The impact of COVID-19 lockdown on the general health status of people with chronic health conditions in Belgium : a cross-sectional survey study

The impact of COVID-19 lockdown on the general health status of people with chronic health conditions in Belgium: a cross-sectional survey study

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Abstract

Background: Patients with chronic health conditions risk aggravation of their health status due to reduced access to health services during the COVID-19 related lockdown.

Objectives: To investigate the impact of Belgian COVID-19 measures on general health status (i.e. worse or stable/better) of patients, adult and pediatric, with chronic health conditions and how this change in health status relates to personal and health behavior-related factors.

Design: A cross-sectional study using an online survey was conducted during the first COVID-19 related lockdown in Belgium.

Methods: Associations between change in health status since the lockdown and (change in) personal and health behavior-related factors (including physical activity, access to healthcare services and social activities) were investigated.

Results: In adults (n=561), almost all personal factors, including feelings of distress, depression, anxiety, somatization and low self-efficacy were significantly worse in patients with a worse health status during the lockdown (n=293, 52%) compared to patients reporting a stable/better health status ($p<0.001 – 0.002$). Also, these patients reported lower physical activity levels, more teleconsultations and less social activities ($p<0.001 – 0.006$). In children (n=55), all surveys were completed by a proxy (parent(s)/guardian) who reported a worse health status in 38% of the children. Level of distress of the child ($p=0.005$) since the lockdown and somatization of the parent(s) ($p=0.0018$) was significantly worse in children with a worse versus a stable/better health status.

Conclusion: Fifty-two percent of the adults and 38% of children with chronic health conditions reported worsening of their general health status during the lockdown in March-May 2020 in Belgium. Negative personal factors and unhelpful health behavior seems to be associated with a worse health status.

Keywords: COVID-19, chronic diseases, rehabilitation, health status

Introduction

Patients with chronic conditions are affected twice by the coronavirus 2019 (COVID-19). First, they are more at risk for serious manifestations of the disease, with higher morbidity , higher mortality (Wu and McGoogan, 2020) and higher impact on mental health (Tee et al. , 2020). Second, they risk aggravation of their chronic condition due to reduced physical activity levels and changed lifestyle factors such as reduced social contact as consequences of the lockdown imposed by the government (Palmer et al. , 2020). Moreover, in Europe, these lockdowns led to more than 1 million patients per day who were denied health services, including rehabilitation care (Negrini et al. , 2020) and mental health services (Hao et al. , 2020). Inpatient rehabilitation was severely affected, and outpatient services completely stopped in the majority of European countries surveyed. For children, parents reported loss of essential care services (at and outside school) and lack of help and support as a possible threat (Cacioppo et al. , 2020, Neece et al. , 2020).

First, physiotherapy and physical activity are important in the management of chronic conditions (Ding et al. , 2016, Reis et al. , 2016). As such, during the lockdown, self-imposed physical activity and/or telerehabilitation, which was still in its infancy at the time, were the only alternatives. It has previously been shown that telerehabilitation can be (cost-)effective and leads to an improved physical function and increased quality of life in both adult and child patient populations (Cottrell et al. , 2017, Kloek et al. , 2018, van Egmond et al. , 2018). However, due to the abruptness of the installed lockdown, telerehabilitation programs were most probably not yet sufficiently developed and installed to completely replace its face-to-face counterpart. Moreover, for more than 60% of children with physical disabilities, the

parents performed (physio)therapy during lockdown as shown in a French study (Cacioppo, Bouvier, 2020). Consequently, a decrease in physiotherapy and physical activity levels is expected in these vulnerable chronic population (Tison et al. , 2020). Second, based on the International Classification of Functioning Disability and health (ICF), a person's functioning and disability arise from the interaction between health conditions and contextual factors, namely environmental factors (e.g. access to health-care, health care workers, etc.) and personal factors (e.g. gender, age, coping styles, values, beliefs, etc.) (World Health Organisation, 2001). As such, the lockdowns have shown to have a negative psychological effect, with, among others, increased emotional distress, anxiety, fear, depression, suicidality, public stigma, sleep disturbance etc. (Mukhtar, 2020). Also in youngsters, the acute phase of the pandemic is associated with a disruption of their lifestyle, social isolation and increased pressure within families (Fegert et al. , 2020, Ghosh et al. , 2020).

Considering these restrictions in access to physiotherapy, dependence on self-imposed physical activity and the importance psychosocial factors in chronic conditions, the installed lockdown in the period from 17th of March until 4th of May 2020 may have had a major effect on general health status in this population (Palmer, Monaco, 2020). Therefore, the goal of this study was to investigate how the Belgian COVID-19 measures affect the general health status of patients, adult and paediatric, with chronic health conditions and how these changes relate to access to health care, physical activity levels and (changed) personal factors. Therefore, we will first compare personal factors of patients with chronic health conditions who report worsening of their general health status versus patients who report no change or even a better health status since the COVID-19 related lockdown. Second, we will compare health-behavior related factors including physical activity, health care use and social life

between those groups. At last, we will explore associations between personal and health-behavior related factors on the one hand and change in health status on the other hand.

Methods

Approval for this trial was obtained by the local ethics committee of the University of Antwerp (Belgian registration number: 3002020000011) and the trial was coordinated by the MOVANT-UAntwerp department. The study is reported following the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) statement (von Elm et al. , 2008).

Study design and setting

A cross-sectional study using an online survey was conducted during the COVID-19 related lockdown between March 17th and May 4th 2020 in Belgium. The survey was launched the 22nd of April and closed 17th of May. An overview of the COVID-19 restrictions during this period can be found in Table 1. An online survey was designed using Qualtrics and consists of a combination of self-compiled questions and validated questionnaires.

Participants

Patients (including children < 18 years and adults > 18 years) with at least one chronic health condition, including diabetes mellitus, heart conditions, lung conditions, rheumatic conditions, osteoarthritis, chronic muscle and/or joint pain, fibromyalgia, chronic fatigue syndrome, (post) cancer, neurological disorders (including Parkinson's disease, Cerebrovascular Accident, Amyotrophic Lateral Sclerosis) developmental disorders (including Autism Spectrum Disorder, Developmental Coordination Disorder, Attention-Deficit/Hyperactivity Disorder), motor neuron disorders (including cerebral palsy, spina bifida), genetic disorders, psychiatric disorders, auto-immune disorders, consequences/resurgence of burns and/or lymphedema (congenital or not) were asked to fill

in the online survey. For children up to the age of 12 years (or for children whose chronic disorder prevents them from completing the questionnaire autonomously), the questionnaire was completed by the parent(s)/guardian. Children between 12 and 18 years completed the survey themselves. This was indicated in the questionnaire itself. Participants were recruited through social media (patient, research and professional organisations), the professional association of physiotherapists, rehabilitation centres and hospitals within the network of the research group 'MOVANT' (MOVement ANTwerp) of the University of Antwerp.

Variables

The primary outcome of this study was self-reported change in the patient's general health status since the lockdown (worse *or* stable/better health status). Patient characteristics were collected through self-composed questions including diagnosis, gender, age, education level and daily occupation. An overview of all variables is given in Table 2a for adult population and Table 2b for child population.

