



'I Think It's Cool That You Can Go from Thinking That Exercising Is No Fun at All to Actually Kind of Loving It.': Experiences of Long-Term Regular Participation in Physical Activity in Adolescents Who Have or Have Had Obesity

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RESEARCH

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ABSTRACT

Introduction: Childhood obesity is associated with cardiometabolic and psychosocial comorbidity, weight stigma, and premature adult mortality. Physical activity provides many health benefits for adolescents with obesity.

Aim: The purpose of this study was to explore what experiences adolescents who have or have had obesity between 13–18 years of age have from long-term participation in regular physical activity in a lifestyle intervention.

Method: Semi-structured interviews were performed with nine adolescents (five girls, four boys) ages 13–18 years who had been participating in physical activity in a regular way in this intervention. They had been participating for one to six years (average 2.8 years). Qualitative content analysis with an inductive approach was used to analyse the data.

Result: The adolescent's experiences of regular physical activity in this intervention was divided into three categories: 1) to experience the joy of movement; 2) to experience influence of the group; 3) to experience personal development. An inclusive and accepting group increased positive feelings of participation and they experienced that they achieved weight loss, improved self-esteem, and generally felt better when they started to be physically active.

Conclusion: When adolescents who have or have had obesity are given the proper circumstances for physical activity, they experience it as fun and self-developing. It is important for adolescents to be allowed to be with friends with similar experiences and be among individuals they feel comfortable with and connected to.

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Childhood obesity is seen as one of the biggest health challenges globally and the prevalence of childhood obesity has been reported to increase worldwide (WHO 2017, Lobstein & Jackson-Leach 2016). During childhood, BMI changes with age and the obesity diagnosis for growing children and adolescents is based on age-specific BMI cut-offs, with several definitions available (Cole, Bellizzi, Flegal & Dietz 2000). The increased prevalence is of importance as it is known that childhood obesity gives rise to a large number of severe comorbidities and affect many aspects of life such as quality of life, self-esteem, and life expectancy (Friedemann et al. 2012; Jebeile, Kelly, O'Malley & Baur 2022; Marcus, Danielsson & Hagman 2022; Llewellyn, Simmonds, Owen & Woolcott 2016). The development of obesity is underpinned by biological predisposition, socioeconomics, and environmental factors that interact with why the treatment offered to the child or adolescent must be tailored for everyone (Jebeile et al. 2022).

Obesity treatment includes supporting behavioral changes concerning diet and physical activity (PA) and should involve the whole family (Jebeile et al. 2022). The goal of PA is to attenuate obesity-related complications, such as reducing blood pressure (Janssen & LeBlanc 2010). However, adolescents and children with obesity have been reported to participate less in sports than children without obesity (Elmesmari, Martin, Reilly & Paton 2018). Further, children and adolescents with obesity have been shown not to experience PA as enjoyable (Deforche et al. 2006) to the same extent as children without obesity (Jefferson 2006). This underlines the need to adapt and offer PA in a safe and non-judgmental environment.

Regular participation in PA is generally associated with improved well-being and lower levels of desperation and anxiety in young individuals (Bjerkan et al. 2022). However, barriers to PA for overweight and obese adolescents are multifaceted. Stankov et al. (2012) elucidate intrapersonal factors such as negative body image, low motivation, and feelings of lack of competence, and interpersonal factors such as verbal or physical bullying, social exclusion, lack of security in the neighbourhood, and lack of support from friends and family. Weight stigma during PA leads to decreased enjoyment during sports and decreased PA at moderate and intense intensities (Myles, Leone, Ayers, Heo & Pietrobelli 2002; Deforche et al. 2006). Moreover, neurodevelopmental disorders are highly overrepresented among children with obesity, requiring further adjustments to the activities offered. (Wentz, Björk & Dahlgren 2017).

