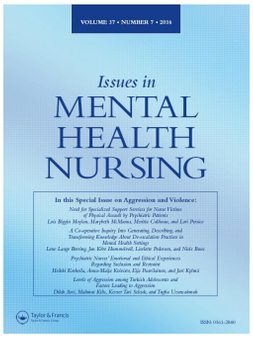

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The Importance of Belonging to a Context: A Nurse-Led Lifestyle Intervention for Adult Persons with ADHD

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ABSTRACT

Living with attention deficit hyperactivity disorder (ADHD) and mental illness involves an increased risk of lifestyle-related diseases. Although there are several ways to provide support to adult persons with ADHD, there is a lack of non-medical strategies for this purpose. This study explore how adult persons with ADHD with mental illness experienced taking part in a nurse-led lifestyle intervention. Fifteen participants participated in a 52-week lifestyle intervention. The analysis revealed two main categories; *Building trusting relationships* and *Health together*. This nurse-led lifestyle intervention could be an alternative or complement to current approaches to promoting health in adults with ADHD.

Introduction

Healthy lifestyle habits are well known to prevent both physical and mental unhealth. According to the WHO, two out of three deaths are related to lifestyle-related diseases (The Lancet, 2018). Adult persons with attention deficit hyperactivity disorder (ADHD) have an increased risk of physical and mental comorbidities mainly due to an unhealthy lifestyle (Anker et al., 2018; Instanes et al., 2018; Nutt et al., 2007; Stickley et al., 2017). Persons with ADHD are overrepresented when it comes to mental illness. About 85 percent of persons with ADHD have some form of psychiatric co-morbidity (Jacob et al., 2007). Persons with ADHD have an increased coexistence of e.g. depression, stress syndrome, anxiety, bipolar syndrome, emotional instability, personality syndrome and autism (Bitter et al., 2019, Solberg et al., 2019; National Board of Health and Welfare, 2019).

Moreover, poor mental health and symptoms of ADHD contribute to difficulties in living a healthy life (Weissenberger et al., 2018). Furthermore, persons with a higher number of ADHD symptoms have higher unhealthy lifestyles rates and show higher rates of substance abuse, alcohol use, nicotine use, unhealthy diet, and sedentary lifestyle (Daurio et al., 2018; Kjaer et al., 2017). Increased body mass index and obesity, risk factors for metabolic syndrome, diabetes and cardiovascular disease, are more common among adults with ADHD (Chen et al., 2018; Semeijn et al., 2013; Spencer et al., 2014).

The core symptoms of ADHD include impulsivity, inattention, and hyperactivity (American Psychiatric Association, 2013). ADHD is a chronic lifelong condition that persist through adulthood but even today there is only a limited awareness of the occurrence of the disorder over one's lifetime, its consequences and appropriate treatment (Zalsman & Shilton, 2016). Many adults with ADHD suffer from problems with executive dysfunctions, e.g. difficulties maintaining attention and motivation, and working memory problems. As a consequence of cognitive impairments, the ability to focus and organize daily tasks and routines also affects the possibility of maintaining a healthy lifestyle (Adler et al., 2017; Kooij et al., 2019). Another consequence of the problematic symptoms of ADHD may be poor academic achievement, followed by a higher risk of unemployment (Fayyad et al., 2017; Simon et al., 2009). This is problematic since low socioeconomic status is a well-known factor associated with several negative health outcomes (Ewart et al., 2017). Although the core symptoms of ADHD are a problem, living with ADHD may be a burden and affect self-image through feelings of powerlessness and a lack of social acceptance (Brod et al., 2012; Schrevel et al., 2016).

The "Consensus of the European Network of adult ADHD" has highlighted advocated the use of coaching and psychoeducation to increase the knowledge of adults with ADHD and address the difficulties they face in psychosocial functioning (Kooij et al., 2010, 2019). Research has identified successful care models focusing on reducing lifestyle risk factors related to the development of cardiovascular disease (Jennings & Astin, 2017). Health education is important for adults with ADHD, as it provides information about ADHD, strategies for handling problems in everyday life,

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and an opportunity to share experiences with people in similar situations (Vidal et al., 2013). Among persons with mental illness, lifestyle intervention is a valid tool for reducing cardiovascular risk factors (Sisti et al., 2018). Additionally, group-based models seem to be the most commonly used design for lifestyle interventions for persons with mental illness (De Rosa et al., 2017) and improving mental and social health (Naslund et al., 2016). Another important issue in lifestyle interventions is being a part of a social group (Forsberg et al., 2010; Graham et al., 2014; Ronngren et al., 2017).

In a randomized controlled study, a group-based, structured psychoeducation program (including lifestyle habit support) for adults with ADHD was identified as effective in increasing knowledge of ADHD and obtaining general life satisfaction (Hirvikoski et al., 2017). In a qualitative study, aimed to explore how young adults with ADHD experienced taking part in an internet-based support and coaching intervention, results show that participants experienced a feeling of safety by obtaining knowledge of neuropsychiatric problems and information on both seeking and receiving help (Sehlin et al., 2018). Additionally, participants with ADHD in a lifestyle program (to quit smoking) expressed that it was important to highlight the specific symptoms of ADHD because the symptoms were found to be a major obstacle to successful lifestyle habit changes (Liebrenz et al., 2016).

To best support healthy lifestyle habits in persons with ADHD, it is necessary for healthcare providers to develop a comprehensive knowledge of performing lifestyle interventions. Therefore, a 52-week nurse-led lifestyle intervention was conducted based on group meetings performed once a week for 20 weeks and then reduced to once a month, the adults with ADHD and mental illness received group education and individual support. Pre- and post-tests of the intervention reported small positive changes following the intervention for the whole group regarding weekly physical activity, quality of life (life productivity subscale), general health and mental health (Björk et al., 2020). The present study was carried out to elucidate the participant experiences of participating in the previous intervention. From that, the aim of this study was to explore how adult persons with ADHD and mental illness experience taking part in this nurse-led lifestyle intervention.

Materials and methods

Design

This qualitative interview study was a part of a nurse-led lifestyle intervention. The intervention took place in Sweden during 52 weeks in September-August (2015-2016). Interviews took place in October 2016, directly after the intervention ended.

Nurse-led lifestyle intervention

A previous nurse-led lifestyle intervention with persons with mental illness, involved group education, interpersonal relationships, and cognitive support was promising in mitigating health risks in persons with mental illness (Ronngren et al., 2017). The structure and components from this intervention were used when developing the current intervention for adult persons with ADHD and mental illness. The intervention was also based on knowledge from a national association named Attention (an interest organization for people with neuropsychiatric disabilities in Sweden), an open adult psychiatric clinic, physiotherapist and interviews with adult persons with ADHD (Björk et al., 2017, 2018). The current intervention included three main components: interpersonal relationships between group leaders and participants, as well as between the participants; health education and advice regarding a healthier lifestyle; and strategies for handling mental illness and the use of cognitive support (e.g., reminders) to facilitate healthy lifestyle habits (Björk et al., 2020).