Statistical analyses

Results are reported separately for adults (> 18 years) and children. Normal distribution of the data was verified with the Shapiro-Wilk test and visual inspection. For the adult population, outcomes are normally distributed. For the child population, a non-normal distribution was found. Given this, for the patient characteristics, mean and standard deviation (adults) and median and quartile 1 -3 (children) are reported for continuous variables and numbers and percentages for ordinal variables. First, both personal factors and activity and health behavior-related factors were compared between 1) patients with worse health status and 2) patients with no change in or better symptoms since the lockdown.

Continuous variables were compared between the groups using an independent t-test (adults) or Mann-Whitney-U test (children), whereas the association between categorical variables was tested using a Chi^2-test. As measure of effect sizes, difference in means (and 95% confidence intervals) for the t-test and the value (and degrees of freedom) for the Chi^2-test are given. Given the non-parametric testing in the children sample, no effect sizes for the continuous variables could be calculated. In case of a significant association between categorical variables with more than 2 levels, a posthoc analysis was carried out using a Bonferroni-corrected Chi^2 residual analysis, to search which cells showed the strongest deviation from the expected count under the null hypothesis of independence (MacDonald and Gardner, 2000). Ordinal variables were tested for a difference in trend between both groups using a Cochran-Armitage test. Since a large number of hypotheses was tested, p-values were corrected using the Bonferroni correction (i.e. 0.05/#tests).

Second, we fitted a logistic regression model with change in health status (worse *or* stable/better) as dependent variable. Independent variables are the same personal factors and activity/participation-related factors listed above. The 10 factors with the lowest p-value were selected for a forward stepwise logistic regression procedure. Through this regression model, the effect size was obtained by calculating the Area Under the ROC curve (AUC) using the predicted probability of the final model. Additionally, the percentage of correct predictions of health status was calculated. Demographics, including age, gender, education level and work status were added to the model as covariates.

Statistical analyses were performed using Statistical Package for the Social Sciences software (SPSS for Macintosh, version 26.0).

Results

In total, 641 adult patients and parents of 62 children responded and completed the online survey. One child was excluded because the self-reported age was above 18 years. Due to missing data for diagnosis of their chronic condition (n=15 adults and n=4 children) and the primary outcome (change in health status since the lockdown) (n=65 adults and n=2 children), a final sample of 561 adults and 55 children with a chronic health condition was available for analyses.

PART I: ADULTS

Characteristics of the adult participants are given in Table 3. Two hundred nighty-three patients (52%) reported worsening of their general health status since the lockdown. Of the 268 (48%) patients that did not report worsening of their general health status, 45 (8%) reported an improvement in their general health condition. Within patients with rheumatic conditions, osteoarthritis, chronic muscle and/or joint pain, fibromyalgia, chronic fatigue syndrome and psychiatric disorders significantly more patients reported worsening of their general health status than compared to the other groups. In patients with a university degree, fewer patients reported worsening of their health status compared to patients with other educational levels. Most respondents were unemployed (39%). In patients working full-time, fewer patients reported worsening of their health status compared to the other employment groups.

First, personal factors were compared between patients with chronic health conditions reporting worsening of their health status versus patients reporting a stable/better health

status (Table 4a). All personal factors were significantly different between both groups. Patients reporting a worse health status had higher levels of distress, depression, anxiety and somatization and lower self-efficacy. They reported also significantly worse general health-related quality of life and more problems with self-care, pain/discomfort and feelings of anxiety/depression. Further, results on the change in emotional status since the lockdown were significantly different between groups as well. For anxiety, introspection and feelings of powerlessness, patients with a worse health status reported a significantly larger increase in these feelings. Similarly, for change in motivation and self-efficacy, both groups reported a decrease of these feelings, with a larger decrease in the group of patients with a worse health status. Finally, for depression feelings, distress and feelings of helplessness, patients with a worse health status reported an increase while patients with a stable/better health status reported a decrease.

Second, health behavior-related factors were compared between both groups (Table 4b). Patients who reported a worse health status had a significantly lower level of physical activity and more problems with mobility and daily activities. Regarding healthcare use, overall, patients feeling worse consulted their general practitioner and physiotherapist more often before the lockdown. During the lockdown, most patients in both groups had no consultations with their healthcare providers. However, more patients with a worse health status still had consultations, although less frequently than before. Also, significantly more patients with a worse health status used teleconsultations with their general practitioner (17% vs. 10%, $p<0.001$). Before the lockdown, engagement in social activities differed significantly between both groups ($p<0.001$). More specific, significantly more patients with a worse health status had a limited social life compared to those with a stable/better health status (36% vs. 16%,

p<0.001). Similarly, more patients with a stable/better health status had a busy social life before the lockdown (43% vs. 27%, p=0.019). During the lockdown, patients in both groups reported mostly a decrease in social life activities, without a difference between groups. At last, more patients with a worse health status reported a decrease in active daily activities during the lockdown (74% vs. 49%; p<0.001) while more patients with a stable/better health status even reported an increase in activities (29% vs. 9%; p<0.001). Most frequently reported reasons for a decrease in activities were loss of supervision by a physiotherapist and no appropriate infrastructure available. Most frequently used tools to stay active in both groups were available exercise materials at home, applications and website with training programs and (live)-videos with exercises.

For the stepwise forward logistic regression procedure, following variables were selected based on the lowest p-values from the between group analyses described above: pain/discomfort (p<0.01), daily activities (p<0.01), somatization (p<0.01), distress (p<0.01), mobility (p<0.01), general health-related QoL (p<0.01), anxiety/depression (p<0.01), depression (p<0.01), self-efficacy (p<0.01) and self-care (p<0.01). Four hundred twenty-four (76%) full cases were available for this analysis. The final regression model, including pain/discomfort, stress and daily activities, reached an AUC of 0.848. When using a predicted probability of 0.50 as cut-off, the model can correctly classify the outcome for 76% of the individuals in the study compared to 54% in the null model (i.e., the model in which all the independent variables have zero regression coefficients and all thus individuals are equally likely to have a better or worse health status). For this cut-off of 0.50, sensitivity (i.e., identifying a patient at risk for a worse health status) is found to be 78%.

PART II: CHILDREN

For all children, the survey was completed by a proxy (parent(s) or guardian(s)). Characteristics of the children are given in Table 5. Twenty-one (38%) parents reported worsening of their child's general health status since the lockdown. For 34 children (62%) no change (n=29) or an improvement (n=5) in their general health status was reported.

Comparison of personal factors of the parent between the stable/better group and the worse group is presented in Table 6a, those of the children themselves are presented in Table 6b. After Bonferroni correction, only the change in level of distress of the children and the somatization behavior of the parents remained significantly different between the two groups.

None of the health behavior-related factors differed significantly between both groups (Table 6c). Both groups reported moderate to severe problems in mobility and activities of daily life. Regarding health care use, before lockdown the children showed frequent visits to general practitioners or specialists and more than half regularly attended a physiotherapist. During the lockdown, mostly a single visit to a health care provider was reported. Before the lockdown, mostly a moderate to busy social life was reported. During the lockdown, the majority reports a decrease in social activities and active daily activities. Interestingly, in the stable/better group 4% report an increase in active daily activities. The most frequently reported reason for a decrease in active daily activities was loss of supervision by a physiotherapist or sports club followed by limited infrastructure. Lack of motivation is reported in 9/18 children (50%) in the worse group compared to 5/24 (21%) in the stable/better group, which is a non-significant trend (p=0.047). Only a few people report lack

of time and financial reasons. Most frequently used tools to stay active in both groups were exercises provided by the school, day-care center, physical therapist or sports club and sports materials/activity games that were available at home. More than 1 in 4 children used TV or social media to stay active whereas specifically designed applications/websites for physical activity were rarely used.