Social support is crucial to promote PA for obese adolescents. Parents and relatives play a major role in supporting and reinforcing positive behaviours and promoting lifestyle changes in children and adolescents with overweight and obesity (Aguilar Cordero et al. 2014; Draper, Grobler, Micklesfield & Norris 2015). Other positive social interactions, such as friendship, also increase the motivation to engage in PA (Draper et al. 2015; Salvy et al. 2009; Sundar, Løndal, Lagerløv, Glavin & Helseth 2018) and promote increased PA for adolescents with or without obesity (Salvy et al. 2009). Especially for young girls, PA can be promoted through social support and the opportunity to create new social networks (Draper et al. 2015).

In the PA itself, feelings of fun and enjoyment (Sundar et al. 2018) and feelings of meaningfulness (Lindelöf et al. 2013) were important. Additionally, feelings of being comfortable with one's own body, mastering an activity, and being on the same level as others while performing PA were crucial (Lewis et al. 2014; Sundar et al. 2018). When adolescents with obesity increased their self-confidence in a PA environment, they also gained more self-confidence in other environments of PA (Lewis et al. 2014). Leadership is vital and Lewis et al. (2014) conclude that supportive leaders cater to greater chances of thriving and continuing participation.

Achieving long-term results through behaviour modification for children and youth with obesity is challenging (Styne et al. 2017). Creating sustainable long-term PA habits for young people means constant adaptations of activities based on children's and adolescents' development, enjoyment, and family characteristics (Foster, Moore, Singletary & Skelton 2018). One successful strategy has been to exclude competition and to develop safe and accepting environments (Bombak 2015; Lewis et al. 2014).

Another important factor is time. Weight loss has indeed been achieved through participation in multicomponent short-term treatments (Williamson & Stewart 2005; Nemet et al. 2005). However, participating adolescents in such interventions have experienced concerns and decreased motivation to maintain their weight loss after the intervention (Jones, Al-Khudairy, Melendez-Torres & Oyebode 2018). Interventions for youngsters with obesity are often short-term, between a few months up to a year (Lewis et al. 2014; Nemet et al. 2005). For adolescents to successfully achieve weight loss and change health behaviours, treatment strategies should

be long-term and based on the goals and needs of adolescents and their families (Reece et al. 2016; Zolotarjova et al. 2018).

In summary, regular participation in PA is associated with improved well-being, and the fact that PA provides several health benefits while at the same time entailing minimal risks, stresses its importance in the treatment of childhood obesity. If possible, PA should take place among peers, however only sporadic studies have described successful customized interventions. This stresses the importance to find and describe new treatment options that make PA more appealing for children and adolescents with obesity. As mentioned above, the development of obesity is underpinned by biological predispositions and environmental interacting factors (Jebeile et al. 2022), social support (Draper, Grobler, Micklesfield & Norris 2015) enjoyment (Sundar et al. 2018), as well as time, is crucial for creating long-term PA habits for young people with obesity (Foster, Moore, Singletary & Skelton 2018). Therefore, the purpose of this study was to explore what experiences adolescents who have or have had obesity between the ages of 13 and 18 years have from long-term participation in regular PA in a lifestyle intervention.

THE THEORETICAL PERSPECTIVE OF THE STUDY

This study has its theoretical starting point in the theory of self-determination (SDT) and its emphasis on the basic needs to experience a sense of competence, autonomy, and belonging to experience inner motivation. All three needs are important in the initiation of and maintenance of a behavioural change in health, and may, among other things, be influenced by the feedback of leaders and peers (Ryan, Williams, Patrick & Deci 2009). Internalisation is when a change in regulation happens—when external regulation becomes internal, which is affected by whether the individual himself accepts and identifies with the action and the individual's social context (Deci, Eghrari, Patrick & Leone 1994). The main reason why both young and adult amateurs perform sports is that the activities are enjoyable, and the same is true for adolescents with obesity (Ryan et al. 2009; Lewis et al. 2014). Therefore, SDT is relevant in discussing and setting young adults' experiences in a theoretical context.