Unhealthy lifestyle behaviors focused in this lifestyle intervention was actions or inactions that increase an individual's risk for health problems such as chronic disease and consist of, e.g., unhealthy eating habits, tobacco use, alcohol abuse, physical inactivity, and few social contacts (National Board of Health and Welfare, 2018). In this intervention, lifestyle changes performed as individual processes toward physical, mental, social, and existential health.

Two nurses (authors AB & YR) with triple competences (district nurse, mental health nurse, and diabetes nurse) led the intervention (group leaders).

A motivational interviewing was used to strengthen the participants' ability to identify and change unhealthy lifestyle habits (Ortiz & Sjölund, 2015). All participants were also offered individualized physical activity on prescription (Kallings, 2011).

The participants were recruited in two counties in Sweden in 2015. The participants were recruited through collaboration with Attention (interest organization), an open adult psychiatric clinic, and by radio and newspaper. Individuals (n = 48) consented to participate, and 35 started the intervention (21 women, 14 men). The participants were 18 years of age or older and were diagnosed with self-reported ADHD and comorbid mental illness. The exclusion criteria were acute mental illness (e.g., psychoses), active substance/alcohol abuse, inability to speak and read the Swedish language, and mental retardation (self-reported or noticed by the professional nurses).

The participants were divided into four groups, with 6–12 persons per group, and all signed confidentiality agreements regarding the information received in group discussions. In the first meeting, the participants received a pedometer and a diary so that they could track information on exercise, diet, emotions and thoughts, which were discussed in each group session. Each session and follow-up meeting lasted for two hours, see Table 1.

The sessions were divided into four parts: 1) a relaxation exercise, 2) education, (i.e., lecture on the existing topic, 3) an individual consultation regarding nursing prescriptions for physical activity and dietary changes, and 4) a group discussion (participants were encouraged to share their experiences) with healthy refreshments (e.g., fruit). The educational parts were always related to lifestyle habits,

Table 1. Educational and practical components of the lifestyle intervention.

Educational components of the lifestyle intervention	
Meetings every other week for 20 weeks (sessions 1-10) and 8 follow-up meetings once a month (exercise and diet recommendations every session)	
Practical components of the lifestyle intervention	
Practical exercises	Activities
Health education for 20 weeks	**Health discussions for the whole 52-week intervention (exercise and diet recommendations every session)**
1. The ADHD diagnosis (guest lecture)	Group discussion on the strengths and weaknesses of individuals with ADHD and the advantages of ADHD
2. Physical exercise recommendations (guest lecture)	Group discussion on how to be physically active
3. Diet recommendations	Group discussion on how to achieve a healthy diet; diet recommendations from the social board, e.g., carbohydrates, protein, vitamins, fats, different diets
4. Physical health and how to handle and prevent symptoms of physical illness	Group discussion on how and what should be included in physical health and how to be healthy, as well as on comorbidity and treatments (asthma, stomach disorders, pain)
5. Mental health and how to handle and prevent symptoms of mental illness (guest lecture on burnout)	Group discussion on what should be included in mental health and how to stay healthy as well as on psychiatric comorbidity (depression, anxiety, autism, suicide) and how manage symptoms, e.g., breathing techniques, relaxing exercises
6. Cognitive impairments and how to cope with them	Group discussion on cognitive impairments and how to manage them, e.g., schedules, reminders
7. Lifestyle disorders and how to prevent them	Group discussion on sleep problems, stress, metabolic syndrome, type 2 diabetes, and risky living habits, such as use of alcohol/drugs, smoking, and sedentary behavior
8. Working life and sick leave; financial support (guest lecture)	Group discussion on support and how adapt, tips, information and strategies
9. Social relationships	Group discussion on how to support social relationships, loneliness and structure and strategies in everyday life
10. Risky living habits, such as use of alcohol/drugs and smoking	Group discussion on how to handle risky living habits and about sexual life
Different relaxation techniques tested during the group meetings	Training for each participant in relaxation and strategies for everyday life
Tactile massage	Tactile massage including hand and back massage
Physical exercises (walking, gymnastic exercises, gym, yoga, swimming)	Taking part in physical exercises with the purpose of doing activities together and alone and finding something useful for each individual; exercises were done with the group leaders

physical activity and diet, but the main topic for each meeting varied and was adapted to the individual needs and wishes of the group. The main topic was ADHD, depression or other mental disorders, anxiety, insomnia, cognitive disabilities, or cognitive support. Schedules, follow-up discussions, cognitive support e.g. reminders (by SMS, phone calls, and e-mail), and personal training (e.g., walking or training at sport centres) were coordinated by the group leaders. The group also performed physical activity together (e.g., yoga, gym, swimming, etc.). The participants and group leaders also supported each other with mobile phones using a social communication application named WhatsApp.

Participants and recruitment process for the interviews

All individuals who participated in the lifestyle intervention were invited to participate in the interview study after the intervention ended. The participations in the intervention received verbal and written information about the interview study. If they agreed to participate in an interview, the date was set for a meeting in their home district. The participants decided the time and place for the interview. In total, 15 participants, 10 females and 5 males with ages ranging from 19 years to 57 years, consented to participate.

Data collection

Data were collected between September 2016 and October 2016 through individual recorded narrative interviews conducted. Most interviews were conducted at the university closest to the interviewee. Five interviews took place in the home of the participants at their request (cf. Mishler, 1986). During one interview, the participants' personal school support aid was present.

The interviewees were asked to narrate their experience of participating in the lifestyle intervention. Questions queried thoughts and experiences, benefits and disadvantages as well as likes and dislikes. Simultaneously, questions were formulated openly to capture unexpected elements and unique experiences. Initially, the interviewees were asked to speak openly about their experiences with the lifestyle intervention. The following primary questions guided the conversation: "Can you please tell me about your participation in the lifestyle intervention and how you experience it?" Both positive feelings and negative feelings were also explicitly asked about. Questions were used for clarification and to encourage exploration: "How did you feel? What happened? Could you please tell me more?". The interviews had a median duration of 53 minutes (range: 24–83). All interviews were conducted and transcribed verbatim by the first author (AB).

Data analysis

Qualitative content analysis according to Graneheim and Lundman (2004) was used to analyze the data. In this approach, data analysis is performed in several steps. First, the interviews were transcribed and read several times to ensure the researcher's understanding of the data and to

Table 2. Overview of categories and subcategories and the main theme: being embraced in a meaningful context.

