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RESEARCH ARTICLE

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Obesity care for youth during the COVID-19 pandemic: Challenges youth healthcare nurses experienced in providing obesity care in the Netherlands

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Abstract

The COVID-19 pandemic deeply affected the lives of children and young people; studies report adverse effects on mental, physical, and social well-being. However, the impact of the pandemic on obesity care for children received little attention. The aim of this study was to gain insight into the challenges youth healthcare nurses experienced and to describe implications for future obesity care and policy. We conducted interviews, participant observations, and a group session with youth healthcare nurses during the pandemic in Amsterdam, the Netherlands. Youth healthcare nurses reported a deterioration in the problems of children and young people who were already in the highest classification for pediatric obesity, such as increased weight gain, mental health problems, and socio-economic problems. The nurses experienced immense challenges while trying to provide obesity care, such as a decrease in face-to-face contact with youth and their families, as well as loss of continuity of care. It is important to reconnect with these families, invest in a trusted relationship with youth receiving obesity care, and prioritize available and accessible obesity care for those who need it the most.

KEYWORDS
children, COVID-19 pandemic, pediatric obesity, young people, youth healthcare nurses

Key points

- It is imperative to keep connected with children and young people with pediatric obesity and their families during COVID-19 and lockdown measures.
- The relationship of trust between families with children receiving obesity care and youth healthcare nurses facilitated the continuity of obesity care during the lockdowns.
- It is essential that face-to-face contact in obesity care for children is prioritized and that this care remains available and accessible during epidemics and pandemics for families who need it the most.

Arnoud Verhoeff and Christine Dedding made equal contributions as promotors to this manuscript. Lieke van Houtum acted as supervisor.

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1 | INTRODUCTION

The COVID-19 pandemic has exposed the fragility of children's lives and has profoundly threatened their fundamental human rights (Koller, 2021). UNICEF (2021) reports that in the organization's 75-year history, there has never been a crisis that hit children as hard as the COVID pandemic. Children experienced school and childcare closures, limited play and social interactions, increases in domestic violence, abuse, and poverty—and some even experienced the profound loss of a loved one (Koller, 2021). Studies report adverse effects on the mental, physical, and social well-being of children and adolescents (Abawi et al., 2020; Jiao et al., 2020; Orgiles et al., 2020; Rundle et al., 2020). Physical effects were identified as changes in weight, as well as eating, sleeping, and activity behaviors, especially during periods of quarantine and/or lockdown due to COVID-19 (Pietrobelli et al., 2020).

It is likely that the COVID-19 pandemic also impacted children and young people with pediatric obesity. Although it is clear that obesity exponentially increases the mortality risk of COVID-19 patients (Petrakis et al., 2020), relatively little attention was paid to the way in which the pandemic impacted children with obesity and the care they received. COVID-19 containment restrictions were imposed by most governments; for example, people were asked to stay inside and work from home as much as possible, to maintain social distancing, and large events were canceled (Luijten et al., 2021). There are reasons to be concerned about children and adolescents who are overweight and obese, especially in periods when their options for going out and being active are reduced.

Obesity is worldwide on the rise (WHO, 2018). In 2018, before COVID-19, 11.7% of the Dutch children aged 4 to 17 were overweight, of which 9% were moderately overweight and 2.7% were severely overweight (obese) (Public health and care (RIVM), 2019). Special programs have been developed to tackle this rising issue (UNICEF, 2020), particularly for children with parents with a migrant background living in vulnerable circumstances, who are more likely to be overweight/obese compared to non-vulnerable children (Iguacel et al., 2018).

In this study, we focus on the experiences of youth health care nurses (YHC nurses) while trying to continue obesity care for children and young people during the pandemic in Amsterdam. In 2012 Amsterdam developed a Healthy Weight Approach (AHWA); co-developed by 8 Dutch municipalities, this model, based on both scientific and practice-based evidence, delineates a processual approach to the provision of integrated care for children aged 0–19 years with overweight and obesity (Halberstadt & Sijben, 2019; Koetsier et al., 2021). YHC nurse's key role, they coordinate care activities for all children with obesity and provide support in making lifestyle changes. As they are positioned at the center of public health care and are pivotal players in the web (de Laat et al., 2019), they are well equipped to describe the challenges that families and children face, how obesity care could provide support during the lockdown, its consequences and implications for future obesity care and policy.

2 | METHODS

This qualitative study has an exploratory approach, as little is known about the impact of COVID on obesity care for children. This research is part of a larger study, in which we work together with children and young people with pediatric obesity as knowledge-bearing experts and agents of change in research and care. As this current study was the exploratory phase of the larger study and prior to the study with children, the elements of the participatory action phase methodology were not included in this study.

2.1 | Setting

In this study, we focused specifically on the YHC nurses providing obesity care to children and young people living in disadvantaged neighborhoods (i.e., Amsterdam Southeast and West), where the prevalence of pediatric obesity is the highest and is often complicated by the low socioeconomic position of the families involved. All YHC nurses work as coordinating professionals (CPs) (cf Koetsier et al., 2021). During the lockdowns, YHC nurses worked primarily from home and, when possible, at child health centers.