METHOD

CONTEXT OF THE STUDY

In 2008, the municipality of Kungsbacka, in the county of Halland (Sweden), developed a PA intervention named the HOME programme (Halland Obesity Municipal Effort-for children). A comprehensive, intensive lifestyle intervention focusing on the children with the greatest need of intensive treatment was developed. Selected children are offered free, active, adapted, and fun leisure time activities in their municipality. Underlining the whole project has been the idea of preventive leisure time and of reaching children through fun activities, but also to moderate the activities that are offered based on the wishes and needs of the children.

The intervention involves the entire municipal community: paediatric care unit, child psychiatry, social services, school health, private companies, and local sports clubs. This includes group and individual activities, and 15 different health-promoting and free activities per week were offered in 2019, including 120 children in Kungsbacka municipality, and 40 children in Laholm municipality. All activities are modified for children with obesity and take place in a safe environment. The activities range from golf, horse-riding, gym training, swimming, fishing, art classes, karate, and dance classes, and the possibility for the child to obtain a grade in Physical Education through specific collaboration with the local schools in the municipalities. The children are given fruit at each activity, and cooking classes are frequently given. The municipal activity coordinator uses different methods such as KASAM, Health Action Modelling, and Empowerment to assist each child to develop skills in self-monitoring, goal setting, problem-solving, contingent reward systems, and stimulus control. Parents are given a specific support program called COPE, Community Parent Education. Some activities include the whole family. Activities are given on school holidays and weekends when children are known to be less active (Nyberg, Kjellenberg, Fröberg & Lindroos 2020).

DESIGN

To approach the adolescents' reflections and experiences in depth, a qualitative exploratory design was chosen (Jamshed 2014). Semi-structured interviews with participants in the HOME

SAMPLE

The inclusion criteria were that the informants should be between 13–19 years and had participated in PA through the HOME Group for at least one year. The reason for including adolescents between 13–19 years was that they were considered able to reason and reflect on their experiences of PA in a health-promoting activity in relation to their contextual conditions.

A purposeful sampling was applied to ensure that the adolescents had experiences participating in PA and thus the opportunity to talk about and reflect on the phenomenon (Denscombe 2014). Recruitment of informants was conducted by the first author, who contacted those responsible for the activities. In cooperation with the first author, they suggested suitable informants, and the first author did the final sampling. Nine adolescents (five girls, and four boys) participated in the study. One omission occurred since it was not possible to get in touch with one of the adolescent's parents to decide on a time for an interview. In the final sample, participants were between 13–18 years (median 14 years) and had participated in the physical activities in the HOME group between one to six years (mean 2.8 years). The adolescents varied in gender, age, and place of residence, which could give a richer variation of the phenomenon studied (Graneheim & Lundman 2004). All had participated in PA through the HOME group. All adolescents who participated in the study were still active in PA through the HOME group. Four of these also participated in other physical activities in addition to the group.

DATA PRODUCTION

Initially, two pilot interviews were conducted with adolescents who were 12 and 15 years old. These interviews were not used in the results but served as a basis for revising the interview guide linguistically and in terms of content.

Semi-structured interviews were conducted digitally with the informants during the period from December 2020 and January 2021 via the Teams service, due to the COVID-19 pandemic. The first author conducted the interviews. The informants and the interviewer were in their respective homes when the interviews were conducted. The participants were invited to the meeting and had to orally agree that the recording takes place before the interviews began. Recordings of the interviews were made by audio, and in some cases by video, depending on how the informants chose to answer the digital call. The interviews lasted between 18 and 23 minutes and were transcribed and decoded to achieve anonymity. All identifiable information was anonymised.

The interview guide was based on open-ended questions about the adolescents' experiences of the activities. It contained questions about previous experiences in sports and PA, experiences participating in the HOME group, motives and obstacles, the group as social support, and finally the prospects of being physically active from a longer time perspective.

Interviews are co-created between the interviewer and the informant, as well as between the interviewer and the text. There was an awareness that the interviewer's pre-assumptions could affect the study (Graneheim et al. 2017) as well as the chosen questions and how the questions were asked (Graneheim et al. 2017). The interviewer was a licensed physiotherapist and had five years' experience working in primary care with patient groups of different ages. Furthermore, the interviewer had extensive experience in PA in sports clubs.