Main theme	Being embraced in a meaningful context			
Categories	Trusting relationships		Health together	
Subcategories	To feel togetherness	To experience trust and confidence	To be supported and encouraged strengthens	To feel fitter and stronger

achieve a sense of the whole. The second step was to identify meaning units based on specific aspects of the participants' experiences with the nurse-led lifestyle intervention in accordance with the research questions and the aim of the study. In the next step, the meaning units were condensed, abstracted, and labeled with a code. The codes were compared to each other to identify similarities and differences related to the research question and the content of the text. Similar codes were grouped and abstracted into subcategories. Finally, the main theme was abstracted from the categories. The analysis was not linear, and to avoid misunderstanding the text, the analysis was carried out by repeatedly moving between the growing categories and the data. The initial analysis was performed by the first author (AB), followed by discussions between all four authors. All authors were involved in the interpretation of the findings until a consensus was reached.

Ethical considerations

For ethical considerations, the guideline of the World Medical Association Declaration of Helsinki was applied. Written informed consent was obtained from each participant. All collected data were treated confidentially, and the participants were informed that they could withdraw from the study at any time without further explanation (World Medical Association, 2018). The Regional Ethical Review Board in Umeå (Dnr 2015/51-31) approved the study.

Results

The findings from the interviews can be summarized by the main theme "Being embraced in a meaningful context" and consist of two categories: Trusting relationships, and Health together. See Table 2 for an overview of the analysis. Quotations are used to illustrate the experience of participating in a lifestyle intervention among adult persons with ADHD. In the presentation below, all participants are anonymized by "person".

Trusting relationships

This category, based on individuals' understandings of being a part of the interventions, was constructed from two sub categories: *To feel togetherness*, and *To experience trust and confidence*. This category reflects how participating in the nurse-led lifestyle intervention for persons with ADHD and mental illness generated trustful relationships. Being in a trusting relationship meant a sense of togetherness, trust and confidence with friends and feelings of being acknowledged. Building trusting relationships required tolerance and safety in the meetings. Being a part of the group led the participants to experience respect, goodness and humanity and have feelings of generosity.

To feel togetherness

The subcategory *To feel togetherness* revealed a sense of energy based on the effect the group relationships had on the hope for lifestyle changes. Togetherness was described as important in that it was easier to heal their wounded bodies and souls when meeting persons in similar situations. Thus, participating in the intervention gave the participants the energy and strength needed to manage their daily lives. One participant said:

> Togetherness in the group, feelings of calm. It was feelings like a conditioner over burnt skin for me, as I felt it was cooling. Thought it was really nice.

The group relationships grew during the intervention, which made the participants feel like unique persons listening to each other's stories. Open and confidential conversations were expressed as a foundation for healing in togetherness. That is, the conversations in the group created a feeling of being understood and the experience of being able to "take their face off". This resulted in a feeling of normality, to be a human among humans.

To feel lonely, describe the participants´ individual reasons for joining the intervention as well as retrospective reflections on their own thoughts during the intervention. Everyday life was expressed by the participants as a struggle. That is, to struggle with loneliness and hopelessness related to living as an adult with ADHD and the lack of support due to having few close friends. The participants reporting knowing no one in a situation similar to theirs with whom they could share their experiences, which resulting in feeling a lack of understanding from others. Despite the diagnosis and difficulties, the individuals reported a curiosity related to other adult persons with ADHD who were in similar situations and wanting to healthy lifestyle.

Participation in the lifestyle intervention helped the participants become aware of their life situation given the symptoms of ADHD. A central part of living with ADHD was explained by the participants' stories and their reported lack of close relationships with friends and love ones. That is, the participant's retrospective reflections of participating in the intervention explain their experiences of loneliness. Through the intervention, the participants got possibilities to share their feelings of loneliness that their relationships decreased through life, and of their own longing for and seeking fellowship. The participants feared being alone in the future and expressed that life becomes more socially limited over time. The participants explained that it took a lot of energy to constantly end up in conflicts and misunderstandings that result in being left alone. Several of the

participants kept their ADHD diagnosis a secret from colleagues and expressed a tendency to deny the illness. The participants declared that the feeling of not being able to fully be oneself (denying one's self as a person) means feeling lonely because it is painful to try to be someone else. The participants expressed feelings of being different from others, which also resulted in loneliness and could lead to suicidal thoughts, as one person explained:

> I didn't realize that my thoughts where suicidal, but I often thought about disappearing. I felt… I was a… kind of an outsider. It was that loneliness… being odd.

To experience trust and confidence

The sub category *To experience trust and confidence* related to cooperation with persons in similar situations and having some structure in the group. Having a certain structure to group meetings created a feeling of harmony, respect for each other, a feeling of being able to be one's self and being accepted as one is. Some persons explained that too much structure destroys creativity and initiative and that too little structure is stressful. The participants reported that feelings of alienation arose when the groups were too large or had too many active participants. Trust and confidence were created because of the support and care the participants provided each other with no guarantee of or requirement for reciprocity. One participant explained the effect of having the same structure at the beginning of each group meeting.

> You could discover "yes, but I miss he, her" and so. Then, group leader could tell why they were gone, that they didn't come. For anyway, you also get anxiety, what has happened … "why is he not here tonight" …. And, it is also something that is very … so very nice to be missed by someone, that is also very important, preferably if you can feel alone.

It was obvious that the trustful relationships in the intervention led to trust and confidence. For example, the participants shared their own feelings to be abandoned. Feelings of powerlessness and hopelessness and the feeling of being abandoned are related to how ADHD symptoms affect the possibility of living a "normal life" with no one to share experiences with. These feelings of being abandoned are also related to work life where individuals report having no one to share experiences with or turn to for support. Growing up and not want to be dependent on parents also resulted in a feeling of abandonment for some. The participants expressed that there is no safe space anywhere and the feeling having nowhere to turn for support, understanding, sympathy and empathy. The feeling of being abandoned is strengthened by experiencing a lack of continuity in health care support. Some participants reporting that they never met a given doctor or nurse more than once. Individuals feeling that they were disturbing the healthcare staff resulted in their feeling the need to apologize for their own existence and the feeling of being existentially wounded, as one participant explained:

> I have a nurse through the unit of neuropsychiatry, but they've changed nurses recurrently recently, and we don't have a stationed doctor. As a consequence, when I call, I get the sigh and the 'do you really have to call us and disturb, we are very busy'. This is a bit hurtful every time, so I apologize for my existence, but I do need a bit of help. As I said, existentially wounding… of course it hurts but I am used to it. It's sick, I mean it's horrible that I say that I'm used to people keeping up their guard, to distance me for different reasons, and that's… I can get intense, I can be very difficult to be around.

Feeling acknowledged requires meeting people in similar situations to one's own and being one's self and results in feeling listen to as a person in conversations about life and the problems associated with living with ADHD. Being acknowledged also resulted in feelings of strength and fellowship instead of loneliness and deepened the relationship between the participants' feelings of hope, thankfulness, and safety. One participant presented the intervention as a lifesaver:

> It was a lifesaver, and I am still forever grateful for it… just to be able to call him and just 'dude, I need help', and he came.

