Dancing for Joy

Using dance as an intervention to improve self-esteem for teenage girls with autism spectrum difficulties

Abstract


Introduction

The need to develop a form of treatment for young girls with internalizing problems (depressive mood, low self-esteem, self-injury, psychosomatic symptoms) is large and the research shows that this group is increasing in number (National Board of Health & Welfare, 2009).

The fact that young women in their teenage years may transpire into a negative spiral of sedentary, isolation, low self-esteem and depressive symptoms is something that is drawing increasing attention. It has long been known that physical activity (PA) contributes to the prevention and healing (Hanna, 1995) of a number of chronic diseases and is associated with the prevention of a premature death (www.who.int). But the physical activities that exist and offered are not attractive for many of these depressive teenage girls (Duberg et al., 2012). Since children and adolescents are not miniature adults, they mature and grow up at their own pace, with interests that are affected by their contemporaries (e.g. an increasing body-awareness). They therefore respond individually both hormonally and metabolically to the type of PA during their childhood (Boisseau & Delamarche, 2000). On a much lighter note, Alricsson et al. (2008) showed in their study that by having activities that address the young
women’s individual’s tastes and preferences increases participation. However, a misguided selection of activities can lead to that the child end the treatment prematurely, which results in yet another life history failure. An internalising problem following, is that the child will bring the failure upon himself which contributes to a negative spiral of self-criticism, perceived helplessness and inactivity.

It is therefore important that we extend and adapt the activities that are offered, so that there are attractive activities (Strong et al., 2005).

Dancing is a well-established and popular physical activity, especially for young women (Wellard et al 2007). Dancing provides an opportunity for the body to connect to the mind through the joy of movement. Through the wisdom that the body is a tool, focus is then shifted from appearance to function, which in turn gives the young women an opportunity to think about their bodies differently. For example, a straight back posture can provide signals to the brain that positively affect mood and self-esteem. Several studies point to that physical activity can increase self-esteem and self-value, providing that it is fun, non-competitive and organized recreational activity (www.who.int; Strong et al., 2005, Mead et al., 2009; Schmalz et al., 2007). In addition, there is evidence that dance reduces stress and increases the self-perceived health by 45% in young women in Sweden (ages 13-18, Duberg et al 2012) and may also have a positive impact on physical self-perception and body image satisfaction (Asci et al 1998).

A study by Anna Duberg et al (2012) confirms how dancing can improve the self-perceived health, and the activity was valued as a positive experience by the participants. The participants had high attendance at the dance classes. This is consistent with a study by Hagberg et al (2008) who found that the enjoyment of the training was highly associated with the level of exercise. We wanted to exploit the fact that teenage women are not terminating prematurely and finding this type of treatment as positive.

There are many teenage girls with internalising problems, such as low self-esteem and depression among autistic children. Autistic children even have higher risk of internalising problems and depression than normally developing girls (Solomon et al, 2012). In addition, low level of physical activity is seen in autistic teenage girls (Mangerud et al., 2014 ;). Mangerud and colleagues found that 56% of the participating autistic children were inactive physically and also preferred to isolate themselves (Shattuck et al., 2011).

Autistic difficulties entail putting words to thoughts and feelings, but also functioning well in a group and following expectations on behaviour and social norms that exist. For this reason, traditional treatment such as therapy can prove to be unhelpful. With this said, it also challenging for these children to participate in recreational activities under the same conditions as other children. It is therefore of extra value for the autistic teenage girls that the intervention provides an opportunity for them to feel comfortable in their body, to express themselves in other ways than with words, and to do so in a context that is customised to their needs. For example, through a stricter organised structure with visual support and fewer participant members.
With this abovementioned information the authors decided to try a new approach: dance classes for teenage girls with autistic difficulties. The aim of this study is to investigate whether physical activity as a treatment, in this case dancing, can have beneficial effects on global health for teenage girls with autistic difficulties. Global health includes rating of self-esteem, psychological and physical health.

Material and methods section:

A casestudy followed 3 participants during 10 weeks of dance intervention. The participants were observed during dance classes, interviewed before and after the intervention and tested with well established psychological instruments plus physiological measures to gain a full picture of their development and the interventions effect.

Design

Three autistic teenage girls from the Childrens Habilitation center in Karlshamn, Sweden participated in the case study. Data was collected through measures of physical activity and established forms concerning selfesteem and psychological wellbeing. Data was colleted before and after the 10 week dance intervention. A semistructured interview was held at the last session.

Participants

Four autistic girls between 13-18 years old. One of the girls stopped coming to dance class after three times and her data will therefore not be included. Inclusion criterion was sex, age, no motorical limits and autistic difficulties. The participants were choosen together with personal from the childrens team (teacher, nurse, physiotherapist, doctor and psychologist). The childrens parents all gave their written consent.