DATA ANALYSIS

Based on the exploratory design, an inductive method of analysis was utilised, focusing on latent content. The first author was responsible for the analysis. All transcribed data were read several times to create an overall understanding of the data. The content was elucidated in relation to the purpose and focused on what was expressed in the adolescents' experiences of physical activities. For the purposes of analysis, the content was divided into six domains; experiences participating in physical activities, experiences of the activity in relation to previous experiences of PA, motives for engaging, experiences of the group processes, experiences of the leaders, and ideas about how young people with and without obesity can be physically active. These domains were identified through a low level of interpretation (Graneheim & Lundman 2004).

Departing from the six domains, meaning units were extracted. One hundred meaning units connected to the purpose of the study were visible. The next step was to group and condense the meaning units and detect the core of the messages in the text (Graneheim & Lundman 2004). The condensed meaning units were read through several times to create an understanding of the adolescents' descriptions of their experiences. Thirty-nine codes were created. Mostly, these codes were close to the text, but some contained a certain degree of interpretation. Patterns in the codes arose, as did similarities and differences, and based on these, three categories emerged. In each step of the analysis process, the parts compared to the purpose of the study made sure that the different parts were relevant and answered the purpose. After the analysis process was completed, the source data was read through again to reduce the risk that any relevant data had been excluded. In this analysis, the degree of interpretation was close to the text (Graneheim & Lundman 2004).

ETHICS

The study is approved by the Swedish Ethical Review Authority (dnr 2019-03721). The informants received written and oral information about the study and were informed that participation is voluntary and confidential, and that the informant has the right to terminate participation at any time without explanations or consequences. The informants had to give oral consent after the information was given, and the consent was formally documented (World Medical Association 2013). For those informants who were under the age of 15, informed written consent was also collected from the informants' two guardians (SFS 2003: 460).

RESULTS

After data processing, 39 codes emerged which were abstracted. From these codes three categories emerged: 1) to experience joy of movement; 2) to experience influence of the group; 3) to experience progress.

TO EXPERIENCE JOY OF MOVEMENT

All participants stated that their overall experience of participating in PA in a lifestyle intervention was a feeling of joy. This was the adolescent's main motive for going to the activities. By participating in these activities' adolescents changed their interest in PA;

'I think it's cool that you can go from not thinking that exercising is fun at all to actually kind of loving it. It's awesome' (#7)

The young people were grateful to have had the chance to participate in the intervention and they experienced that the intervention made the activities fun by allowing them to participate and determine the intensity, and to some extent even the exercises themselves:

'That's what makes you really think 'there is a chance I will come back'—that you get to do a little of what you want' (#4)

The lifestyle intervention was perceived to focus on all individuals doing their best instead of focusing on performance and competition, as had been the case in many other sports the adolescents had tried before. When the physical activities instead focused on joy and self-determination, the comparison of the individual's performance decreased. The adolescents experienced a sense of equality in their PA, which resulted in them not feeling that they impaired the group. The fact that they did not hear condescending comments about their performance added joy to the activities. The fact that the adolescents got to do the activities together with friends increased the joy of the activities, as one adolescent expressed:

'To exercise and have fun. That you should be able to have fun and be with your friends.' (#6)

Many of the participants changed their view of being physically active and found activities that they enjoyed. The reason for this was that they were allowed to do activities at their own preferred level in an environment without competition. These adjustments led to less comparison between individuals in the group and more focus on fun and social values. They expressed that

the group was crucial to get started with PA and in making it fun. Their participation in the group then led adolescents to apply for other activities outside the lifestyle intervention.