Health together

This category comprises two subcategories*: To be supported and encouraged strengthens, and To feel fitter and stronger*. This category reveals that several participants expressed feeling hope and personal growth as other participants shared their life skills when they became more familiar with each other. They felt supported by other group members in making lifestyle changes both during and between meetings. Providing support and communicating with the app was sometimes reported as difficult and confusing. The participants also described barriers to lifestyle changes but explained that togetherness helped by providing coaching and a better understanding of mental and physical health.

To be supported and encouraged strengthens

The participants described a sense of hope due to how the conversations and encouragement due to the togetherness improved the possibility of making lifestyle changes and provided a sense of well-being. The hope was explained as resulting from the ability to converse, listen and do things together. The participants also reported being exposed to other participants with different sexes, ages and living backgrounds but with their shared experiences in living and surviving with ADHD, which resulted in feelings of improved mental health and personal growth.

> It's been a bit crazy both at work and at home, and yeah, but when you talk about it in group meetings, I received a lot of support and advice. So, I felt so much better psychologically when I left. I kind of grew.

The participants reported feeling like they were a part of a dialogue once they became more familiar with other group members. The participants explained that giving supporting suggestions and sharing lived experiences was not only communicating but also providing support in a deeper sense. This means that the continuous dialogue in the group increased the participants' self-confidence and gave them additional tools to handle their life situation and increasing

their experienced vitality. Being in a dialogue meant not being alone, and giving and receiving support from other participants increased self-confidence, vitality, and the ability to take on lifestyle changes. One person said:

> Yes, everyone at the table shared experiences, and we could advise others and talk deeper. I thought that was a really good meeting.

The communication between group members was not limited to the meetings. Instead, there was ongoing communication by text message. Being in a dialogue that was supported by text messages resulted in difficult reflection but also feelings of courage and opening up more than before. The participants recognized the generosity of feedback within the group, and they meaningfully engaged in the discussions between the group meetings via text messages. The participants also reported being more vulnerable and confused with text messages when it was difficult to understand what the message was about. The supporting text messages (via the application WhatsApp) were potential triggers but also amusing, and the participants felt supported in making lifestyle changes. One participant said:

> Do you know what is really fun? It is that you could write "Yes, I have done something", "Yes, now I have been and thus. now I've done … so … don't know if it's reward … it's like a little yes! And discover for yourself that I was good. I could tell how good I was.

To feel fitter and stronger

The subcategory *To feel fitter and stronger* revealed that participating in the lifestyle intervention presented the possibility of feeling fitter and stronger with more energy. That is, the participants gained knowledge of diet and exercise in both theory and practice. The participants also expressed a general wish to change their habits and become more active because the other participants in the intervention gave advice and spoke about it. That is, the others in the group acted as mirrors in which they could see their progress or lack thereof, which the participants themselves could not see.

This was both joyful and facilitative of lifestyle change.

The participants spoke about changes they had made in their daily life at the time of the interview, such as eating healthier food with more fruit and vegetables. One person expressed a sensation of reduced fatigue:

> I noticed a great difference when I changed my eating habits to eating more greens and such. Because if I eat that for two days and then … well I try to eat healthy and then I lose that and start eating fast food and order take out. I become way more drained then compered to when I have been eating healthy.

The participants stated that the lifestyle intervention provided an increased sense of joyfulness and well-being experienced as feeling fitter and stronger and that they had tried to exercise in a way they never thought they would. The participants also expressed a reduction of symptoms, such as experiencing less confusion and depression and better managing eating disorders, as expressed in the following quotation:

> Sometimes I don't want to eat but I do it anyway, so I don't think I have an eating disorder any more. I feel that my inner chaos is better and the workout has contributed to that. These days I experience anxiety, but I don't feel depressed. It's really weird.

Participating in a lifestyle program revealed certain factors that affect the possibilities of improving the health of persons with ADHD. The participants also spoke of physical, mental and social impediments as poor economy, pain in the body, tiredness, forgetfulness, poor coordination, lack of endurance, and shyness. Despite problems with participation, lifestyle changes are made because of togetherness, as one person explained:

> I can't imagine the smell of stinking carpets and gym halls and changing rooms and … The biggest problem was the changing room, I usually change in my car. To avoid … it is the physical part, to reveal yourself to normal fit people. But I have to say, I managed to break through my own abashment once not too long ago. I went to the baths/the bath house/the swimming hall.

Discussion

This study aimed to explore how adult persons with ADHD and mental illness experience taking part in a nurse-led lifestyle intervention. The findings of the participants' experiences led to the theme *Being embraced in a meaningful context*, all of which can be seen as important parts of health promotion, and in a broader sense, these findings can be understood in terms of the intervention as being embraced in a meaningful context.

The results from the quantitative evaluation of this lifestyle intervention support these qualitative findings. This intervention is one way to give comprehensive lifestyle habit support for general- and mental health in persons with ADHD and mental illness (Björk et al., 2020). The strategy of this intervention, which included health education, physical activity, interpersonal relationship and cognitive support was a way to ease the symptoms of ADHD as well as symptoms of mental illness.

It is interesting that all the interviewed participants reported that the group cohesion, and interpersonal relationship was the most central therapeutic factor in this lifestyle intervention. Yalom and Leszcz (2005), noted that this finding could be explained by different factors that interact within the group, and ultimately leads to a process of change for the individual. Furthermore, Yalom and Leszcz (2005) argue that the group cohesion and the relationship with the group leaders; the other members creates an acceptance, security, belonging and the experience of not being the only one with such kind of problems.

The participants supported each other by sharing knowledge and experiences and improving and increasing their control over their own health. The cognitive and social effects of the intervention probably motivated the participants and helped them understand how their new knowledge could be used to promote health through discussions of health (cf. Sorensen et al., 2012). One practical example that might have helped the participant to minimize ADHD

symptoms of poor motivation to lifestyle habit change was the findings of regarding increased weekly physical activity (Björk et al., 2020).

As previous studies have shown, many adults with ADHD are misdiagnosed and unrecognized among psychiatric outpatients (Pehlivanidis et al., 2014). The motives to participate in the intervention included feelings of loneliness, the needing of support, feelings of lack of community and a wish to discuss issues pertaining to living with ADHD. Insufficient support might be common among individuals with ADHD. The participants described feelings of being abandoned by health care, in workplaces and in other relationships, which is reported in the absence of a health-promoting and person-centered approach (Swedish Council on Health Technology, 2013). Likewise, Matheson et al. (2013) found that a lack of support causes feelings of being abandoned. The participants in this study knew that they were creative and inventive, which was a motivation to participate in the intervention to meet others in similar situations, and obtain knowledge of how to live a healthier life and meet others to share their experiences with.