For the forward stepwise logistic regression model, following variables were entered in the model, based on their significant difference between groups: change in level of distress (p=0.002) and somatization (p=0.002). Thirty (55%) full cases were available for this analysis. In the regression model both variables were significant and reached an AUC of 0.960. When using a predicted probability of 0.50 as cut-off, the model can correctly classify the outcome for 90% of the individuals in the study compared to 60% in the null model (i.e. the model in which all the independent variables have zero regression coefficients and all thus individuals are equally likely to have a better or worse health status). For this cut-off of 0.50, sensitivity (i.e., identifying a patient at risk for a worse health status) was found to be 83%.

Discussion

The current study aimed at investigating how the Belgian COVID-19 measures during the lockdown in March until May 2020 affected the general health status of patients with chronic health conditions. Changes in general health status of adults and children were questioned through an online survey and related to personal factors and health behavior-related factors. In the adult sample, patients with a university degree and patients working fulltime, fewer reported worsening of their health status. Almost all personal factors, including feelings of distress, depression, anxiety, somatization and self-efficacy were significantly worse in patients with a worse health status during the lockdown. They also reported a larger deterioration in these emotions since the lockdown compared to patients with a stable/better health status, which is also reflected in worse general health related quality of life. For the health behavioral-related factors, patients reporting a worse health status were less physically active. Also, this group consulted more regularly a medical doctor and physiotherapist both before and during the lockdown and used more teleconsultations. At last, more patients in the group with a worse health status reported limited social activities before the lockdown, a larger decline in performing daily activities during the lockdown and less access to helpful tools to remain active.

In children, a worse general health status was reported in 38% of the cases which, contrary to adults, seems to be independent of age, gender, diagnosis or daily occupation. Personal factors of both the parent (somatization) and child (change in distress) did differ significantly between the group with a worse general health status versus the group with a stable/better health status. While both groups reported a large decrease in active daily activities, no differences were found in level of physical activity. Although, the average level of physical

activity is below the previously determined cut-off values for healthy children of 2.73 (PAQ-C) or 2.75 (PAQ-A) indicating an insufficient level of physical activity (Benítez-Porres et al. , 2016).

One of the aims of this study was to describe personal factors related to a worse health status. In the adult population, one interesting finding is that mainly participants with musculoskeletal disorders dominated by chronic complaints such as pain and fatigue reported a worse health status. Previous studies evaluating personal factors in these populations demonstrate high levels of stress, anxiety and depression and low levels of self-efficacy to be associated with their disease status (Ali et al. , 2017, Kamper et al. , 2015). In particular adequate self-efficacy, which is defined as an individual's confidence or belief in their ability to achieve behavioral goals in a specific field, seems to be crucial in the context of a lockdown to prevent unhelpful behavioral changes (Bandura, 1977). It has indeed been shown that self-efficacy plays a role in the number of visits to health-care settings regardless of pain severity and is a strong predictor of adherence to unsupervised exercise programs (Souza et al. , 2020). Also, populations with chronic pain and fatigue have been reported to have lower educational levels and worse socio-economic health status compared to the healthy population (Collin et al. , 2017, Dionne et al. , 2001, Jason et al. , 2009, Lee et al. , 2020). Our results indicate that these personal factors also contribute to a worse health status since the lockdown. Possibly, higher educational levels contribute to better health literacy, more resilience and understanding of a patient’s own disease status and thus better self-efficacy (Farley, 2020). Job security/fulltime work and a secure financial status are closely associated with this and may be protective for a decline in health status as well. In line with this, the educational level of the mother was higher in children of which they reported a stable/better health status,

although not significant. In the child sample, similar trends were observed. First, it is interesting to note that parents who score higher on somatization also tend to report a worse general health status for their child during the lockdown. The mediating role of parental response and catastrophizing to a child's disease status has already been reported previously (Langer et al. , 2009). The parent, as observer, might tend to interpret ambiguous signals from their child as pain or distress leading to the notion of a worse general health status, certainly in stressful situations such as a lockdown.

The second aim of this study was to describe differences in health behavior-related factors between groups with a different health status. During the lockdown in Belgium, the government limited access to non-urgent healthcare. Especially people with chronic health disorders were affected by these measures as most of their healthcare visits are follow up visits or not considered as urgent, given the slow progression of most chronic health conditions. Patients reporting worse health status during lockdown reported to consult healthcare more frequently already before lockdown. Despite the imposed limitations in access to health care, they still consult their healthcare providers more often than patients reporting a stable/better health status. This result is hopeful and may reflect a certain degree of empowerment/self-efficacy to seek care. However, the reason of the visit was not surveyed and as such, more frequent visits may also reflect a worse health in itself and/or high dependence on healthcare providers in the management of their chronic disorder (Lee, Park, 2020). Other research confirms that the perceived impact of the pandemic mediated between physical symptoms resembling a COVID-19 infection and consequent health status, highlighting the importance of the need for health information (Wang et al. , 2021). Proper self-management skills may be more beneficial and help patients with chronic conditions to

handle increased feelings of stress, depression and anxiety as described above and less relying on healthcare providers (Elbers et al. , 2018, Ruehlman et al. , 2012). Another hopeful finding is the access to teleconsultations which may promote self-efficacy (Farley, 2020). Patients also had to depend on self-imposed physical activity. It has been described that people with chronic disorders are less active in general, although physical activity is one of the main pillars in management of chronic conditions characterized with chronic pain and fatigue (Foster et al.). Not reaching the recommended levels of physical activity may result in a vicious circle of worsening health status and even less physical activity. Interestingly, this decline in physical activity during the COVID-19 pandemic and association with mental health status in particular has also been demonstrated in the general population in different countries (Asiamah et al. , 2020, Martinez et al. , 2020). Additionally, limited social activities *before* lockdown appeared to be a crucial factor in health status *during* lockdown. Patients at risk for worse health status should be able to rely on a social network. Previous studies indeed highlight the importance of social support in chronic disease (Strom and Egede, 2012). A recent review indicates the possible role of video calls/teleconsultations to reduce social isolation in elderly (Gallant, 2003, Noone et al. , 2020). At last, a practical issue highlighted by both adults and children in the present study includes access to resources/tools to stay active such as online videos or apps. Most study participants preferred tools with a certain degree of supervision and personalized care instead of standard, freely accessible tools.

Finally, the results of the logistic regression model in adults indicate that the degree of pain/discomfort, level of stress and problems with daily activities are most predictive for health status during lockdown. Interestingly, these three factors cover a person's functioning at the different levels of the ICF model and may thus be informative for clinical practice in the

identification of patients at risk for a worse health status (World Health, 2001). In addition, participation should be evaluated as well. In children, the available dataset for the logistic regression model was limited but strong results were obtained confirming that personal factors in both parent (somatization) and child (distress) are highly determinative for the parent-reported general health status in children with chronic conditions.