TO EXPERIENCE THE INFLUENCE OF THE GROUP

The adolescents felt that the group was a great asset to their well-being. The group was described as inclusive, accepting, and everyone was kind to each other:

‘Without this group, I would not have made it in life, so I would never have gotten into... like if I had started at the gym I would have just quit right away and it is my friends, the whole group who helped me to stay in the group and do the workouts with them’ (#2)

The lifestyle intervention gave the adolescents the opportunity to expand their social networks, and they experienced being connected with each other as everyone had experience with weight problems. The adolescents could therefore be there and support each other in a different way than other friends could.

‘That you make several friends who understand how you kind of feel’ (#5)

In addition to making new friends, the lifestyle intervention also facilitated participants to meet more often. Meeting friends was a motivating factor for going to the physical activities:

‘You exercise with people; you talk to each other and so on and it’s fun. You may not only go to exercise but also to meet friends’ (#4)

The coaches in the lifestyle intervention were, according to the adolescents, supportive and encouraging and they were always there to help and guide in the activities. The adolescents expressed that the coaches were there for them when they were sad and needed to talk to someone. One adolescent expressed the coaches’ holistic perspective:

‘It feels very safe...it feels very safe to have her there, that she cares and not only as a leader but actually cares about us more than participants as well’ (#6)

The coaches in the intervention were compared with previous experiences of trainers in various sports clubs. The adolescents felt that the coaches in this intervention understood them better. Previous experiences with sports were often associated with insecure environments:

‘I have experienced coaches who laughed at me if I made a mistake’ (#8)

The group environment was appreciated by the adolescents and experienced as inclusive and accepting. They experienced a sense of belonging to others in the group who had similar experiences. In addition, the coaches were described as offering a sense of security and caring. Some of the adolescents had had previous negative experiences with former trainers.

TO EXPERIENCE PERSONAL DEVELOPMENT

Since the adolescents had begun to be physically active, they had increased their well-being; they slept better, felt stronger, and they felt that they were able to clear their minds when they were active. The adolescents also experienced weight loss.

‘Two years ago, when I was so fat, I’m still a little fat but I’ve lost weight and that’s why I’m so happy. Two years ago, I thought it was completely impossible to lose weight and that I would die of obesity’ (#2)

The lifestyle intervention also contributed to the adolescent’s social development. They generally experienced better self-confidence and self-esteem.

‘Then when I, after the lifestyle intervention, I dared more; I dared to take [up] more space, I dared to talk to people much more, and because of that I made more friends’. (#8)

The social development also involved increasing their self-respect, which led to increased independence and the ability to take responsibility for their PA:

‘...But now it feels like I would go there even if Lena (the leader) wasn’t there. Lena’s support was the beginning I needed to take the step to start in the gym and then I could take responsibility on my own’ (#4).

The adolescents felt that they developed their skills and knowledge when they were involved in the intervention, as the coaches were competent in training and diet. The young people experienced that the increased knowledge about PA contributed to them reducing the risk of injury and increased their motivation to be physically active:

‘You can see that she knows what she’s doing and that’s why I like her. Because I like having a coach who knows what she’s doing’ (#2)

The adolescents described that they increased their well-being on many levels since they started doing PA on a regular basis. Participation in the activity gave them increased knowledge and skills, which were experienced as motivating.

DISCUSSION

The purpose of this qualitative study was to explore the experiences of adolescents (aged 13 to 18 years) who had or who have had obesity in long-term participation in regular PA in a lifestyle intervention. The adolescents described that they felt that the physical activities in the intervention were enjoyable, they appreciated the environment in the groups, and they felt that they developed in different ways through their physical activities. In the group, they could talk to everyone and make new friends, and they experienced support from both friends and leaders.