Participating in the lifestyle intervention could also lead participants to recall broken relationships with a feeling of loneliness and exclusion and the feeling of not being such as others. The intervention both made participants aware of their situations (there were many such discussions in the group meetings) and gave them the opportunity to express their feelings. The participants described that they felt like an "elephant" in the room when they were among people without ADHD diagnose. The participants described that they were always wearing "a mask" as a defence. Krueger and Kendall (2001) studied adolescents with ADHD, who described them in terms of their difficult ADHD symptoms rather than maintaining an identity distinct from the disorder "They were their ADHD and their ADHD was them". In this intervention, the participants expressed that meeting others with the same problems related to the diagnosis of ADHD left them feeling acknowledged as humans.

It is necessary for human needs that they acknowledge each other, and the foundation for humanity lies in togetherness with other people according to (Buber, 1997/1951). They felt cared for through the group meetings. They felt acknowledged when the participants listened to each other's life stories and needs. Positively, this intervention give small improvements in quality of life which also might ease the negative consequences of ADHD (Björk et al., 2020).

The feeling of being acknowledged was linked to the category *Building trusting relationships.* The participants in the intervention described that being together made them feel special and respected as a human, which gave them energy, hope and feelings of healing. These results confirm the findings of Carek et al. (2011), who also found that engagement in and performance of everyday activities was dependent on feelings of trust and togetherness with other people. Peplau (1992) claims that compassionate verbal and nonverbal communication, a respectful approach, and nonjudgmental behavior are essential to feelings of trust.

The category *Health together* describes how the participants expressed that talking to each other gave them hope in their ability to change their lifestyle habits. When the relationship deepened to a dialogue between the participants, the participants could share common life experiences and learn additional coping tools from each other that improved their physical, mental and social health. These findings are in accordance with those of earlier research regarding life style interventions (Ek & Isaksson, 2013; Ronngren et al., 2017). By creating a deeper relationship both through in-person group meetings and through the app (WhatsApp), some participants described the intervention as a kind of coaching to change their lifestyles. Some of the participants described the benefits of working out more or less and eating healthier. By that, this theme can be described as an evaluation of the intervention. There were also effects on physical activity and on some psychological symptoms at the individual level (Björk et al., 2020). Nonetheless, the participants also described barriers to lifestyle changes, such as poor finances, pain, fatigue, and forgetfulness, a lack of endurance and shyness that affected their attempts to change their lifestyles. However, the togetherness seems to have encouraged participation in health-promoting activities in this intervention.

In this intervention, the participants spoke about being together as producing a special feeling that contributed to feelings of health and well-being. The participants valued the feeling of being welcomed by the other participants in the intervention. They described the friendships in the group as essential because they allowed them to be themselves, to be one of the group. The experience of being missed by others, if they did not participate in the group meetings, made the participants feel valuable. Some of the participants talked about the intervention as a life saver. The intervention was a life saver, the participants explained, because it allowed some to stay alive and all participants to learn from other survivors. Being with the other groups members and receiving support from the group in the form of coping tools, knowledge, and the experiences of others made them feel hopeful and have the courage to make lifestyle changes. This may be seen as an expression of togetherness from the participant's perspective in contrast to the patient perspective that they described when their dignity was violated. According to Buber (1994), all humans are born into togetherness with other people, and this togetherness may be seen as a foundation for all humanity. All forms of care constitute variations of human togetherness, which Eriksson (1990) described as a healing process. The participants experienced hope because of the other participants, that is, because of "the togetherness". The hope reported by the participants seems to originate in the strength and energy they gained from each other and the trust in themselves and others that was created, all of which motivated the participants to pursue a healthier life. Hope is crucial for recovery in mental illness (Schrank et al., 2012).

The support and counseling the participants received from other group members and the group leaders in this study might have affected self-efficacy to lifestyle habit

change (Bandura, 1977). The participants expressed that knowledge of change and personal growth were stimulated when they connected with other group members; in other words, they felt empowered. These findings can be connected to the study of Graham et al. (2014), who identify four incentives that help mental health service users make healthy behavioral changes: factors of empowerment, self-value, personal growth and the need for social context and support. Social support has been reported as contributing improving mental health (Roberts & Bailey, 2011). Although not all participants could reach the goal of being physically active and eating healthy, the participants expressed a sense of meaning and a sense of belonging that gave them a new force and energy to handle life and try to live healthier.

In conclusion, the nurse-led lifestyle intervention studied here offered social support for the pursuit of physical and mental health. It is well known that feeling like a person who is not chosen and is forgotten negatively affects health. The participants in this study expressed longing for support and feelings abandoned. Eriksson (1994) explains that feelings of being abandoned are due to early experiences of inadequacy. When a human has a picture of themselves as unworthy, they experience shame, and this picture can play a central part in life suffering. Feelings of shame are related to several mental disorders and are disempowering (Carr-Fanning & Mc Guckin, 2018; Scheel et al., 2014). The participants expressed a turning point in the two categories: *Trusting relationships* and *Health in togetherness*. Togetherness makes people feel special and respected as humans and gives them energy, hope and feelings of healing and personal growth that make them stronger and able to handle lifestyle changes. A changed lifestyle, with more physical activity and a healthier diet, may affect their well-being and ADHD symptoms. The participants expressed experiencing change and personal growth when they connected with other group members; in other words, they might feel empowered.

Methodological considerations

The participants all experienced a need to improve their own health. Additionally, most of the participants took part in the intervention for the whole intervention period, which indicates that the intervention was a valuable for the participants (Björk et al., 2020).

It is difficult to say anything about transferability, as this is a small qualitative study of a specific lifestyle intervention (Graneheim et al., 2017). Moreover, ADHD is a lifelong and chronic condition, it is difficult to determine the impact a lifestyle intervention might be expected to achieve. Also, the intervention consisted of several integrated parts, and it is not possible to pinpoint the cause of the experienced improvements in each individual person. Each group session followed the same structure, but it is not possible to gauge whether all participants received the same content, especially because relationships between group members might have varied.

The group leaders who established relationships with group members and led the intervention also conduct the data collection, which could result in a bias toward positive experiences. However, previous experiences within the research team about interviewing people with mental illnesses revealed that individuals can be short spoken and have anxiety when talking to strangers. To avoid only positive feedback, the author clarified the desire for negative feedback about the intervention. However, many of the participants expressed a history of lack of support from health care and few close contacts which probably affect these findings in a favorable position. That is, the "information power" was strong in fulfilling the aim of the research as the 15 interviews were rich and the participants were willing to share their experiences of participating in the intervention (Malterud et al., 2016). The participants' distribution in age, experience and education gave the study a wide variety of participants with different experiences and aspects, which gave the study credibility (Graneheim & Lundman, 2004).