A number of limitations need to be noted regarding the present study, First, the cross-sectional design of the study prevents us from drawing firm conclusions on the direction and causality of the described associations. Second, no information on the health status before the lockdown was available. Third, a combination of validated questionnaires and self-compiled questions was used. In particular in the child sample, the only significant result was found on a self-composed question. Additionally, a high collinearity between certain outcomes can be expected. Fourth, selection bias may have influenced the results. For example, mainly women and adults with chronic pain responded to the questionnaire. While in the children, response rate was much lower, resulting in a relatively small sample size and more chance of type II errors due to a low statistical power. Also, characteristics of non-respondents are not available. A specific limitation for the child participants may be that all outcome measures were completed by a proxy (parent(s)/guardian). Also, the reason for completion by a proxy was not registered. It should be questioned to which extend the health status is in fact a representation of the health status of the child itself or the parent completing the questionnaire.

Although the findings should be interpreted with caution, this study has several strengths. First, a comprehensive set of personal and health-behavioral factors was evaluated, using

mainly validated questionnaires. Second, through the online survey, a considerably large sample of adults was recruited with a wide range of chronic conditions.

Future perspectives

First, physical activity is a combined measure of work-, household-, sports-, and occupational physical activity levels. It may be interesting to explore in more detail at which level patients have the greatest opportunity to increase total physical activity level in specific situations such as a lockdown with limited access to healthcare and public facilities. Second, to improve self-efficacy of patients at risk for a worse health status during stressful and restricting events such as lockdown situations, educational interventions are recommended (Souza, Martins, 2020). These educational interventions include a biopsychosocial approach targeting emotions, cognitions and barriers for self-management and behavioral changes in general (Clarke et al. , 2011, Watson et al. , 2019). Also, parents from children with chronic conditions can benefit from these types of interventions relieving their stress and improving their resilience. Typically, these interventions are given face-to-face by medical doctors, physiotherapist and/or psychotherapist. However, online programs are available as well and have been shown to be effective for e.g. psychiatric symptoms during COVID-19 (Ho et al. , 2020) and insomnia (Soh et al. , 2020). Teleconsultations may also be valuable in a self-management program to have a regular check with a healthcare provider, e.g. to handle flare ups or specific situations such as a lockdown. Although the focus of the present study was on physiotherapy practices, continued access to healthcare providers in other disciplines, e.g. occupational therapy and psychology, are equally important. Other arguments for teleconsultations are the possible cost-effectiveness and lower barrier for healthcare, certainly if reimbursement is provided (Zhang and Ho, 2017).

Conclusion

Fifty-two percent of the adults and 38% of children with chronic conditions who responded to an online survey reported worsening of their general health status during the lockdown from March until May 2020 in Belgium. This worse health status appears to be associated with negative personal factors such as distress in both adults and children and depression, anxiety and lower self-efficacy among others in adults. Also, lower physical activity levels, less face-to face consultations and less social activities were found in this group compared to patients with a stable/better health status.

Ethical approval
Approval for this trial was obtained by the local ethics committee of the University of Antwerp

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Declaration of interest

The authors report no conflicts of interest.

Data availability statement

The data that support the findings of this study are available from the corresponding author [ADG] upon reasonable request.

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Table 1. Overview of the COVID-19 restrictions from March 17th until May 4th 2020 in Belgium

1) Citizens are obliged to stay at home in order to avoid contact outside their family as much as possible, except to go to work and essential travel (e.g. to the doctor, food stores, bank, pharmacy, etc.).
2) Outdoor exercise is allowed with family members living under the same roof and with one friend and even recommended.
3) Day-care stay open, primary and secondary schools are closed, higher education is organised digitally.
4) Non-urgent ambulatory health care, including physiotherapy, is postponed to ensure hospitals have enough capacity for COVID-19 patients.
5) Gatherings are not allowed.
6) Companies - regardless of their size - are required to organize telework for every function where this is possible, without exception.
7) Non-essential stores, catering industry and retail outlets are closed, with the exception of food stores, pharmacies, pet food stores and newsagents.
8) Public transport is organized in such a way that social distancing can be guaranteed.
9) Travelling outside Belgium that is not considered necessary is prohibited.

For more details: https://www.belgium.be/nl/nieuws/2020/coronavirus_versterkte_maatregelen; https://www.info-coronavirus.be/nl/

Table 2a. Overview of the collected variables in adults.

Primary outcome measure	
Health status	Self-composed question on self-reported change in the patient's general health status since the lockdown, i.e. March 17th 2020 (worse or stable/better health status).
Personal factors	
Distress, depression, anxiety and somatization	The Four-Dimensional Symptom Questionnaire (4DSQ) (Terluin et al. , 2016) is a self-report questionnaire comprising 50 items distributed over four scales (distress, depression, anxiety and somatization). The items are answered on a 5-point frequency scale from "no" to "very often or constantly". In order to calculate sum scores the responses are coded on a 3-point scale: "no" (0 points), "sometimes" (1 point), "regularly", "often", and "very often or constantly" (2 points). The Distress scale contains 16 items and has a score range of 0–32, the Depression scale contains 6 items and has a range of 0–12, the Anxiety scale contains 12 items and has a range of 0–24, and the Somatization scale contains 16 items and has a range of 0–32. The 4DSQ uses a time-frame reference of 7 days. Lower scores indicate less problems.
Self-efficacy	The Dutch General Self-Efficacy Scale (SES) (Luszczynska et al. , 2005) is a 10-item psychometric scale that is designed to assess optimistic self-beliefs to cope with a variety of difficult demands in life. Items are scored on a 1-4 scale resulting in a total score of 10-40 with higher scores for higher level of general self-efficacy.
General quality of life status	The Visual Analogue Scale (VAS) of the EuroQol – 5 Dimensions – 5 severity levels (EQ-5D-5L) questionnaire records the respondent's overall current health on a VAS ranging from 'the best health you can imagine' (100) to 'the worst health you can imagine' (0) (Herdman et al. , 2011).
Self-care, pain/discomfort and anxiety/depression	The dimensions 'self-care', 'pain/discomfort' and 'anxiety/depression' of the EQ-5D-5L are each scored 1-5 (no problems to unable to /extreme problems) (Herdman, Gudex, 2011).
Change in emotional status	A self-composed question was made to evaluate changes in emotional status since the COVID-19 lockdown (i.e. March 17th), including the emotions anxiety, depression, motivation, self-efficacy, distress, introspection, powerlessness and helplessness. For each emotion a score between 0 (extreme decrease since the lockdown) and 10 (extreme increase since the lockdown) is given.
Health-behavior-related factors	
Level of physical activity	The International Physical Activity Questionnaire - Short Form (IPAQ-SF) records the activity of four intensity levels: 1) vigorous-intensity activity such as aerobics, 2) moderate-intensity activity such as leisure cycling, 3) walking, and 4) sitting. A total score for physical activity level is calculated and expressed in MET-minutes/week (Lee et al. , 2011).
Mobility and usual activities	The domain scores 'mobility' and 'usual activities' of the EQ-5D-5L are each scored 1-5 (no problems to unable to /extreme problems) (Herdman, Gudex, 2011).
Healthcare use	A self-composed question was made to record frequencies of consultations with healthcare providers (general practitioner, specialized doctor and/or physiotherapist) before and during the lockdown.
Social life	Two self-composed questions were used to record participation in social life before the lockdown (busy/moderate/limited) and changes in participation

	in social activities (decrease, Same or increase) since the lockdown (i.e. March 17th), respectively.
Change in active daily activities	A self-composed question was used to record changes in active daily activities (including sports, active hobbies, physical work) (decrease, Same or increase). Additionally, reasons for a possible decrease in activities (including not enough space, time, supervision, financial resources, infrastructure and/or motivation) and available resources to stay active (including booklets and/or videos provided by a physiotherapist or trainer, infrastructure at home, teleconsultations, online platforms or apps to support physical activity) were questioned.