All the adolescents enjoyed PA, which was also their main motive for going to the activity. This is in line with most previous studies of adolescents both with obesity (Sundar et al. 2018; Lewis et al. 2014) and without obesity (Ketteridge & Boshoff 2008; Deforche et al. 2006). The adolescents in this study described that it was important for them to be able to choose which intensity and which exercises they performed. The fact that the adolescents were allowed to make their own choices could have increased their sense of autonomy, where consent regarding the behaviour is created (Ryan et al. 2009), which can lead to young people experiencing meaningfulness and increased commitment to action (Law 2002). The adolescents in this study described that they did not feel pressured to push themselves to exhaustion and that they could adapt the exercises to their own ability, which they appreciated. This openness to intensity and choice of exercises was experienced as leading the exercises not to be competition-oriented and therefore they didn’t experience comparisons of performance between the individuals in the group, which is in line with Lewis et al., (2014) and Bombak (2015). Lewis et al. (2014) and Bombak (2015) emphasised that individuals with obesity value environments of PA that do not include competitive elements. Furthermore, the adolescents described that the opportunity to perform PA together with friends increased their enjoyment of the activities, which is in line with previous studies (Maturo & Cunningham 2013; Salvy et al. 2009; Sundar et al. 2018).

In addition to the enjoyment the adolescents experienced in the physical activities, they also stated that they were positively affected by their exercise groups, which were seen as inclusive, accepting, and where everyone was kind. These experiences of the group were similar regardless of the activity and place in which they were performed. Performing physical activities in a safe and accepting environment was also emphasised by the individuals in studies by Lewis et al. (2014) and Bombak (2015). The adolescents in this study described that they connected with each other, as everyone in the group had similar experiences with weight problems. Many of the adolescents stated that they made new friends and that they were not only friends when they met in the intervention, but they also had contact outside the intervention. One interpretation is that the young people felt that they were appreciated as themselves, they felt included, and they felt that the others in the group cared about them. These feelings of belonging are important for an individual’s motivation for action according to Ryan et al. (2009).

Furthermore, the coach’s support was important to the adolescents, both to encourage them in their physical activities and to be there for them when they needed a safe person to lean on. Previous studies show that leaders are important for adolescents’ participation in physical activities (Lewis et al. 2014; Reece et al. 2016) and the way they provide feedback can affect the adolescent’s intrinsic motivation to perform the action. In this study, the adolescents described that they received positive feedback from both coaches and peers, which can increase the adolescent’s sense of competence and thereby increase their commitment to being physically active (Ryan et al. 2009). The adolescents described that the knowledge they had gained in the intervention had been very important to them, especially at the beginning of the participation,

as they felt uncertain about how they would exercise to become stronger and prevent injuries. They said that the coaches were a great asset for increasing their skills.

Experiencing progress in weight loss, improved well-being, and better sleeping habits was an important factor for the adolescents in this study. The experienced weight loss gave them additional motivation to be physically active (Lewis et al. 2014). The adolescents felt that they had developed socially, as they gained better self-confidence and self-esteem. When an individual's self-confidence increases, so does their sense of competence, and their willingness to act (Ryan et al. 2009). To some extent, it can also be assumed that the adolescents had good support from their parents to participate in the exercise group and could therefore experience many parts of the environment as being conducive to PA such (Draper et al. 2015).

This study highlights that adolescents' motives for being physically active are of a similar nature regardless of weight status (Ketteridge & Boshoff 2008; Lewis et al. 2014; Sundar et al. 2018). However, many of the adolescents in this study had previous experience hearing condescending comments from leaders and peers in the context of PA. For some of the young people, it led to them quitting their PA. One interpretation is that when they were allowed to perform PA in an activity where the focus was on the joy of movement, non-judgmental treatment, and respect for each other, they instead had positive experiences of PA and could enjoy the performance. Through the activity, they made friends and enjoyed performing physical activities with them. While the environment in which they performed the physical activities was safe and they received support from both peers and coaches, they felt that they gained knowledge and experienced progress in their physical, mental, and social health. Some of the adolescents were also physically active in sports clubs outside the intervention, which they had begun after participating in the intervention. It can be interpreted as the adolescents gaining a higher self-confidence in the physical activities in the intervention which led them to also have better self-confidence in other contexts of PA. This is in accordance with Lewis et al. (2014). One interpretation is that both an increase in self-confidence and ability in PA led the adolescents to engage more in environments of PA, which can lead to them being able to find environments for them to experience autonomy, increase their competence, and find new groups. When individuals experience feelings of autonomy and competence together with the feeling of belonging, the chance increases that a lifestyle-related behaviour will be maintained over a longer period (Ryan & Deci 2000).