2.2 | Participants and data collection

This study contains three main sources of data: semi-structured interviews ($N = 15$), participatory observations at the youth healthcare center, and a group session with YHC nurses ($N = 3$). In addition, we conducted an interactive poll with YHC doctors ($N = 45$) and facilitated a network meeting with network partners of the integrated approach for obesity care in Amsterdam ($N = 11$), to deepen, verify, and validate the findings.

2.2.1 | Individual interviews and group session

Recruitment for the interviews was done by convenience sampling with the help of the team leaders. The team leaders ($n = 22$) sent a recruitment email to all YHC nurses who work as CPs in obesity care. Contact details of the YHC nurses wanting to participate in the research were sent to the interviewer (ANON 3). Criteria for participation were that the nurses were providing obesity-care during the pandemic, and had a minimum of three years' experience as a CP in obesity care. In total, ten YHC nurses from five districts participated in the study (Table 1). Furthermore, one youth healthcare doctor for primary school and special education responded, as there was no coordinating nurse available at this school we decided to broaden the inclusion, to ensure that care for this group of children with special needs was also represented. The interviews were all conducted online via Teams. In the fall of 2021, all 11 participants were invited for a follow-up interview and/or a group session to identify differences midst the beginning and the end of the pandemic (2020–2022). Of

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TABLE 1 Methods and participants characteristics.

Methods	Pseudonym & gender	Year	Position youth healthcare (YHC) professional and educational background	District of Amsterdam	Years of practice
Interviews ($n = 15$)	Ana (F)	2020	YHC nurse for secondary school (BSc)	West	>10
	Eileen (F)	2020	YHC nurse for primary school (BSc)	West	>10
	Greta (F)	2020 & 2022	YHC nurse for primary school (BSc)	East	>5
	Helen (F)	2020 & 2021	YHC nurse for secondary school (BSc)	West	>5
	Kate (F)	2020 & 2022	YHC nurse for primary school (BSc)	Southeast	>5
	Maria (F)	2020	YHC doctor for primary school / special education (MD)	East	>10
	Kathleen (F)	2020	YHC nurse for secondary school (BSc)	North	>10
	Sandra (F)	2020	YHC nurse for primary school (BSc)	West	>12
	Paula (F)	2020	YHC nurse for primary school (BSc)	West	>10
	Lisa (F)	2020 & 2022	YHC nurse for primary school (BSc)	South	>10
	Sue (F)	2022	YHC nurse for primary school (BSc)	West	>10
Group session ($n = 1$)	Ana (F)	2021	YHC nurse for secondary school (BSc)	West	>10
	Eileen (F)	2021	YHC nurse for primary school (BSc)	West	>10
	Sandra (F)	2021	YHC nurse for primary school (BSc)	West	>12
Participatory observations (72 h)	Existing Team of 6 CP's (all F)	2020 2021 2022	Consultations with YHC nurses for primary school and secondary school	Southeast	>5

TABLE 2 Interview guide.

Focus	Topic	Examples of interview questions
1. Challenges YHC nurses observed and experienced during the COVID-19 pandemic and the national lockdowns	Observations of families and children	a. How did the children/families that were in your care fare during the COVID-19 crisis? b. What kind of change(s) did you see in the children/families? c. What remained the same and what stood out?
	Care Experiences	d. What kind of change(s) have taken place for you in providing obesity care to children? e. How did you experience this time of pandemic in your role and activities as coordinating professional?
	Detecting and identifying	f. Did you identify (many) children who needed obesity care because they have gone from overweight to obesity in this period? (new six-step trajectories) g. Is it possible to say anything about how many children with new obesity care trajectories enrolled in this period of pandemic and national lockdowns? h. Did you observe or identify more multifactorial problems/predicaments in families? i. Would you like to share/report anything else about this period of time?
2. Implications for future obesity care and policy	Lessons learned	j. Did you identify differences in the way obesity care was organized during the pandemic (e.g., digital communication, consultation by telephone)? k. What is needed to continue to provide good care in this way (e.g., digital communication, consultation by telephone)?

the eleven participants, seven agreed to participate, four of these YHC nurses were interviewed individually and three YHC nurses agreed to participate in a group session. Three participants could not participate in this second round due to lack of time or being on leave.

An overview of the characteristics of the participants is presented in Table 1. All participants are female (F), the nurses all have a bachelor of science in nursing (BSc), consisting of a four-year undergraduate course in the field of medical science and one year of training in society and health, profile youth health care. Table 2 presents the main topics and examples of the interview questions guide. All interviews (average duration 25 min) and the group discussion (3 h) were held online and recorded with Microsoft Teams. In collaboration with all participants, who were named, we used pseudonyms in order to protect their anonymity.