The physical interpersonal meetings together with WhatsApp played an important role in this intervention. In order to enhance the continuity and availability in intervention, more online application could be considered. For example, online meetings could replace some of the physical meetings.

Summary

The participants in this nurse-led lifestyle intervention experienced health-promoting togetherness that allowed them to become aware of their life situations, develop trusting relationships and improve their health together. The participants were motivated by these relationships to make lifestyle changes. The findings highlight that these relationships served a coaching function. In this study, the adults with ADHD reported that the nurse-led lifestyle intervention improved their health and well-being and therefore minimize the problems caused by ADHD.

Although an intervention such as this is not a replacement for other support, it could be a promising complement or alternative to other support and treatment options to promote health among adults with ADHD.

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There is no conflict of interest.

Author contributions

AB - substantial contribution to the conception of design and interpretation of the data. Interpretation and analysis of data; **AB**, **EW**. All authors gave final approval of the manuscript for publication.

References

Adler, L. A., Faraone, S. V., Spencer, T. J., Berglund, P., Alperin, S., & Kessler, R. C. (2017). The structure of adult ADHD. *International Journal of Methods in Psychiatric Research*, *26*(1), e1555. https://doi.org/10.1002/mpr.1555

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Anker, E., Bendiksen, B., & Heir, T. (2018). Comorbid psychiatric disorders in a clinical sample of adults with ADHD, and associations with education, work and social characteristics: A cross-sectional study. *BMJ Open*, *8*(3), e019700. https://doi.org/10.1136/bmjopen-2017-019700

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bitter, I., Mohr, P., Balogh, L., Látalová, K., Kakuszi, B., Stopková, P., Zmeškalová-Jelenová, D., Pulay, A., & Czobor, P. (2019). ADHD: A hidden comorbidity in adult psychiatric patients. *Attention Deficit and Hyperactivity Disorders*, *11*(1), 83–89. https://doi.org/10.1007/s12402-019-00285-9

Björk, A., Rönngren, Y., Selander, J., Vinberg, S., & Hellzen, O. (2017). Perspectives on everyday suffering among people with adult attention deficit hyperactivity disorder and concurrent mental disorders. *Open Journal of Nursing*, *7*(5), 583–598. https://doi.org/10.4236/ojn.2017.75044

Björk, A., Rönngren, Y., Selander, J., Vinberg, S., Hellzen, O., & Olofsson, N. (2018). Health, lifestyle habits, and physical fitness among adults with ADHD compared with a random sample of a Swedish general population. *Society, Health & Vulnerability*, *9*(1), 1553916. https://doi.org/10.1080/20021518.2018.1553916

Björk, A., Rönngren, Y., Wall, E., Vinberg, S., Hellzen, O., & Olofsson, N. (2020). A nurse-led lifestyle intervention for adult persons with attention-deficit/hyperactivity disorder (ADHD) in Sweden. (2020). *Nordic Journal of Psychiatry*, 1–11. https://doi.org/10.1080/08039488.2020.1771768

Brod, M., Schmitt, E., Goodwin, M., Hodgkins, P., & Niebler, G. (2012). ADHD burden of illness in older adults: A life course perspective. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, *21*(5), 795–799. https://doi.org/10.1007/s11136-011-9981-9

Buber, M. (1994). *I and thou.* (2nd ed.) Dualis Förlag AB.

Buber, M. (1997). *Distans och relation [Urdistanz und beziehung] [Distance and relation]*. Dualis Förlag AB (Original German work published 1951).

Carek, P. J., Laibstain, S. E., & Carek, S. M. (2011). Exercise for the treatment of depression and anxiety. *Int J Psychiatry Med*, *41*(1), 15–28. https://doi.org/10.2190/PM.41.1.c

Carr-Fanning, K., & Mc Guckin, C. (2018). The powerless or the empowered? Stakeholders' experiences of diagnosis and treatment for attention-deficit hyperactivity disorder in Ireland. *The Irish Journal of Psychological Medicine*, *35*(3), 203–212. https://doi.org/10.1017/ipm.2018.13

Chen, Q., Hartman, C. A., Haavik, J., Harro, J., Klungsøyr, K., Hegvik, T.-A., Wanders, R., Ottosen, C., Dalsgaard, S., Faraone, S. V., & Larsson, H. (2018). Common psychiatric and metabolic comorbidity of adult attention-deficit/hyperactivity disorder: A population-based cross-sectional study. *PLoS One*, *13*(9), e0204516. https://doi.org/10.1371/journal.pone.0204516

Daurio, A. M., Aston, S. A., Schwandt, M. L., Bukhari, M. O., Bouhlal, S., Farokhnia, M., Lee, M. R., & Leggio, L. (2018). Impulsive personality traits mediate the relationship between adult attention-deficit/hyperactivity symptoms and alcohol dependence severity. *Alcoholism, Clinical and Experimental Research*, *42*(1), 173–183. https://doi.org/10.1111/acer.13538

De Rosa, C., Sampogna, G., Luciano, M., Del Vecchio, V., Pocai, B., Borriello, G., Giallonardo, V., Savorani, M., Pinna, F., Pompili, M., & Fiorillo, A. (2017). Improving physical health of patients with severe mental disorders: A critical review of lifestyle psychosocial interventions. *Expert Review of Neurotherapeutics*, *17*(7), 667–681. https://doi.org/10.1080/14737175.2017.1325321

Ek, A., & Isaksson, G. (2013). How adults with ADHD get engaged in and perform everyday activities. *Scandinavian Journal of Occupational Therapy*, *20*(4), 282–291. https://doi.org/10.3109/11038128.2013.799226

Eriksson, K. (1990). *Pro caritate. En lägesbestämning av caritatativ vård [Caritative caring: A positional analysis]*. Åbo Akademi University Department of Caring Science.

Eriksson, K. (1994). *Den lidande människan [The suffering human being]*. Liber Utbildning.