Adolescents' experiences of long-term participation in PA in a lifestyle intervention can change their attitudes toward PA. It can contribute to the internalisation of adolescents' motivation; from being of an external nature to an internal one. This process can be promoted by supporting adolescents with obesity in their autonomy during physical activities (Gourlan et al. 2014). In a socially supportive context, like the intervention in this study, the possibilities of optimal integration also increase, which can lead to the maintenance of behaviour. When a behaviour is performed several times and becomes routine, more health benefits usually arise from the behaviour (Green et al. 2015). Previous studies show that overweight individuals who have become physically active in interventions are concerned about how to maintain the increased PA after the end of the intervention (Jones et al. 2018), at the same time as Reece et al. (2016) showed that young people's ability to maintain a new behaviour can decrease when support from professionals in the intervention decreases, and this can negatively affect adolescent's motivation. One interpretation is that long-term participation in PA can enable the internalisation process, which facilitates the maintenance of the changed behaviour over time. The maintenance of PA over time can also benefit the adolescents in experiencing a high level of autonomous motivation and experiencing the activities themselves as rewarding (Teixeira, Carraça, Markland, Silva & Ryan 2012).

As the intervention in this study was complex with several collaborating actors for the benefit of the adolescents, and as the adolescents expressed many factors that were important to them for their participation in the activities, it is not possible to ascertain whether any specific element was crucial for the initiation and maintenance of PA or if it is the whole that contributes to adolescent's involvement in PA. However, the adolescents from two different municipalities had similar experiences with the intervention, which can show that the context of the activity is independent of geography. Furthermore, the adolescents also expressed that their exercise group was inclusive and accepting and that everyone was kind. This was the case for all the adolescents who were interviewed, which indicates that the intervention has succeeded in creating a feeling of safety in all their exercise groups and in different places. The support that the adolescents received from those responsible for the intervention groups seems to be one of the reasons for continuing their participation in the existing PA group (Lewis et al. 2014).

A strength of this study was that the participants had extensive experience participating in the intervention. In addition, the experiences of the activity were the same, regardless of which of the two cities the adolescents were located. Furthermore, a strength was that pilot interviews were conducted, which led to the development of the interview guide.

A limitation of this study was that only adolescents who had participated for at least one year were included, which may have excluded adolescents who had negative experiences from the intervention. Furthermore, the transition to conducting the interviews digitally may have led to the nuances of the interviews being difficult to interpret. A further weakness may be that the number of interviews was only nine, however, the interviews conducted were considered to provide an in-depth picture of the adolescent's experiences, which was the purpose of the study.

CONCLUSION

Adolescents who have had or had obesity experienced that long-term regular PA in a comprehensive lifestyle intervention was fun. The adolescents who were not interested in PA before starting the intervention all changed their experiences of PA through their participation.

The physical activities were experienced as joyful, as the adolescents could decide the intensity themselves and because they could perform them together with friends who had similar experiences with weight issues. The adolescents felt that it was safe to be part of the group, and they felt they didn't have to be afraid to hear condescending comments, as they had experienced in previous environments involving PA. Furthermore, the adolescents experienced direct health benefits from being physically active and gained hope of being able to lose weight. This study contributes to an increased understanding of factors affecting adolescents with obesity to be physically active regularly for a long period and underlines the need to involve the entire municipal community.

IMPLICATIONS AND FURTHER RESEARCH

One implication is that new types of local networks need to be developed to support the interests of adolescents with obesity. In the current intervention, none of the youth chose to quit their participation, which indicates a need for similar activities. Suggestions for further research are to investigate whether long-term participation in PA in a lifestyle intervention can lead to health behaviours being maintained over time after termination of participation in the intervention. Furthermore, quantitative studies investigating how long-term regular participation in PA can affect health factors for adolescents with obesity are needed.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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