2.2.2 | Participatory observations

Participatory observations were conducted by the first author at the local youth healthcare center (YHC center) service in Amsterdam

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Southeast. By convenience sampling, six YHC nurses were asked for permission to be observed during their consultation hours. This resulted in a total of 72 h of observation during 24 days between 2020 and 2022. The purpose of the participatory observations was to substantiate the data collected out of the interviews in 2020, to get a sense of the impact of the experienced challenges by observing the YHC nurses in real-time and reflect on dimensions such as emotions, atmosphere, and lived consequences. This was facilitated by the background of the researcher, who also works as a youth healthcare nurse. She was actively involved during these health consultations and listened actively during telephone calls with families. Each observation was followed by a brief informal interview in which the YHC nurses were asked about their experiences and the challenges they encountered. Detailed fieldwork notes were made, so that data could be interpreted and compared with the other data sources. As the aim was to identify challenges the nurses experienced during the COVID-19 pandemic, youth, and their families, and the content of their conversations with the YHC nurses was not a topic of research and not written down. Before the start, YHC nurses asked parents if the observer could join the (telephone) consultation (without video), and observe the YHC nurses, explaining that participation was voluntary. Furthermore, without consequences for the care of their child in case the family did not want to be part of the project.

2.2.3 | The process of broadening and establishing the extent of the experiences and perspectives

In November 2021 we broadened the process of establishing the extent to which other professionals working with children in obesity care shared similar experiences and perspectives. We deepened our findings with the help of an interactive poll at a national symposium for YHC doctors. The YHC doctors present were asked to participate in an anonymous poll and informed that the information was going to be used to reflect on the data collected from the YHC nurses in Amsterdam, in order to identify similarities or differences. Consent was given by participating in the poll via mobile phone. Fifty-five YHC doctors from all regions of the Netherlands attended the symposium of which forty-five participated. The YHC doctors were asked two questions: 'As a youth healthcare doctor, what consequences of the COVID-19 pandemic do you see for children with obesity?', and: 'Which of the topics below do you recognize when you think of obese children during the lockdowns?' They could choose multiple answers from the following themes: 'inactivity', 'increase in weight gain', 'unhealthy eating', 'disrupted circadian rhythm', 'motivation for healthy habits decreased', 'increase in distrust of the government', 'fear of going outside due to COVID' and 'I don't know'. In addition, the researcher compared and deepened the findings at a network meeting of partners of the integrated approach for obesity care. All attendees gave their consent: a district manager, a policy maker from the City of Amsterdam, a pediatrician in specialized obesity care, an obesity care coordinator at a hospital, a dietitian, a pediatric physiotherapist, three parent-and-child advisors (social workers) and two other CPs (total $N = 11$). These professionals were invited to critically reflect on the findings and compare them with insights from their own settings and care practices.

2.3 | Data analysis

Interviews were analyzed with the ninth version of AtlasTi. We applied the six phases of reflexive thematic analysis of Braun and Clarke (2008): (1) familiarizing ourselves with the data, (2) generating codes, (3) constructing themes, (4) reviewing potential themes, (5) defining and naming themes, and (6) producing the report. The grounded theory of Glaser and Strauss (1999) provided guidance for generating codes and constructing themes, followed by inductive and iterative processes until no new codes were generated and no new themes emerged. The thematic analysis of the two main researchers (ANON 1 & ANON 2) was discussed with the research team, after which we proceeded with another round of iterative processing of the data, analyzing and dissecting until we reached consensus (Campbell et al., 2021).

2.4 | Methodological considerations

As the first author works as a youth healthcare nurse herself, it was possible to engage with the YHC nurses for a period of two years.

While some may see this double role of the researcher as a danger to reliability, others argue that this way of seeing provides a richer, more developed understanding of complex phenomena (Koch & Harrington, 1998; Lincoln & Guba, 1985; Malterud, 2001). Moreover, during the lockdowns, it was the double role of the researcher that made data collection even possible; an outsider would not have been allowed to access the youth healthcare center. Techniques used to establish credibility included prolonged engagement with participants, persistent observation, peer debriefing, member checking, and reflective journaling (cf. Lincoln & Guba, 1985). Dependability was established by the role of the experienced scholars (ANON 2, ANON 4 & ANON 5), who evaluated the accuracy of the data and data analysis, and checked whether or not the findings, interpretations, and conclusions of the researcher were supported by the data. Confirmability was established by following steps to foster reflexivity. Moreover, rigor was enforced by employing reflexivity within the research team during all phases of the study. Transferability was ensured by making field notes and text fragments with sufficient detail (thick description) to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people (Lincoln & Guba, 1985).

2.5 | Ethics

This study, as part of a broader participatory action research that aims to improve obesity care practices within youth healthcare, has been

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assessed and approved by the recognized Medical Ethical Review Committee of the Amsterdam Medical Centres (METC; reference number W20_552).

3 | RESULTS

The results are divided into four sections. First, we describe the experiences of the YHC nurses during the COVID-19 pandemic. Secondly, we feature the challenges YHC nurses encountered in providing obesity care. Thirdly, we report on the deterioration in the situation of children and young people with pediatric obesity, as identified by YHC nurses. Finally, we zoom in on implications for the near future.

3.1 | Experiences of YHC nurses

All YHC nurses reported a negative impact of the COVID-19 pandemic and the resulting lockdowns on families with children living with pediatric obesity, due to (*1*) *fear of COVID-19*, (*2*) *loss of structure/routine, and* (*3*) *increasing daily, social- and economic worries*.