Dance intervention

The dance class was once a week for 45 minutes in 10 weeks, two physiotherapists and one psychologist participated at each class. Every class started with 10 minutes gathering in a ring on the floor with visual support of what each class would contain. The participants was also given an opportunity to talk about their wellbeing and support eachother. Then we started the
physical activity with 15 minutes functional strength warmup (pushups, situps, standing and quickstep backwards with one leg, bending your knees). During the warmup were the participants also introduced to different kinds of modern dances (2 classes per dance type): balett, afro, salsa and jazz dance. The participants got to choose which dance type they preferred for the last two classes.

The dance consisted of a 20 minutes choreography where they learnt 2-3 new steps each class. They were allowed to contribute with their own ideas and creative thinking to enhance their feeling of control and train their mental flexibility and spontaneity.

Each class ended with a small gathering where the participants reflected over the dance class, what was hard or fun. They also got a chance to get help with conflicts and situations that might have risen during the class or earlier during the day. The participants also tried progressive relaxation with visual support at several times.

**Instrument**

Selfesteem and psychological wellbeing: the selfrating scales Becks Youthscales and I think I am was used to collect data concerning selfesteem and psychological wellbeing

Becks Youth scales is defined as self-rating scales for judgment of emotional and social difficulties among children and adolescents from 7-18 years old. Becks youth scales is developed in the United States of America but had been adjusted to swedish norms. The five subscales is as followes:

- **Anxiety.** The scale gives a measure of worry and anxiety within the child. Among other things it contains statements about the school, health and worry about the future.
- **Depression.** This scale provides a measure of sadness and depression within the child. It contains statements about self-image, feelings of hopelessness and psychosomatic symptoms.
- **Anger.** The scale provides a measure of thoughts and feelings related to anger. Statements concern feelings about being treated unfairly and shines a light on how the child directs its anger and on who/what.
- **Antisocial behaviour.** The scale measures behaviours related to conduct disorder and salsify syndrome. The statements concern bullying, serious fouls and tendencies to put the blame on others.
• Self-image. The scale provides a measure of how the child sees itself and contains statements of competens and skills.

I Think I Am measures the childrens self-value. The self-value is expected to have a positive connection with the psychological health. I Think I am self-rating scales consist of a number of statements that is connected to five central areas:

• Physical skills (appearence, body-image and health)
• Skills and talents.
• Psychological properties (psychological stability and strenght, anxiety, aggression)
• Relationships with parents and family.
• Relationships with others (friends and teachers).

Physiotherapeutic instruments:

Lenght, weight, BMI and physical status. Endurence and strength was tested with six minutes walkingtest, pushups, situps and static leg strength. Explosivity and reaction ability was tested by running 40 meters. Balance was tested by standing in one leg.

Interview: All participants performed a semistructyred interview at the last danceclass. They were asked to answere questions about their experience of dancing, if they would recommend it to anyone else in their age and if dancing had changed them physically or mentally and if their body-image had changed.

Ethical considerations:

Written consent was collected from all the paricipants and their parents. They were informed of the study, the procedure, confidentiality and that their personal identity would be decoded from the study. They were also informed that they could terminate their participation at any time throughout the study.

Statistical Analysis
Differences before and after the dance intervention is analysed with average on an individual level and with paired t-tests on a group level. The level for statistical signifcance is set to $p<0.05$.

**Results**

*I Think I am*

Post testing after the 10 week dance intervention showed that all the participants had gained increased selfesteem ratings, both on fullscale measures and on all the subscale measures. The selfratings was significantly higher at posttest than before onset of the intervention on a group level $t(2)=-5.15$, $SEM=7.57$, $p=0.036$, $M_{pre}=26.67$ (SD=43.68), $M_{post}=65.67$ (SD=56.67). The measures showed that participant 1, $t(4)=-2.64$, $SEM=-2.58$, $p=0.05$, $M=-6.8$, SD= -2.58 had increased its ratings so much that it was significantly higher at posttest compared to pretest.

Tabel 1. Describes how the participants selfesteem and psychological wellbeing was rated in average before and after the 10 week dance intervention.

