences in subjective and mental health and health behaviors among 11- to 17-year-old adolescents in secondary schools in Germany: results from the Study on the Health of Children and Adolescents in Germany: first follow-up survey (KiGGS wave 1)]. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz 61(4):374-384. DOI:10.1007/s00103-018-2704-4

Walper, S.; Reim, J.; Schunke, A.; Berngruber, A. & Alt, Ph. (2021). Die Situation Jugendlicher in der Corona-Krise. Kurzbericht [The situation of young people in the Corona crisis. Brief report]. Munich: DJI

Universitätsklinikum Hamburg-Eppendorf (UKE). (2014): Sachbericht des Abschlussberichts der BELLAplus-Befragung [Expert report on the final report of the BELLAplus survey]. https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Gesundheit/Berichte/Abschlussbericht_BellaPlus_2014-11-26.pdf.

Walper, S., & Reim, J. (2020): Young People in the COVID-19 Pandemic: Findings from Germany. International Society for the Study of Behavioural Development Bulletin, 2(78), 18-20.

Walper, S., Sawatzki, B., Alt, P., Reim, J., Schmiedeberg, C., & Thönnissen, C. (2020): The pairfam COVID-19 survey: Design and instruments. pairfam Technical Paper 15. https://www.pairfam.de/fileadmin/user_upload/redakteur/publis/Dokumentation/TechnicalPapers/Technical_Paper_15.pdf

Walper, S.; Reim, J.; Schunke, A., Berngruber, A. & Alt, Ph. (2021) Die Situation Jugendlicher in der Corona-Krise. Kurzbericht [The situation of adolescents in the corona crisis]. Munich: Deutsches Jugendinstitut

Walther, B., Hanewinkel, R. & Morgenstern, M. (2014). Effects of a brief school-based media literacy intervention on digital media use in adolescents: cluster randomized controlled trial. Cyberpsychology, Behavior, and Social Networking, 17(9), 616-623.

Wartberg, L., Kriston, L. & Thomasius, R. (2017). The prevalence and psychosocial correlates of Internet gaming disorder—analysis in a nationally representative sample of 12- to 25- year-olds. Deutsches Ärzteblatt International, 114(25), 419-424.

WHO (2019). Psychische Gesundheit – Faktenblatt [Mental Health – Fact Sheet]. https://www.euro.who.int/__data/assets/pdf_file/0006/404853/MNH_FactSheet_DE.pdf

Wilmes, J., Lips, A., Heyer, L. (2020): Datenhandbuch zur bundesweiten Studie JuCo [Data manual for the nationwide JuCo study]. Hildesheim: Universitätsverlag Hildesheim.

Leuphana University Lueneburg

Centre of Applied Sciences of Health (CASH)

2022