3.1.1 | Fear of COVID-19

Especially at the beginning of the pandemic, the YHC nurses saw families being paralyzed and consumed by fear of going outside and getting infected with COVID. Lisa shared:

> Yes, in the beginning really, that was early March, mid-March [2020]. Then it was like nobody knew what to do. What should we do? And then appointments were canceled by parents, they didn't want to take any chances/risks […] real incapacitating fear
>
> (interview, 2020).

The majority of the parents kept their children inside, Kate heard parents say:

> It is a child, they are children. If they go out and they run outside, I have no control over that. I don't want to take any chances
>
> (interview, 2020).

Sandra explained:

> They [families] stayed really inside, there are children who literally stayed inside for six weeks
>
> (interview, 2020).

Although fear was typical for the first period, the YHC nurses reported that fear remained. Paula explained, that especially families with a migration background who followed the news from their country of origin were very afraid:

> Those who do not follow the news from here [the Netherlands], about what is allowed currently or what is possible, they were very scared, really scared, there was real fear in the family
>
> (interview, 2020).

Sandra and Paula commented that Dutch governmental information about how to deal with COVID-19 did not reach these families sufficiently, due to a mismatch in language and the information channel used. One of the consequences of this fear was that families did not visit the YHC center for obesity care. The YHC nurses could contact most families only by telephone. Most of the conversations with parents were about ways to deal with COVID-19, fear, and stress. Leaving no room to guide and support families in managing their children's weight, how to stay healthy, maintain a healthy diet, sleep well and exercise, despite their confinement.

3.1.2 | Loss of structure/routine in daily life

Loss of structure was frequently observed in families during the periods of lockdown. Families were not able to keep up with their normal daily routines because their children could not attend school or activities outdoors. Ana reported:

> Some [youth] just changed their circadian rhythm, slept during the day and watched movies in the evening, or social media, and ate a lot
>
> (interview, 2020).

Nurses reported more snacking among high school children, Lisa reported:

> More snacking and picking food, as there is not much to do inside the house, snacking behaviour due to boredom. Parents had a hard time limiting that
>
> (interview, 2022).

In primary school children, YHC nurses observed an increase in gaming and watching videos online due to the loss of routine and lack of activities, Kate reported:

> Children were online more, gaming with each other and playing Roblox or Fortnite
>
> (interview, 2022).

According to the YHC nurses, the increase in screen time was a way for parents to keep their child occupied and content. Being confined to the house, some parents were in despair. Lisa:

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> That is very understandable. You know, parents who have to work from home, home-schooling. Then try to keep your child busy. Those are the reasons parents give to explain the increase in screen time. The amount of homework the children all get and they exercise less. Children weren't even allowed to leave the house at first or play outside with friends. That was really the most common of reasons
>
> (interview, 2020).

Families who already lacked skills in limiting their child's unhealthy eating habits and screen time were faced with even more challenges to manage their children. Excessive use of digital devices was a life-saver for them.

3.1.3 | Struggles with increasing daily stress and negative socio-economic developments

Some families were already living on minimum incomes. In exactly these families, YHC nurses identified a deterioration of social problems. Some of the YHC nurses said that they encountered families with escalating problems, such as payment arrears, an increase in unemployment, and families whose businesses had to close. Sandra reports:

> Many fathers who for example are taxi drivers, their work stopped completely. So there was also a lot of stress, extra stress, which also reduced that focus on weight [management]
>
> (interview 2020).

Kate:

> Some parents lost their jobs during the crisis. So then they had to sit at home, which made it a lot more difficult for the parents and their children. At home with tension and stuff. But yeah, they're not going to tell you everything either. And they also don't let you visit them at home to see how pressing or how serious it is
>
> (interview 2020).

The YHC nurses reported that some children did not have WIFI and/or could not follow online school because they didn't have access to laptops or personal computers. Many of these, often large families, live in small houses; having all children at home at all times resulted in more quarrels and fighting in the house. This negative atmosphere in the house, was reinforced by "not being able to do anything fun for a long time" (group session, YHC nurses, 2021). Greta indicated that she experienced more reports of unsafe family situations, "Safe at Home services- colleagues I spoke to saw a peak in registrations, with people living on top of each other," (interview, 2022). In short, families struggled with increasing stress and negative socio-economic developments, leaving little time and energy for maintaining a healthy lifestyle.

3.1.4 | Experiences with exacerbating health problems during and after lockdowns

Several problems were exacerbated during and after the lockdowns, namely: (1) increased weight gain in all categories of pediatric obesity, (2) deteriorated mental well-being and more mental health problems, and (3) a decrease in motivation to maintain a healthier lifestyle. Most of these problems were already present to a greater or lesser extent but increased during the pandemic. In Figure 1, we summarize the impact of COVID-19 and lockdowns, as identified by the YHC nurses.

The deterioration of health problems was not entirely clear during the lockdowns, as YHC nurses spoke with families mostly by telephone. Only after the lockdowns, when the nurses saw the families face-to-face again, they really noticed the exacerbation of pre-existing problems. All of the YHC nurses highlighted that they observed a substantial increase in weight gain for most of the children with pediatric obesity after a period of lockdown. Eileen:

> Almost all of the children showed a really major increase in BMI, so that's really intense
>
> (interview, 2021).