Table 2b. Overview of the collected variables in children.

Primary outcome measure	
Health status	Self-composed question on self-reported change in the patient's general health status since the lockdown, i.e. March 17th 2020 (worse or stable/better health status)
Personal factors of the parent(s)/guardian	
Distress, depression, anxiety and somatization	The Four-Dimensional Symptom Questionnaire (4DSQ) (Terluin, Smits, 2016), *see above.*
Personal factors of the child	
Somatisation	The Children's Somatization Inventory (CSI) was used to assess the bothersomeness of multiple somatic symptoms. The CSI consists of 35 items on a five-point scale (from zero = not at all to four = very much). The total score of the CSI can range from zero to 140 (Meesters et al. , 2003).
General quality of life status	The Visual Analogue Scale (VAS) of the EuroQol – 5 Dimensions – Youth (EQ-5D-Y) (by parent(s)/guardian for children) questionnaire records the respondent's overall current health on a VAS ranging from 'the best health you can imagine' (100) to 'the worst health you can imagine' (0) (Herdman, Gudex, 2011).
Self-care, pain/discomfort and anxiety/depression	The dimensions 'self-care', 'pain/discomfort' and 'anxiety/depression' of the EQ-5D-Y are each scored 1-3 (no problems; some problems; a lot of problems) (Herdman, Gudex, 2011).
Change in emotional status	A self-composed question was made to evaluate changes in emotional status since the lockdown (i.e. March 17th), including emotions such as anxiety, depression, motivation, self-efficacy, distress, introspection, powerlessness and helplessness. For each emotion a score between 0 (extreme decrease since the lockdown) and 10 (extreme increase since the lockdown) is given.
Health-behavior-related factors of the child	
Level of physical activity	An adjusted version of the Physical Activity Questionnaire for Older Children (PAQ-C) and Physical Activity Questionnaire for Adolescents (PAQ-A) were used. The PAQ-C and PAQ-A are self-administered, 7-day recall questionnaires that measure general moderate to vigorous physical activity levels during the school year. The questionnaires consist of 10 items for PAQ-C and 9 items for PAQ-A. Items 2 to 5 were slightly adjusted as during the lockdown children and adolescents did not attend school . Each item is assigned a score from 1 (none/never) to 5 (more than 7 times/very often). The composite PAQ-C/PAQ-A score is calculated as a mean over all relevant items where a score of 1 indicates low physical activity, whereas a score of 5 indicates high physical activity (Kowalski et al. , 2004).
Mobility and usual activities	The domain scores 'mobility' and 'usual activities' of the EQ-5D-Y (by parent(s)/guardian for children) are each scored 1-3 (no problems; some problems; a lot of problems) (Herdman, Gudex, 2011).
Healthcare use	A self-composed question was made to record frequencies of consultations with healthcare providers including the general practitioner, specialized doctor and/or physiotherapist before (2-3 times/week; 1 time/week; 2 times/month; 1 time/month; 1-2 times/year; less than 1 time/year; Never) and during (Same

	frequency; Less frequently; Once; Teleconsultation; Never; Not applicable) the lockdown.
Social life	Two self-composed questions were used to record participation in social life before the lockdown (busy; moderate; limited) and changes in participation in social activities (decrease; same; increase) since the lockdown, respectively.
Change in active daily activities	A self-composed question was used to record changes in active daily activities (including sports, active hobbies, physical work) (decrease; same; increase). Additionally, reasons for a possible decrease in activities (including not enough space, time, supervision, financial resources, infrastructure and/or motivation) and available resources to stay active (including booklets and/or videos provided by a physiotherapist or trainer, infrastructure at home, teleconsultations, online platforms or apps to support physical activity) were questioned.

Table 3. Characteristics of adult participants.

	TOTAL group (n=561)	Worse health status (n=293)	Stable/better health status (n=268)	Effect size*	p-value
Mean (SD) age (years)	43.1 (13.3)	43.3 (12.2)	43.0 (14.5)	0.36 (-1.85 to 2.58)	p=0.748
Gender				22.159 (1 df)	p<0.001
Male	84 (15%)	24 (44)	60 (40)		
Female	477 (85%)	269 (249)	208 (228)		
Education level				20.624 (4 df)	p<0.001
Primary school	17 (3%)	11 (9)	6 (8)		
Secondary school	185 (33%)	113 (97)	72 (88)		
Undergraduate degree	191 (34%)	104 (100)	87 (91)		
University degree	150 (27%)	56 (78)	94 (72)		
Doctoral degree	18 (3%)	9 (9)	9 (9)		
Daily occupation				28.775 (5 df)	p<0.001
Student	39 (8%)	18 (20)	21 (19)		
Unemployed	196 (39%)	127 (102)	69 (94)		
Part-time working	96 (17%)	59 (55)	46 (50)		
Full-time working	149 (27%)	55 (78)	94 (71)		
Retired	15 (3%)	6 (8)	9 (7)		
Not reported	57 (10%)				
Diagnosis†				9.780 (16 df)	p=0.002
Diabetes mellitus	51 (9%)	16 (27)	35 (24)		
Heart conditions	41 (7%)	17 (21)	24 (20)		
Lung conditions	54 (10%)	23 (28)	31 (26)		
Rheumatic conditions	104 (19%)	69 (54)	35 (50)		
Osteoarthritis	67 (12%)	56 (35)	11 (32)		
Chronic muscle and/or joint pain	132 (24%)	111 (67)	21 (63)		
Fibromyalgia	140 (25%)	111 (73)	29 (67)		
Chronic Fatigue Syndrome	62 (11%)	47 (32)	15 (30)		
(Post) cancer	29 (5%)	15 (15)	14 (14)		
Neurological disorders	63 (11%)	42 (33)	21 (30)		
Neurodevelopmental disorders	10 (2%)	8 (5)	2 (5)		
Motor neuron disorders	7 (1%)	5 (4)	2 (3)		
Genetic disorders	20 (4%)	15 (10)	5 (10)		
Psychiatric disorders	38 (7%)	32 (20)	6 (18)		
Auto-immune disorders	24 (4%)	16 (13)	8 (12)		
Consequences/resurgence of burns	4 (1%)	4 (4)	0 (0)		
Lymphedema	10 (2%)	8 (5)	2 (5)		

†Patients could indicate multiple diagnoses

For the total group n (%) are given (n=561). Per group mean (Standard Deviation) or observed counts (expected counts) are displayed. Observed counts significantly deviating from the expected counts after applying a Bonferroni correction are highlighted in italics. The critical p-value was set at p=0.0050 (p=0.05/10) for education level, at p=0.0045 (p=0.05/11) for daily occupation and at p=0.0015 (p=0.05/34) for diagnosis after applying a Bonferroni correction for multiple testing.

*As measure of effect size, for continuous variables, difference in mean with 95% confidence interval are given. For categorical variables, the value of the chi^2 test statistic and degrees of freedom.

Table 4a. Comparison of personal factors in adult participants.