<table>
<thead>
<tr>
<th>Becks Youthscales:</th>
<th>I think I am (fullscale)</th>
<th>Physical attributes</th>
<th>Skills/Talents</th>
<th>Psychological wellbeing</th>
<th>Family relationships</th>
<th>Relationships with others</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M_{pre}=26.7$ (SD=43.7)</td>
<td>$M_{post}=65.7$ (SD=56.8)</td>
<td>$M_{pre}=12.0$ (SD=9.6)</td>
<td>$M_{post}=15.3$ (SD=10.2)</td>
<td>$M_{pre}=6.7$ (SD=11.6)</td>
<td>$M_{post}=10.7$ (SD=20.0)</td>
</tr>
<tr>
<td></td>
<td>$M_{pre}=9.0$ (SD=14.5)</td>
<td>$M_{post}=15.7$ (SD=6.4)</td>
<td>$M_{pre}=0.7$ (SD=13.9)</td>
<td>$M_{post}=10.7$ (SD=20.0)</td>
<td>$M_{pre}=9.0$ (SD=14.5)</td>
<td>$M_{post}=12.0$ (SD=11.8)</td>
</tr>
</tbody>
</table>

Mean
All participants have rated less problems with emotional and social difficulties after the dance intervention, both on a fullscale and on all of the subscales. Participant 1 and 2 have significantly improved their ratings after compared to before taking the dance class: Participant 1, t(21)= 3.57, SEM= 0.70, p= 0.002, Mpre= 4,95, SD= 4,35 Mpost=2,45 SD= 2,24; Participant 3, t(21)= 2.98, SEM= 0.36, p= 0.007, Mpre= 4.68, SD= 4.08, Mpost= 3.59, SD=4,21. For detailed information please see Table 2.

Table 2. Shows the participants reduced report of emotional and social problems after the dance intervention measured with Becks Youth scales. The difference is significant (p< 0.005) for participant 1 and 3.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 pre</td>
<td>4,95</td>
<td>4,35</td>
</tr>
<tr>
<td>1 post</td>
<td>2,45</td>
<td>2,25</td>
</tr>
<tr>
<td>2 pre</td>
<td>0,23</td>
<td>0,53</td>
</tr>
<tr>
<td>2 post</td>
<td>0,05</td>
<td>0,21</td>
</tr>
<tr>
<td>3 pre</td>
<td>4,68</td>
<td>4,08</td>
</tr>
<tr>
<td>3 post</td>
<td>3,59</td>
<td>4,21</td>
</tr>
</tbody>
</table>

Prescence

4 girls was recruited to the study. One terminated due to social difficulties in for being in a group. The dance class was given 10 times during a three month period. One of the girls participated 100% of the classes, one 90% and one was absent involuntarily due to illness at to occasions (80% presence).

Physiological measures
The endurance was improved for all participants, shown through the walking test. 2 out of 3 participants strength was improved (improved number of situps, static leg strength and pushups). All three participants grow in their length 0.5-1 cm during the time for the dance intervention. One of the participants lost weight and two got increased appetite and gained weight. For detailed information please see Table 3.

Table 3. Describes the participants physiological status before and after 10 weeks of dancing.

<table>
<thead>
<tr>
<th>Participant number 1</th>
<th>Lenght</th>
<th>Weight</th>
<th>BMI</th>
<th>Running 40 meters</th>
<th>Walking 6 minutes</th>
<th>Pushups, 30 seconds</th>
<th>Situps, 30 seconds</th>
<th>Static leg strenght</th>
<th>Balance, left leg</th>
<th>Balance, right leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>169 cm</td>
<td>84.6 kg</td>
<td>29.6</td>
<td>12.3 sec</td>
<td>560 m</td>
<td>10</td>
<td>26</td>
<td>19.7 sec</td>
<td>30.0 sec</td>
<td>15.7 sec</td>
</tr>
<tr>
<td>Post</td>
<td>171 cm</td>
<td>91.4 kg</td>
<td>31.3</td>
<td>12.5 sec</td>
<td>600 m</td>
<td>10</td>
<td>20</td>
<td>26.0 sec</td>
<td>30.0 sec</td>
<td>11.0 sec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant number 2</th>
<th>Lenght</th>
<th>Weight</th>
<th>BMI</th>
<th>Running 40 meters</th>
<th>Walking 6 minutes</th>
<th>Pushups, 30 seconds</th>
<th>Situps, 30 seconds</th>
<th>Static leg strenght</th>
<th>Balance, left leg</th>
<th>Balance, right leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>160 cm</td>
<td>79.0 kg</td>
<td>30.0</td>
<td>Not conducted</td>
<td>Not conducted</td>
<td>20</td>
<td>22</td>
<td>15.4 sec</td>
<td>30 sec</td>
<td>30 sec</td>
</tr>
<tr>
<td>Post</td>
<td>161 cm</td>
<td>88.5 kg</td>
<td>34.1</td>
<td>Not conducted</td>
<td>Not conducted</td>
<td>20</td>
<td>28</td>
<td>11.0 sec</td>
<td>30 sec</td>
<td>30 sec</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participant number 3</th>
<th>Lenght</th>
<th>Weight</th>
<th>BMI</th>
<th>Running 40 meters</th>
<th>Walking 6 minutes</th>
<th>Pushups, 30 seconds</th>
<th>Situps, 30 seconds</th>
<th>Static leg strenght</th>
<th>Balance, left leg</th>
<th>Balance, right leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>166 cm</td>
<td>55 kg</td>
<td>20.0</td>
<td>12.85 sec</td>
<td>480 m</td>
<td>4</td>
<td>11</td>
<td>30.7 sec</td>
<td>13 sec</td>
<td>23 sec</td>
</tr>
<tr>
<td>Post</td>
<td>167 cm</td>
<td>53.8 kg</td>
<td>19.3</td>
<td>12.58 sec</td>
<td>560 m</td>
<td>9</td>
<td>11</td>
<td>21.7 sec</td>
<td>15 sec</td>
<td>15 sec</td>
</tr>
</tbody>
</table>