Sue adds:

> After the lockdown, when we saw the children again, we saw rising lines in the weight curve, a significant increase in weight gain
>
> (interview, 2022).

In the group session Eileen and Sandra working with primary school children specified:

> An example is that of an 8-year-old girl who had gained 10 kilograms. Many children gained a kilogram a month
>
> (group session, 2021).

Ana added:

> A 14 year old girl gained 30 kilograms in 3 months, moving from moderate overweight to obesity
>
> (group session, 2021).

Young people with pediatric obesity, who already had problems with weight management as well as medical, physical, mental, and social problems, were more prone to gain more weight. Furthermore, all YHC nurses mentioned the deterioration of mental well-being and an increase in mental health problems during the pandemic, especially among high schoolers. They missed their peers; some even had suicidal thoughts. Ana:

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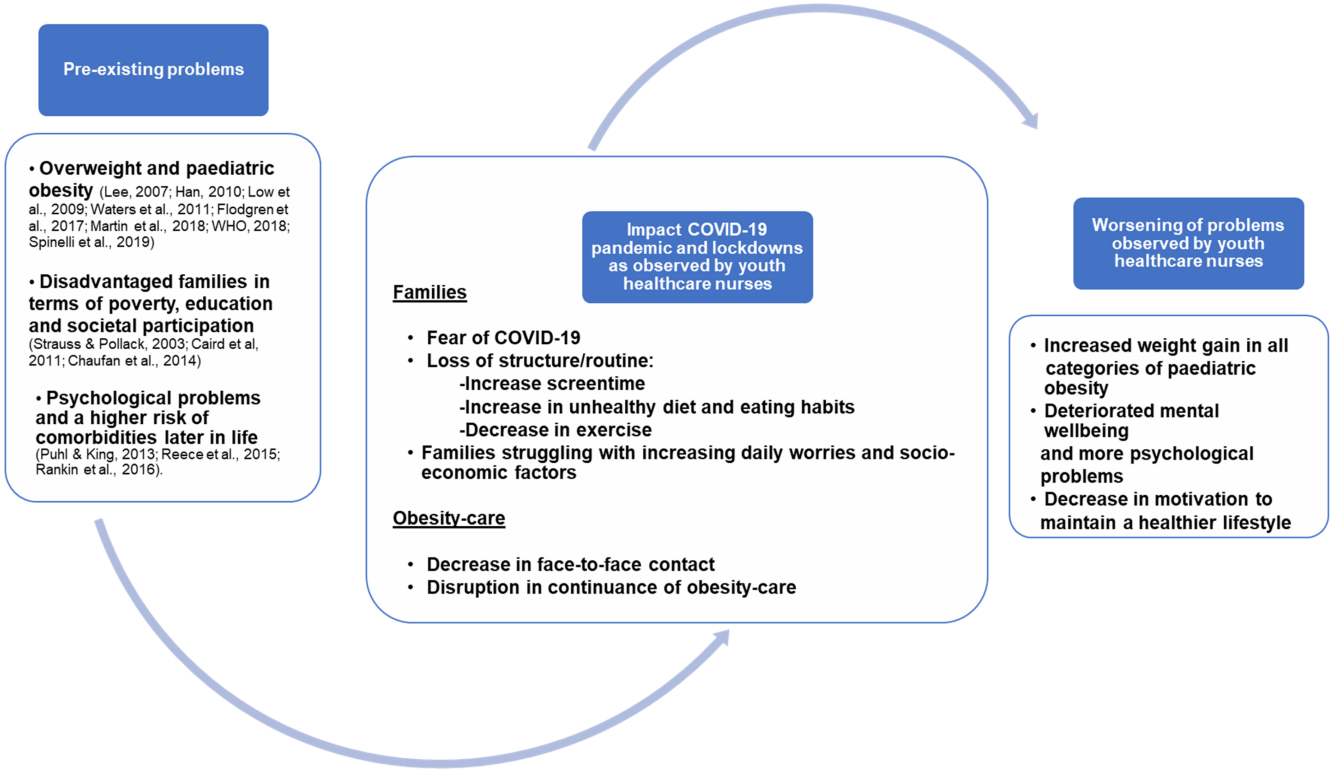

FIGURE 1 Impact of the COVID-19 pandemic and lockdowns as observed by youth health care nurses.

> After the lockdown I saw a lot of negative thoughts in high school, fear of failure. Every consultation period, at least one or two children with suicidal thoughts, no longer wanting to live
>
> (group session, 2021).

A majority of YHC nurses indicated that at the end of the lockdowns children, young people and their families had completely lost their motivation. The loss of motivation diverged, from a decrease in motivation for health education and lifestyle interventions, to a loss of motivation for weight reduction and exercising. Nurses observed a decrease in exercise an increase in unhealthy diet and eating habits, as well as disturbed circadian rhythms, resulting in weight gain. Eileen:

> Motivation for healthy food was less, motivation for sports was less. Some kids really gave up on sports
>
> (group session, 2021).

Ana added:

> In adolescents, there was no motivation for learning, for living. They couldn't find structure anymore
>
> (group session, 2021).