Outcome	Worse health status	Stable/better health status	Effect size*	p-value
Distress – 4DSQ (0-32) *(n=426)*	16.2 (8.7) *(n=231)*	8.4 (7.0) *(n=195)*	7.716 (6.219 to 9.212)	*p<0.001*
Depression – 4DSQ (0-12) *(n=426)*	3.1 (3.7) *(n=231)*	1.0 (2.1) *(n=195)*	2.114 (1.552 to 2.676)	*p<0.001*
Anxiety – 4DSQ (0-24) *(n=426)*	5.5 (5.3) *(n=231)*	2.8 (3.7) *(n=195)*	2.742 (1.851 to 3.631)	*p<0.001*
Somatization – 4DSQ (0-32) *(n=426)*	14.1 (7.0) *(n=231)*	7.0 (6.6) *(n=195)*	7.031 (5.739 to 8.324)	*p<0.001*
Self-efficacy - SES (10-40) *(n=428)*	27.3 (5.3) *(n=237)*	30.6 (4.5) *(n=198)*	-3.214 (-4.150 to -2.278)	*p<0.001*
General health-related quality of life – VAS of the EQ-5D-5L (0-100) *(n=453)*	52 (20) *(n=245)*	69 (20) *(n=208)*	-16.844 (-20.473 to -13.216)	*p<0.001*
Self-care – EQ-5D-5L dimension (1-5) *(n=455)*			41.287 (4 df)	*p<0.001*
No problems	160 (65%)	189 (90%)		
Slight problems	49 (20%)	16 (8%)		
Moderate problems	23 (9%)	5 (2%)		
Severe problems	11 (5%)	0 (0%)		
Extreme problems	2 (1%)	0 (0%)		
Pain/discomfort - EQ-5D-5L dimension (1-5) *(n=455)*			128.057 (4 df)	*p<0.001*
No problems	22 (9%)	85 (40%)		
Slight problems	29 (12%)	57 (27%)		
Moderate problems	66 (27%)	49 (23%)		
Severe problems	111 (45%)	18 (9%)		
Extreme problems	17 (7%)	1 (1%)		
Anxiety/depression - EQ-5D-5L dimension (1-5) *(n=455)*			54.420 (4 df)	*p<0.001*
No problems	66 (27%)	116 (55%)		
Slight problems	85 (35%)	67 (32%)		
Moderate problems	63 (26%)	24 (11%)		
Severe problems	22 (9%)	3 (1%)		
Extreme problems	9 (4%)	0 (0%)		
Change in anxiety feelings‡ (0-10) *(n=465)*	5.7 (2.4) *(n=250)*	5.3 (1.9) *(n=215)*	0.446 (0.054 to 0.838)	p=0.026
Change in depression feelings‡ (0-10) *(n=464)*	5.7 (2.4) *(n=249)*	4.8 (2.1) *(n=215)*	0.908 (0.499 to 1.316)	*p<0.001*
Change in motivation‡ (0-10) *(n=465)*	4.4 (2.2) *(n=250)*	4.8 (1.9) *(n=215)*	-0.394 (-0.771 to -0.018)	p=0.040
Change in self-efficacy‡ (0-10) *(n=465)*	4.6 (2.1) *(n=250)*	5.0 (1.9) *(n=215)*	-0.397 (-0.763 to -0.032)	p=0.033
Change level of distress‡ (0-10) *(n=465)*	6.2 (2.4) *(n=250)*	4.9 (2.1) *(n=215)*	1.380 (0.969 to 1.790)	*p<0.001*
Change in introspection ‡ (0-10) *(n=465)*	6.2 (2.4) *(n=250)*	5.3 (2.1) *(n=215)*	0.838 (0.425 to 1.250)	*p<0.001*

Change in feelings of powerlessness‡ (0-10) *(n=465)*	6.3 (2.5) *(n=250)*	5.7 (2.1) *(n=215)*	0.676 (0.250 to 1.102)	*p=0.002*
Change in feelings of helplessness‡ (0-10) *(n=465)*	5.1 (2.5) *(n=250)*	4.6 (2.0) *(n=215)*	0.465 (0.534 to 0.877)	p=0.027

4DSQ= Four-Dimensional Symptom Questionnaire; SES= Dutch General Self-Efficacy Scale; VAS=Visual Analogue Scale; EQ-5D-5L=EuroQol-5 dimensions-5 severity levels
Mean (SD) are given together with p-value for independent t-test or n (% within the group) and p-value for Chi^2-test is given. For each outcome total n and n per group is reported.
The critical p-value was set at p=0.0029 after applying a Bonferroni correction for multiple testing (i.e. p=0.05/17). P-values remaining significant upon Bonferroni correction are highlighted in italics.
*As measure of effect size, for continuous variables, difference in mean with 95% confidence interval are given. For categorical variables, the value of the chi^2 test statistic and degrees of freedom.
‡Self-composed question

Table 4b. Comparison of health behavior-related factors of adult participants.

Outcome	Worse health status	Stable/better health status	Effect size*	p-value
Level of physical activity – IPAQ-SF (MET-minutes/week) *(n=251)*	1912 (2719) *(n=109)*	3176 (4401) *(n=142)*	-1264 (-2158 to -374)	*p=0.006*
Mobility - EQ-5D-5L dimension (1-5) *(n=455)*			82.323 (4 df)	*p<0.001*
No problems	86 (35%)	161 (77%)		
Slight problems	55 (22%)	24 (11%)		
Moderate problems	54 (22%)	15 (7%)		
Severe problems	43 (18%)	10 (5%)		
Extreme problems	7 (3%)	0 (0%)		
Daily activities - EQ-5D-5L dimension (1-5) *(n=455)*			113.709 (4 df)	*p<0.001*
No problems	48 (20%)	137 (65%)		
Slight problems	57 (23%(	38 (18%)		
Moderate problems	73 (30%)	28 (13%)		
Severe problems	57 (23%)	7 (3%)		
Extreme problems	10 (4%)	0 (0%)		
Number of consultations with general practitioner before lockdown‡ *(n=380)*			39.843 (6 df)	*p<0.001†*
2-3 times/week	2 (1%)	1 (1%)		
1 time/week	10 (4%)	0 (0%)		
2 times/month	33 (14%)	8 (6%)		
1 time/month	112 (46%)	37 (27%)		
1-2 times/year	49 (20%	51 (37%)		
less than 1 time/year	20 (8%)	14 (10%)		
Never	17 (7%)	26 (19%)		
Number of consultation with general practitioner during lockdown‡ *(n=507)*			29.985 (5 df)	*p<0.001†*
Same frequency	30 (11%)	20 (8%)		
Less frequently	23 (9%)	7 (3%)		
Once	50 (19%)	39 (16%)		
Teleconsultation	45 (17%)	23 (10%)		