Ewart, S. B., Happell, B., Bocking, J., Platania-Phung, C., Stanton, R., & Scholz, B. (2017). Social and material aspects of life and their impact on the physical health of people diagnosed with mental illness. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*, *20*(5), 984–991. https://doi.org/10.1111/hex.12539

Fayyad, J., Sampson, N. A., Hwang, I., Adamowski, T., Aguilar-Gaxiola, S., Al-Hamzawi, A., Andrade, L. H. S. G., Borges, G., de Girolamo, G., Florescu, S., Gureje, O., Haro, J. M., Hu, C., Karam, E. G., Lee, S., Navarro-Mateu, F., O'Neill, S., Pennell, B.-E., Piazza, M., … Kessler, R. C, WHO World Mental Health Survey Collaborators. (2017). The descriptive epidemiology of DSM-IV adult ADHD in the World Health Organization World Mental Health Surveys. *ADHD Attention Deficit and Hyperactivity Disorders*, *9*(1), 47–65. https://doi.org/10.1007/s12402-016-0208-3

Forsberg, K. A., Bjorkman, T., Sandman, P. O., & Sandlund, M. (2010). Influence of a lifestyle intervention among persons with a psychiatric disability: A cluster randomised controlled trail on symptoms, quality of life and sense of coherence. *Journal of Clinical Nursing*, *19*(11–12), 1519–1528. https://doi.org/10.1111/j.1365-2702.2009.03010.x

Graham, C., Rollings, C., De Leeuw, S., Anderson, L., Griffiths, B., & Long, N. (2014). A qualitative study exploring facilitators for improved health behaviors and health behavior programs: Mental health service users' perspectives. *The Scientific World Journal*, *2014*, 8704973. https://doi.org/10.1155/2014/870497

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Graneheim, U. H., Lindgren B. M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, 56, 29–34. https://doi.org/10.1016/j.nedt.2017.06.002

Hirvikoski, T., Lindstrom, T., Carlsson, J., Waaler, E., Jokinen, J., & Bolte, S. (2017). Psychoeducational groups for adults with ADHD and their significant others (PEGASUS): A pragmatic multicenter and randomized controlled trial. *European Psychiatry: The Journal of the Association of European Psychiatrists*, *44*, 141–152. https://doi.org/10.1016/j.eurpsy.2017.04.005

Instanes, J. T., Klungsoyr, K., Halmoy, A., Fasmer, O. B., & Haavik, J. (2018). Adult ADHD and comorbid somatic disease: A systematic literature review. *Journal of Attention Disorders*, *22*(3), 203–228. https://doi.org/10.1177/1087054716669589

Jacob, C. P., Romanos, J., Dempfle, A., Heine, M., Windemuth-Kieselbach, C., Kruse, A., Reif, A., Walitza, S., Romanos, M., Strobel, A., Brocke, B., Schäfer, H., Schmidtke, A., Böning, J., & Lesch, K.-P. (2007). Co-morbidity of adult attention-deficit/hyperactivity disorder with focus on personality traits and related disorders in a tertiary referral center. *European Archives of Psychiatry and Clinical Neuroscience*, *257*(6), 309–317. https://doi.org/10.1007/s00406-007-0722-6

Jennings, C., & Astin, F. (2017). A multidisciplinary approach to prevention. *European Journal of Preventive Cardiology*, *24*(3_suppl), 77–87. https://doi.org/10.1177/2047487317709118

Kallings LV, (Ed.). (2011). *FaR® Individanpassad skriftlig ordination av fysisk aktivitet [Individually Adapted, Written Prescription of Physical Activity—FaR®]* (English summary). Swedish National Institute of Public Health.

Kjaer, J. N., Jakobsen, L., Lasgaard, M., & Munk-Jørgensen, P. (2017). The dietary status of adults with ADHD. *European Psychiatry*, *41*(S1), S245–s245. https://doi.org/10.1016/j.eurpsy.2017.02.022

Kooij, J. J. S., Bijlenga, D., Salerno, L., Jaeschke, R., Bitter, I., Balázs, J., Thome, J., Dom, G., Kasper, S., Nunes Filipe, C., Stes, S., Mohr, P., Leppämäki, S., Casas, M., Bobes, J., Mccarthy, J. M., Richarte, V., Kjems Philipsen, A., Pehlivanidis, A., … Asherson, P. (2019). Updated European consensus statement on diagnosis and treatment of adult ADHD. *European Psychiatry: The Journal of the Association of European Psychiatrists*, *56*, 14–34. https://doi.org/10.1016/j.eurpsy.2018.11.001

Kooij, S. J. J., Bejerot, S., Blackwell, A., Caci, H., Casas-Brugué, M., Carpentier, P. J., Edvinsson, D., Fayyad, J., Foeken, K., Fitzgerald, M., Gaillac, V., Ginsberg, Y., Henry, C., Krause, J., Lensing, M. B., Manor, I., Niederhofer, H., Nunes-Filipe, C., Ohlmeier, M. D., … Asherson, P. (2010). European consensus statement on diagnosis and treatment of adult ADHD: The European network adult ADHD. *BMC Psychiatry*, *10*, 67. https://doi.org/10.1186/1471-244X-10-67

Krueger, M., & Kendall, J. (2001). Descriptions of self: An exploratory study of adolescents with ADHD. *Journal of Child and Adolescent Psychiatric Nursing: Official Publication of the Association of Child and Adolescent Psychiatric Nurses, Inc*, *14*(2), 61–72. https://doi.org/10.1111/j.1744-6171.2001.tb00294.x

Liebrenz, M., Fisher, C. E., Nellen, R., Frei, A., Biechl, A.-C., Hiestand, N., Huber, A., Buadze, A., & Eich, D. (2016). Adult attention-deficit/hyperactivity disorder and nicotine withdrawal: A qualitative study of patient perceptions. *BMC Psychiatry*, *16*(1), 208. https://doi.org/10.1186/s12888-016-0911-9

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative Health Research 26*(13), 1753–1760. https://doi.org/10.1177/1049732315617444

Matheson, L., Asherson, P., Wong, I. C., Hodgkins, P., Setyawan, J., Sasane, R., & Clifford, S. (2013). Adult ADHD patient experiences of impairment, service provision and clinical management in England: A qualitative study. *BMC Health Services Research*, *13*, 184. https://doi.org/10.1186/1472-6963-13-184

Mishler, E. G. (1986). *Research interviewing: Context and narrative*. Harvard University Press.

Naslund, J. A., Aschbrenner, K. A., Scherer, E. A., Pratt, S. I., Wolfe, R. S., & Bartels, S. J. (2016). Lifestyle intervention for people with severe obesity and serious mental illness. *American Journal of Preventive Medicine*, *50*(2), 145–153. https://doi.org/10.1016/j.amepre.2015.07.012

National Board of Health and Welfare. (2018, June). *Nationella riktlinjer för prevention och behandling vid ohälsosamma levnadsvanor, Stöd för styrning och ledning [National guidelines for prevention and treatment of unhealthy living habits]*. https://www.socialstyrelsen.se/globalassets/sharepointdokument/artikelkatalog/nationella-riktlinjer/2018-6-24.pdf

National Board of Health and Welfare. (2019, June). *Konsekvenser för vuxna med diagnosen adhd: Kartläggning och analys [Consequences for adults diagnosed with ADHD: Mapping and analysis]*. https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/ovrigt/2019-6-21.pdf

Nutt, D. J., Kessler, R. C., Alonso, J., Benbow, A., Lecrubier, Y., Lepine, J. P., … Tylee, A. (2007). Consensus statement on the benefit to the community of ESEMeD (European Study of the Epidemiology of Mental Disorders) survey data on depression and anxiety. *The Journal of Clinical Psychiatry*, *68* (Suppl 2), 42–48.