However, YHC nurses also saw some exceptions, there were some families who managed to maintain a healthy lifestyle. Due to the pandemic, they had more time and attention for each other and eliminated their unhealthy behavior patterns further. This manifested in healthy cooking and eating and going out for walks together. What characterizes these families is that they were already (strongly) motivated before the pandemic, and had already recognized their unhealthy patterns of behavior. Kate explained:

> No, it's a general picture that the children, families who were difficult to motivate, that they have relapses, and parents, families who were motivated from the start and who took initiative at home without me having to do much, just with support, they proceeded well and have remained stable [in weight]
>
> (interview 2020).

Lisa identified similar factors as positive to weight loss, such as a family having more quality time together and having both parents at home at the same time:

> The most striking thing in one family was that it was exactly the other way around. The weight curve went suddenly to a healthy weight. So sudden, it was very special. They actually went for big walks with the whole family every evening, real quality time. And they all loved that. And to think they never did that before the pandemic
>
> (interview, 2020).

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3.2 | Challenges YHC nurses encountered in providing obesity care

The main challenges YHC nurses encountered in providing obesity care were (1) a decrease in face-to-face contact with families, and (2) a disruption in the continuance of obesity care, having a band of trust during times of crisis mitigated these challenges.

Though getting professional healthcare was allowed in the Netherlands during the lockdowns, parents were too scared to visit the YHC center. As a consequence, face-to-face contact was scarce, and replaced by telephone, which means that YHC nurses could not engage with children and young people at school or at the YHC center, and see how they were doing. Kate:

> No, it is very difficult [...] Lockdown means no contact, no contact means no care or guidance, care that is not complete. What can you do differently? It's a very good, difficult question that I don't have an answer to
>
> (interview, 2020).

YHC nurses were extremely worried about children who stayed inside for a long time, as well as families they could not get in contact with. They tried to call the families and their schools to enquire about them, but often to no avail. The result was that there was much unknown, unsaid, unnamed, and untreated. Sue expressed:

> I think there were a lot of things parents could not talk to us about [...] vulnerable families with invisible hardships, sorrows, and suffering
>
> (interview, 2022).

The struggles observed were also related to organizational challenges such as a shortage of staff members due to illness as well as YHC nurses going to work in COVID-19 care. The remaining nurses had to do more work in less time. Professionals often spoke about feeling overwhelmed and overworked, making it hard to prioritize Helen shared:

> Everything seems necessary and important
>
> (interview, 2021).

Many YHC nurses expressed that they felt alone and frustrated. Sue and Kate:

> We were not being able to consult the partners in the chain of care; everything was half accessible, no immediate access to a dietician or physiotherapist
>
> (interview, 2022).

For young people with mental health difficulties, there were long waiting lists for mental healthcare. YHC nurses observed the increasing problems that youth experienced, but could not intervene or refer these young people to the care they really needed, which made it emotionally hard to handle. Kathleen:

> Everyone was taken aback by the situation and I think any intervention or additional caregivers you were used working together with was like, hey, how can we continue with this, or can we continue with the care? So those network partners [within integrated care], they weren't really there
>
> (interview, 2020).

They were especially concerned about children who were already living in vulnerable situations. Lisa:

> I felt frustrated, I wanted to help, but how?
>
> (interview, 2022).

Kate reported:

> We just had to keep going, there was little time and room to talk about what was happening and reflect on it. No time to process
>
> (interview, 2022).

3.3 | Implications for future obesity care and policy

The degree of trust that existed between families and YHC nurses before the lockdowns was an important facilitator to keep in contact with families and to enable some access to care. This is crucial for future obesity care. We found that if contact midst YHC nurse and parents were already intensive before the COVID-19 pandemic, it was easier for YHC nurses to establish contact by telephone or, later on, to invite families back to the YHC center. Parents seemed to speak more freely to a familiar voice and tell about the bleak time during the lockdowns, negative and suicidal thoughts, or stress about falling behind at school (field notes, January 2021). When finally allowed to meet, some children and young people felt ashamed of their weight gain and did not want to meet the YHC nurse at school, afraid of being bullied by their peers. YHC nurses looked for creative ways to meet outside the school building, to attend to their needs, and to provide tailored care. Ana reported:

> They know that they can come to me and that they also feel safe. That they can talk about it. Because often they are also ashamed of their weight. They often don't want to be on the [weight] scales there [at school] either. Being adolescents, they are a difficult population to persuade
>
> (interview, 2020).

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YHC nurses could connect with youth and their families faster and easier, if there had been continuity and trust in the contact during the lockdowns, particularly if the YHC nurses had shown their commitment to the family, for example, by calling regularly and inquiring after the whole family. However, there were some families where the contact with the YHC nurse deteriorated during the pandemic, to the extent that they no longer wanted obesity care after the lockdowns. These were especially families who had only just started their care program before the lockdowns, or where contact had already been infrequent before the pandemic. These aforementioned problems observed by YHC nurses were all recognized, acknowledged, and confirmed by the youth healthcare doctors during their national symposium. Implicating that there are families that no longer receive obesity care for their children, and that their health and well-being can be considered unmonitored. In addition, YHC doctors underlined that there was less growth data to keep track of, emphasizing the importance of monitoring growth data in order to track and address trends in child and young people's development. Also, the network partners within the integrated approach for obesity care recognized the problems and pressed on the urgency to act in order to limit and prevent further damage to the health and well-being of young people.