Never	101 (37%)	105 (44%)		
Not applicable	18 (7%)	46 (19%)		
Number of consultation with specialist before lockdown‡ *(n=380)*			15.846 (6 df)	p=0.061†
2-3 times/week	1 (1%)	5 (4%)		
1 time/week	4 (2%)	5 (4%)		
2 times/month	7 (3%)	4 (3%)		
1 time/month	55 (23%)	19 (14%)		
1-2 times/year	117 (47%)	82 (59%)		
less than 1 time/year	17 (7%)	6 (4%)		
never	42 (17%)	16 (12%		
Number of consultation with specialist during lockdown‡ *(n=507)*			18.946 (5 df)	p=0.284†
Same frequency	18 (7%)	20 (8%)		
Less frequently	7 (3%)	5 (2%)		
Once	18 (7%)	11 (5%)		
Teleconsultation	18 (7%)	20 (8%)		
Never	151 (56%)	98 (41%)		
Not applicable	55 (20%)	86 (36%)		
Number of consultation with physiotherapist before lockdown‡ *(n=380)*			51.005 (6 df)	*p<0.001†*
2-3 times/week	62 (26%)	26 (19%)		
1 time/week	77 (31%)	13 (10%)		
2 times/month	14 (6%)	5 (4%)		
1 time/month	6 (3%)	4 (3%)		
1-2 times/year	8 (3%)	2 (2%)		
less than 1 time/year	12 (5%)	3 (2%)		
never	64 (26%)	84 (60%)		
Number of consultation with physiotherapist during lockdown‡ *(n=507)*			44.633 (5 df)	*p<0.001†*
Same frequency	9 (3%)	7 (3%)		
Less frequently	16 (6%)	5 (2%)		
Once	8 (3%)	3 (1%)		
Teleconsultation	4 (2%)	3 (1%)		
Never	161 (60%)	92 (38%)		
Not applicable	69 (26%)	130 (55%)		
Social activities before the lockdown‡ *(n=507)*	*n=267*	*n=240*	29.929 (2 df)	*p<0.001†*
Busy social life	72 (27%)	103 (43%)		
Moderate social life	98 (37%)	99 (41%)		
Limited social life	97 (36%)	38 (16%)		
Change in social activities‡ *(n=507)*	*n=267*	*n=240*	1.664 (2 df)	p=0.214†
Decrease	233 (87%)	217 (90%)		
Same	31 (12%)	22 (9%)		
Increase	3 (1%)	1 (1%)		
Change in active daily activities‡ *(n=464)*	*n=250*	*n=214*	37.735 (2 df)	*p<0.001†*
Decrease	184 (74%)	105 (49%)		
Same	43 (17%)	46 (22%)		
Increase	23 (9%)	63 (29%)		

IPAQ-SF=Physical Activity Questionnaire - Short Form

Mean (SD) are given together with p-value for independent t-test or n (% within the group) and p-value for Chi^2-test is given. For each outcome total n and n per group is reported.
*The critical p-value was set at p=0.0029 after applying a Bonferroni correction for multiple testing (i.e. p=0.05/12). P-values remaining significant upon Bonferroni correction are highlighted in italics.
*As measure of effect size, for continuous variables, difference in mean with 95% confidence interval are given. For categorical variables, the value of the chi2 test statistic and degrees of freedom.
†p-value for the Cochran-Armitage test
‡self-composed question

Table 5. Characteristics of children.

	Total Group n = 55	Worse Health Status n= 21 (38%)	Stable/Better Health Status n= 34 (62%)	Effect size*	p-value
Median (Q1-Q3) age (years)		11 (8-15.25)	12 (8.5-17)	n/a	p=0.455
Gender				2.541 (2 df)	p=0.281
male	30 (55%)	12 (11.5)	18 (18.5)		
female	23 (42%)	7 (8.9)	16 (14.2)		
other	1 (2%)	1 (0.8)	0 (1.2)		
Diagnosis				13.087 (9 df)	p=0.159
Reumatoid condition	5 (9%)	0 (1.9)	5 (3.1)		
Neurodevelopmental Disorder	11 (20%)	7 (4.2)	4 (6.8)		
Neuromotor disorder	4 (7%)	1 (1.5)	3 (2.5)		
Neurological condition	8 (15%)	4 (3.1)	4 (4.9)		
Lung condition	2 (4%)	1 (0.8)	1 (1.2)		
Heart condition	1 (2%)	0 (0.4)	1 (0.6)		
Genetic disorder	6 (11%)	1 (2.3)	5 (3.7)		
Diabetes	9 (16%)	2 (3.4)	7 (5.6)		
Chronic pain	2 (4%)	1 (0.8)	1 (1.2)		
other	7 (13%)	4 (2.7)	3 (4.3)		
Daily Occupation				2.914 (4 df)	p=0.572 .
School	43 (88%)	18 (18.4)	25 (24.6)		
Day center	1 (2%)	0 (0.4)	1 (0.6)		
Boarding school	2 (4%)	1 (0.8)	1 (1.1)		
At home	2 (4%)	1 (0.8)	1 (1.1)		
Other	1 (2%)	1 (0.4)	0 (0.6)		
Education level of the mother				5.948 (4 df)	p=0.203
Primary school	4 (7.3%)	2 (1.5)	2 (2.5)		
Secondary school	14 (25.5%)	8 (5.3)	6 (8.7)		
Undergraduate degree	19 (34.6%)	6 (7.3)	13 (11.7)		
University degree	15 27.3%)	3 (5.7)	12 (9.3)		
Doctoral degree	3 (5.5%)	2 (1.1)	1 (1.9)		

For the total group median (Quartile 1 - Quartile 3) or n (%) are given (n=55). Per group median (Quartile 1-Quartile 3) or observed counts (expected counts) are displayed. Observed counts significantly deviating from the expected counts after applying a Bonferroni correction are highlighted in italics.

*As measure of effect size for categorical variables, the value of the chi^2 test statistic and degrees of freedom is given. Due to non-parametric testing, no effect size for the continuous variables could be calculated.

Table 6a. Comparison of personal factors of the parent(s)/guardian of child participants.

Outcome	Worse health status	Stable/better health status	p-value
Distress – 4DSQ (0-32) *N = 30*	10.5 (6.25 – 15.5) *(n = 12)*	6 (2.75 – 9.75) *(n = 18)*	p=0.0185
Depression - 4DSQ (0-12) *N = 30*	0 (0 - 1) *(n = 12)*	0 (0 - 0) *(n = 18)*	p=0.1215
Anxiety - 4DSQ (0-24) *N = 30*	1 (0 – 3.75) *(n = 12)*	1 (0 – 2.25) *(n = 18)*	p=0.7729
Somatization - 4DSQ (0-32) *N = 30*	7.50 (3.75 - 10) *(n = 12)*	2 (0.75 - 4) *(n = 18)*	*p=0.0018*

4DSQ=Four-dimensional symptom questionnaire
Median (Q1-Q3) are given.
The critical p-value was set at p=0.0029 after applying a Bonferroni correction for multiple testing (i.e. p=0.05/17). P-values remaining significant upon Bonferroni correction are highlighted in italics.

Table 6b. Comparison of personal factors of the child participants.