Ortiz, L., & Sjölund, A. (2015). *Motiverande samtal vid autism och adhd*. Natur & Kultur.

Peplau, H. E. (1992). Interpersonal relations: A theoretical framework for application in nursing practice. *Nursing Science Quarterly*, *5*(1), 13–18. https://doi.org/10.1177/089431849200500106

Pehlivanidis, A., Papanikolaou, K., Spyropoulou, A. C., & Papadimitriou, G. N. (2014). Comorbid attention-deficit/hyperactivity disorder in adult psychiatric outpatients with depressive or anxiety disorders. *International Journal of Psychiatry in Clinical Practice*, *18*(4), 265–271. https://doi.org/10.3109/13651501.2014.941878

Roberts, S. H., & Bailey, J. E. (2011). Incentives and barriers to lifestyle interventions for people with severe mental illness: A narrative synthesis of quantitative, qualitative and mixed methods studies. *Journal of Advanced Nursing*, *67*(4), 690–708. https://doi.org/10.1111/j.1365-2648.2010.05546.x

Ronngren, Y., Bjork, A., Audulv, A., Enmarker, I., Kristiansen, L., & Haage, D. (2017). Educational nurse-led lifestyle intervention for persons with mental illness. *International Journal of Mental Health Nursing*, *27*(3), 1022–1031.

Scheel, C. N., Bender, C., Tuschen-Caffier, B., Brodführer, A., Matthies, S., Hermann, C., Geisse, E. K., Svaldi, J., Brakemeier, E.-L., Philipsen, A., & Jacob, G. A. (2014). Do patients with different mental disorders show specific aspects of shame? *Psychiatry Research*, *220*(1-2), 490–495. https://doi.org/10.1016/j.psychres.2014.07.062

Schrank, B., Bird, V., Rudnick, A., & Slade, M. (2012). Determinants, self-management strategies and interventions for hope in people with mental disorders: Systematic search and narrative review. *Social Science & Medicine (1982)*, *74*(4), 554–564. https://doi.org/10.1016/j.socscimed.2011.11.008

Schrevel, S. J., Dedding, C., Van Aken, J. A., & Broerse, J. E. (2016). Do I need to become someone else?' A qualitative exploratory study into the experiences and needs of adults with ADHD. *Health Expectations*, *19*(1), 39–48. https://doi.org/10.1111/hex.12328

Sehlin, H., Ahlström, B. H., Andersson, G., & Wentz, E. (2018). Experiences of an internet-based support and coaching model for adolescents and young adults with ADHD and autism spectrum disorder - A qualitative study. *BMC Psychiatry*, *18*(1), 15. https://doi.org/10.1186/s12888-018-1599-9

Semeijn, E. J., Kooij, J. J., Comijs, H. C., Michielsen, M., Deeg, D. J., & Beekman, A. T. (2013). Attention-deficit/hyperactivity disorder, physical health, and lifestyle in older adults. *Journal of the American Geriatrics Society*, *61*(6), 882–887. https://doi.org/10.1111/jgs.12261

Simon, V., Czobor, P., Balint, S., Meszaros, A., & Bitter, I. (2009). Prevalence and correlates of adult attention-deficit hyperactivity disorder: Meta-analysis. *British Journal Psychiatry*, *194*(3), 204–211. https://doi.org/10.1192/bjp.bp.107.048827

Sisti, L. G., Dajko, M., Campanella, P., Shkurti, E., Ricciardi, W., & De Waure, C. (2018). The effect of multifactorial lifestyle interventions on cardiovascular risk factors: A systematic review and meta-analysis of trials conducted in the general population and high risk groups. *Preventive Medicine*, *109*, 82–97. https://doi.org/10.1016/j.ypmed.2017.12.027

Solberg, B. S., Zayats, T., Posserud, M. B., Halmøy, A., Engeland, E., Haavik, J., & Klungsøyr, K. (2019). Patterns of psychiatric comorbidity and genetic correlations provide new insights into differences between attention-deficit/hyperactivity disorder and autism spectrum disorder. *Biological Psychiatry*, 86(8), 587–598. https://doi.org/10.1016/j.biopsych.2019.04.021

Spencer, T. J., Faraone, S. V., Tarko, L., McDermott, K., & Biederman, J. (2014). Attention-deficit/hyperactivity disorder and adverse health outcomes in adults. *The Journal of Nervous and Mental Disease*, *202*(10), 725–731. https://doi.org/10.1097/NMD.0000000000000191

Stickley, A., Koyanagi, A., Takahashi, H., Ruchkin, V., Inoue, Y., & Kamio, Y. (2017). Attention-deficit/hyperactivity disorder and physical multimorbidity: A population-based study. *European Psychiatry: The Journal of the Association of European Psychiatrists*, *45*(Supplement C), 227–234. https://doi.org/10.1016/j.eurpsy.2017.07.010

Swedish Council on Health Technology. (2013). SBU Systematic Review Summaries. *ADHD—Diagnostics and Treatment, Organization of the Health Care and Patient Involvement*. Swedish Council on Health Technology Assessment (SBU).

Sorensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H, (HLS-EU) Consortium Health Literacy Project European. (2012). Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health*, *12*(80), 80–13. https://doi.org/10.1186/1471-2458-12-80

The Lancet. (2018). GBD 2017: A fragile world. *The Lancet*, *392*(10159), 1683. https://doi.org/10.1016/S0140-6736(18)32858-7

Vidal, R., Bosch, R., Nogueira, M., Gómez-Barros, N., Valero, S., Palomar, G., Corrales, M., Richarte, V., Mena, B., Casas, M., & Ramos-Quiroga, J. A. (2013). Psychoeducation for adults with attention deficit hyperactivity disorder vs. cognitive behavioral group therapy: A randomized controlled pilot study. *The Journal of Nervous and Mental Disease*, *201*(10), 894–900. https://doi.org/10.1097/NMD.0b013e3182a5c2c5

Weissenberger, S., Ptacek, R., Vnukova, M., Raboch, J., Klicperova-Baker, M., Domkarova, L., & Goetz, M. (2018). ADHD and lifestyle habits in Czech adults, a national sample. *Neuropsychiatric Disease and Treatment*, *14*, 293–299. https://doi.org/10.2147/NDT.S148921

World Medical Association. (2018). *WMA declaration of Helsinki—Ethical principles for medical research involving human subjects*. https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethicalprinciples-for-medical-research-involving-human-subjects/

Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). Basic Books.

Zalsman, G., & Shilton, T. (2016). Adult ADHD: A new disease?. *International Journal of Psychiatry in Clinical Practice*, *20*(2), 70–76. https://doi.org/10.3109/13651501.2016.1149197