4 | DISCUSSION

The aim of this study was to gain insight into the challenges that YHC nurses observed and experienced during the COVID-19 pandemic and the resulting lockdowns, and to describe implications for future obesity care and policy. YHC nurses reported the exacerbation of problems among children and young people who were already in the highest classification of obesity, such as increased weight gain and an increase in mental health problems, as well as deterioration in their socio-economic situation. At the same time, YHC nurses experienced serious challenges in providing obesity care during the pandemic, such as a decrease in face-to-face contact with children and their families and loss of continuity in integrated obesity care. Three major topics stand out for the discussion and call for action. Firstly, children and young people with obesity are in an increasingly vulnerable position. Their weight increased substantially, as well as their socio-economic worries. These findings are in line with other studies from countries all over the world (Patterson et al., 2021; Pietrobelli et al., 2020; Rundle et al., 2020). In Dutch children aged 4 to 17 years old, the increase in weight after the pandemic is also alarming: 12.9% were overweight in 2022, of which 9.9% are moderately overweight and 3.0% face obesity (Public Health and Care (RIVM), 2023).

Increased weight gain is not unique to the pandemic: researchers reported that any out-of-school time, such as the summer recess, can exacerbate the risk factors for weight gain (von Hippel & Workman, 2016). Patterson et al. (2021) also report that weight gain is correlated with time spent out of school and is greater among those with lower socioeconomic status. A cross-sectional study conducted in the Philadelphia region, USA, found that efforts to reduce COVID-19 transmission have likely contributed to worsening pediatric obesity (Jenssen et al., 2021), resulting in the widening of pre-existing disparities in obesity in terms of ethnicity, insurance, and neighborhood socioeconomic status. Children lose the structure that the school day provides, resulting in an increase in screen time. This was not only observed by the YHC nurses in our study but also found in a study conducted in Turkey, where parents reported an increase in their child's weight, as well as a greater tendency to sleep and use the internet during the pandemic (Adibelli, 2020). Our study corroborates changes in circadian rhythm and a decrease in exercise, as well as a less healthy diet and eating patterns. The YHC nurses in our study also observed an increase in mental health problems. Abawi et al. (2020) report COVID-related anxiety in children and adolescents with severe obesity, as did our study, like worrying, irritability, depressive symptoms, and even post-traumatic stress disorder symptoms.

Secondly, it is striking that the problems these children and their families were facing were to a great extent invisible. In theory, healthcare in the Netherlands was accessible during the pandemic due to the 'partial' lockdown (see also Luijten et al., 2021,p.2796), including obesity care for children and young people. However, families did not want to take any chances, out of fear of catching COVID-19 they were not inclined to visit the YHC center. During and short after the lockdown, the nurses could only contact most families by telephone. Hence, it was difficult to connect with these families during the lockdowns, and a lot of problems became only visible when the nurses could see them face-to-face after the lockdowns. An important factor that positively impacted the renewed connection with these families after the lockdowns were the degree of existing trust between families and YHC nurses before the lockdowns. Existing trust also facilitated the continuity of obesity care during the lockdowns. Detecting the problems only after the lockdowns and not being able to provide the tailored care needed or act sufficiently to improve the physical health and mental well-being of children was painful and frustrating. Where guidelines for managing pediatric obesity recommend family-based strategies, focusing on improvements in lifestyle and behavioral factors, and matching the provided health services to the families' motivation to change (Keaschuk & Ball, 2013), the healthcare system failed both families and YHC nurses during the pandemic. In particular, the healthcare system failed in tailored health communication to people in need. The safety of public health depends on quick, accessible, and accurate information (Fong & Larocci, 2020), but many ethnic minority communities did not find that this was the case. Also Ekezie et al. (2022) report that many families experienced a lack of clarity and inconsistency in the information that was distributed about COVID-19 and the related restrictions, especially those from non-Dutch ethnic background and/or those with practical education. This limited their trust in government and health providers, making ethnic minorities and people with a low socio-economic position vulnerable to disinformation (Ekezie et al., 2022). Our study contained little information about this topic as we did not include families and ethnic minority groups. However, our findings illustrate that trust is

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important and key to continuity of care, we advocate for further research together with families and their community on this issue, and highlight the need for better-tailored health communication.