Outcome	Worse health status	Stable/better health status	Effect size*	p-value
Somatization - CSI (0-140) *N = 40*	6 (6 – 32) (n=13)	6 (2.5 – 9.5) (n=22)	n/a	p=0.0765
General health-related quality of life – VAS EQ-5D-Y (0-100) *N = 40*	66 (40-74)	78 (68-91)	n/a	p=0.0176
Self-care - EQ-5D-Y dimension (1-35) *N = 40*	*(n=17)*	*(n=23)*	1.352 (2 df)	p=0.509
No problem	8 (10)	15 (3)		
Some problems	6 (5)	5 (6)		
A lot of problems	3 (3)	3 (3)		
Pain/discomfort - EQ-5D-Y dimension (1-35) *N = 40*	*(n=17)*	*(n=23)*	4.828 (2 df)	p=0.090
No problem	6 (9)	16 (13)		
Some problems	7 (5)	5 (7)		
A lot of problems	4 (3)	2 (3)		
Anxiety/depression - EQ-5D-Y dimension (1-35) *N = 40*	*(n=17)*	*(n=23)*	7.065 (2 df)	p=0.029
No problem	1 (3)	7 (5)		
Some problems	14 (13)	16 (17)		
A lot of problems	2 (1)	0 (1)		
Change in anxiety feelings‡ (0-10) *N = 40*	5 (5-7) *(n=17)*	5 (5-5.75) *(n=23)*	n/a	p=0.852
Change in depression feelings‡ (0-10) *N = 40*	6 (5-7) *(n=17)*	5 (4-5) *(n=23)*	n/a	p=0.007
Change in motivation‡ (0-10) *N = 40*	3 (1-6) *(n=17)*	5 (3.25-5) *(n=23)*	n/a	p=0.357
Change in self-efficacy‡ (0-10) *N = 40*	5 (1-5) *(n=17)*	5 (4.25-6) *(n=23)*	n/a	p=0.203
Change level of distress‡ (0-10) *N = 40*	7 (4-8) *(n=17)*	5 (4.25-5) *(n=23)*	n/a	*p=0.005**
Change in introspection ‡ (0-10) *N = 40*	5 (5-6) *(n=17)*	5 (5-5.75) *(n=23)*	n/a	p=0.212
Change in feelings of powerlessness‡ (0-10) *N = 40*	5 (5-6) *(n=17)*	5 (5-5.75) *(n=23)*	n/a	p=0.651
Change in feelings of helplessness‡ (0-10) *N = 40*	5 (3-6) *(n=17)*	5 (5-5) *(n=23)*	n/a	p=0.557

CSI=Children's Somatization Inventory; VAS=Visual Analogue Scale; EQ-5D-Y=EuroQol-5 dimensions-Youth; Median (Q1-Q3) per group is given. The critical p-value for the independent t-test was set at p=0.0029 after applying a Bonferroni correction for multiple testing (i.e. p=0.05/17). P-values remaining significant upon Bonferroni correction are highlighted in italics

*As measure of effect size for categorical variables, the value of the chi2 test statistic and degrees of freedom is given. Due to non-parametric testing, no effect size for the continuous variables could be calculated.

‡Self-composed question

Table 6c. Comparison of health behavior-related factors of child participants.

Outcome	Worse health status	Stable/better health status	Effect size*	p-value
Level of physical activity – PAQ-A/C (1-5)	2.71 (1.75-3.39) *(n=21)*	2.16 (1.34-3.93) *(n=29)*	n/a	p=0.784
Mobility – EQ-5D-Y dimension (1-53)	*(n=23)*	*(n=17)*	3.430 (2 df)	p=0.181
No problems	8 (11)	17 (14)		
Some problems	6 (4)	3 (5)		
A lot of problems	3 (3)	3 (3)		
Daily activities EQ-5D-Y dimension (1-35)	*(n=23)*	*(n=17)*	3.218 (2 df)	p=0.200
No problems	5 (6)	9 (8)		
Some problems	3 (5)	8 (6)		
A lot of problems	9 (6)	6 (9)		
Number of consultations with general practitioner before lockdown‡	*(n=21)*	*(n=29)*	3.143 (4 df)	p=0.534†
2-3 times/week	0 (0%)	0 (0%)		
1 time/week	0 (0%)	0 (0%)		
2 times/month	2 (10%)	1 (3%)		
1 time/month	5 (24%)	4 (14%)		
1-2 times/year	5 (24%)	11 (38%)		
less than 1 time/year	2 (10%)	1 (3%)		
Never	7 (32%)	12 (42%)		
Number of consultations with general practitioner during lockdown‡			4.786 (5 df)	p=0.556†
Same frequency	1 (5%)	2 (6%)		
Less frequently	0 (0%)	1 (3%)		
Once	14 (67%)	23 (68%)		
Teleconsultation	0 (0%)	2 (5%)		
Never	4 (19%)	3 (9%)		
Not applicable	2 (9%)	9 (9%)		
Number of consultations with specialist before lockdown‡			2.161 (3 df)	p=0.540†
2-3 times/week	0 (0%)	0 (0%)		
1 time/week	0 (0%)	0 (0%)		
2 times/month	1 (5%)	1 (3%)		
1 time/month	5 (24%)	11 (38%)		
1-2 times/year	8 (38%)	12 (41%)		
less than 1 time/year	0 (0%)	0 (0%)		
never	7 (33%)	5 (18%)		
Number of consultations with specialist during lockdown‡			4.786 (5 df)	p=0.443†
Same frequency	1 (5%)	2 (6%)		
Less frequently	1 (5%)	0 (0%)		
Once	11 (52%)	23 (68%)		
Teleconsultation	1 (5%)	1 (3%)		
Never	5 (24%)	3 (9%)		
Not applicable	2 (9%)	5 (14%)		
Number of consultation with physiotherapist before lockdown‡			2.862 (4 df)	p=0.581†
2-3 times/week	7 (33%)	10 (34%)		
1 time/week	4 (19%)	5 (17%)		
2 times/month	0 (0%)	0 (0%)		
1 time/month	1 (5%)	0 (0%)		
1-2 times/year	0 (0%)	1 (3%)		

less than 1 time/year	0 (0%)	0 (0%)		
never	9 (43%)	13 (46%)		
Number of consultation with physiotherapist during lockdown‡			1.193 (2 df)	p=0.551†
Same frequency	0 (0%)	0 (0%)		
Less frequently	0 (0%)	1 (3%)		
Once	19 (90%)	31 (91%)		
Teleconsultation	0 (0%)	0 (0%)		
Never	0 (0%)	0 (0%)		
Not applicable	2 (10%)	2 (6%)		
Social activities before the lockdown‡			5.642 (2 df)	p=0.060
Busy social life	9 (43%)	7 (25%)		
Moderate social life	5 (24%)	16 (57%)		
Limited social life	7 (33%)	5 (18%)		
Change in social activities‡			1.722 (1 df)	p=0.189
Decrease	28 (100%)	20 (95%)		
Same	0 (0%)	1 (5%)		
Increase	0 (0%)	0 (0%)		
Change in active daily activities‡			2.615 (2 df)	p=0.271
Decrease	21 (88%)	14 (78%)		
Same	2 (85)	4 (22%)		
Increase	1 (4%)	0 (0%)		

EQ-5D-Y=EuroQol-5 dimensions-Youth; PAQ-Q/PAQ-C=Physical Activity Questionnaire for Older Children (PAQ-C) and Physical Activity Questionnaire for Adolescents (PAQ-A)
Median (Quartile 1- Quartile 3) are given together with p-value for Mann-Whiney-U test or n (% within the group) and p-value for Chi^2-test is given. For each outcome total n and n per group is reported.
The critical p-value was set at p=0.0029 after applying a Bonferroni correction for multiple testing (i.e. p=0.05/12).
*As measure of effect size for categorical variables, the value of the chi^2 test statistic and degrees of freedom is given. Due to non-parametric testing, no effect size for the continuous variables could be calculated.
†p-value for the Cochran-Armitage test
‡self-composed question