Thirdly, the YHC nurses reported an increase in mental health problems. Patalay and Hardman (2019) indicate that the connection between mental health and obesity starts to develop at a very young age, and being overweight has a negative impact on mental health, and deteriorating mental health has a further negative impact on being able to lose weight. (Patalay & Hardman, 2019). For example, Storz (2020) reported that prolonged stressful situations could further promote unhealthy food intake through stress-related eating, thereby leading to obesity and other health problems. In addition, stress-related eating has shown to be highly prevalent among 16-year-old girls and could be further exacerbated by the pandemic (Storz, 2020). Furthermore, children with a higher BMI may experience weight-related discrimination and poor self-esteem, which may contribute to an increase in depressive symptoms over time (Patalay & Hardman, 2019). Patalay and Hardman (2019) report that girls and boys with pediatric obesity at age seven are at greater risk of emotional problems at age eleven. In our study, the YHC nurses also observed a loss of motivation for a healthy lifestyle, combined with increasing mental health problems. The nurses fear a negative reinforcing cycle resulting in a deterioration of physical and mental well-being among children and young people, insufficient weight management, high risk of co-morbidity, and a decline in quality-of-life expectance. YHC nurses felt powerless to help children and their families. Considering this serious threat to the mental health of children and young people with pediatric obesity, political decision-making on mental healthcare policy, intervention and prevention is essential cf. (Luijten et al., 2021). Besides YHC nurses advocate that (youth) healthcare organizations provide and facilitate time, space to reflect, to process, and evaluate the struggles and feelings the nurses felt during the pandemic or might face in the near future. Eminently, tailored obesity care and accessible mental healthcare for youth are needed now more than ever. It is urgent but challenging to reconnect with families (in and out of care) and to get families motivated again after the pandemic, and having to start all over again, or even from a worsened situation. This requires what Habermas (2014) has described as 'communicative action'. Communicative action is aimed at achieving understanding in relationships, and connecting, reinforcing, and empowering the competencies and skills of the entire family. Also, This calls for sufficient time, attention, and space in order to be able to take steps forward. In light of possible future pandemics and resulting lockdowns, government officials and policymakers should consider the negative lifestyle and mental effects of lockdowns on children when making decisions regarding when and how to impose such restrictions (Cuschieri & Grech, 2020; Pietrobelli et al., 2020). Families that have struggled with managing their child's weight during this period need encouragement to continue engaging in structured weight management (Appelhans et al., 2022). Our results underscore the importance of such efforts.

This study is not without limitations. We acknowledge that this study was conducted during the pandemic, with periods of lockdown. This meant that we were limited to doing interviews by telephone and online (Microsoft Teams). However, the unique position of the first author offered the possibilities to observe YHC nurses at work and have informal conversations with them. As this study is limited only to the perspective of nurses, the perspective of youth and their families is extremely important. Their perspective will be the topic of a successive study we are currently working on, engaging young people to share their views, explore together what they experienced during the pandemic, and assess what is needed from their perspectives and lives.

5 | CONCLUSIONS

COVID-19 and the resulting lockdowns seem to have worsened the problems that children and young people with pediatric obesity and their families already experienced. Clearly, it is imperative for YHC nurses to reconnect with these families, provide communicative space for the perspective of the children themselves, and build a (new) relationship of trust. This requires long-term tailored obesity care in order to support and help these children and young people achieve health goals that are realistic for them post-COVID. Given the risk of the next epidemics, whether COVID-19 or other infectious diseases, which may result in lockdowns, our findings alert us to the importance of continuously and carefully monitoring youth in obesity care. Most importantly, to keep investing in a trusted relationship between families and YHC nurses, to keep in contact with families with youth receiving obesity care, and prioritize that obesity care remains available and accessible at all times for youth and their families who need it the most.

6 | RELEVANCE FOR CLINICAL PRACTICE

Based on the findings of this study, youth healthcare nurses can collaborate with the local community to implement a health-promotion approach in schools, and utilize this approach to enhance personal, family, and the school environment. Recommendations for clinical practice are: to invest in a trusted relationship with youth, prioritize face-to-face contact in obesity care for children, and that pediatric obesity care remains available and accessible during epidemics and pandemics for families who need it the most.

AUTHOR CONTRIBUTIONS

Siegnella Concincion: Conceptualization; data curation; formal analysis; investigation; methodology; project administration; resources; software; validation; visualization; writing – original draft; writing – review and editing. **Lieke van Houtum:** Conceptualization; data curation; formal analysis; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing – original draft; writing – review and editing. **Birgitta van de Vorst:** Conceptualization; investigation; methodology; project administration; writing – review and

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editing. **Arnoud Verhoeff:** Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing – original draft; writing – review and editing. **Christine Dedding:** Conceptualization; data curation; formal analysis; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing – original draft; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

As transparency and objectivity are essential in scientific research, we disclose that during the research period, the corresponding author and researcher (SC) worked as a youth healthcare nurse and coordinating professional (CP) for the Youth Healthcare department of the Public Health Service Amsterdam, City of Amsterdam, The Netherlands. The professional relationship between the researcher and the youth healthcare nurses who participated in this study is based on the working relationship formed as youth healthcare nurse and CP. The researcher (SC) specifically declared her role as a researcher at the time of conducting the study to the youth healthcare nurses participating.

DATA AVAILABILITY STATEMENT

Data presented in this study are not available to access, post or share. Due to the sensitive nature of the interview questions asked in this study and the unique position of the researcher/corresponding author, the youth healthcare nurses in the study were assured raw data would remain confidential and would not be shared.

ETHICS STATEMENT

The overarching study has been assessed and approved by the recognized Medical Ethical Review Committee of the Amsterdam University Medical Centers (METC; reference number W20_552).

PATIENT CONSENT STATEMENT

Children and young people did not take part in this part of the overarching study. During participatory observations, family members were present but did not have an active role.

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