Interview

It was clear in the semistructured interview that all girls felt better and had more energy when they were dancing than before. All participants would recommend dancing as a treatment to other girls their age. One of the girls said following: “I became so happy when I found out about this dance group. There is so little to do for us who are not as everybody else. Everything is adjusted after “normal people” or what you should call it. I feel that I become happier from dancing and hanging out here”. The girls also told us that is was nice to meet other people their age with the same difficulties because it can be hard to find friends when you have autism.
Discussion

Dancing improved the autistic teenage girls in our case study’s self-esteem and body-image, it reduced anxiety, depression and social difficulties and it served as an arena to make new friends and reduce isolation. Furthermore it made the girls more active, gave them strength, balance and endurance. This shows how dance intervention can be used as a platform for bonding exercises, emotional regulation training and discussion on how to reduce antisocial behaviour. Most importantly were the participants happy with the intervention and looked forward to the classes, which made sure their participation rate was high throughout all of the 10 sessions. This replicates the results from Duberg et al, 2012 who conducted a similar study on depressive teenage girls from Sweden, but without autism. Our study shows that dancing can have the same profitable effects for autistic children as well, perhaps more so since the supply of physical activities suitable for them is very limited today. The physical statuses improved in a more modest way for the participants but we believe that more time is needed for changes to show. A measure of blood pressure and pulse would have been interesting as a physiological complement of the psychological testing (hypothesis would be reduced blood pressure and lower resting pulse as a result of reduced stress and increased condition) but this was not possible at the time being.

A cost analysis shows that dance intervention for young women is more profitable than school healthcare and that the effect last after 20 months (Philipsson, et al 2012, Örebro Universitet). This is a further argument to include dancing as a possible intervention for teenage girls at health care systems.

Limitations of study is the limited number of participants, which reduce the strength of our conclusion. But, for the girls this was a positive thing which meant that they had more one-on-one time with a grown-up and the physiotherapist was allowed to meet every girl’s need in every moment. Further research should include a RCT study for enhanced validity.

The children wished balett as their choice of warmup dance for the last two sessions. They told us that it was the soothing music and the repetitive movements that got them focused and made it possible for them to gather themselves after a day at school with many misunderstandings and hard work from their side to understand how to act with their peers. We saw throughout the dance sessions that the children’s ability to focus and stay concentrated was enhanced and further research would be interesting here.
The children asked to be able to show the routine at the end of the last class to their family. This shows how dancing could help them look at themselves with new eyes and break the circle of failure with pride and joy!

References:


Dansen hjälper autistiska unga till bättre självkänsla

*Dans som habilitering, kan det fungera? Ja, det verkar så, blir svaret efter att en ny pilotstudie*

på sjukhuset närmar sig sitt slut.

*Klockan är halv sju och ute är det mörkt. Men inne på Blekingesjukhuset i Karlshamn lyser flitens lampa. I en liten gymnastiksal med aprikosfärgade väggar håller tjejer i dansgruppen Move-it på att*

*Gemensamt för tjejer är att de har autism. Det innebär att vardagen inte alltid är så lätt. Som*

*andra tonårstjejer kan drabbas av depressivt humör, låg självkänsla och självskadebeteende. För*
att skapa en bättre livssituation pågår just nu ett helt nytt och unikt projekt på Blekingesjukhuset i

– Vi använder dans för att tjejer ska bli gladare, öppnare och mindre oroliga. Dans har använts inom vården tidigare, men inte när man jobbar med autistiska ungdomar. Vi presenterade idén i vårars och

avdelningschefen Viveka Söderdahl nappade direkt. Vi började i höstas och resultatet har verkligen

blivit bra, säger Clara Turnstedt, psykolog och projektansvarig.

Det är hon som tillsammans med Linnea Svensson, dansinstructör och sjukgymnast och Hanna Månsson, sjukgymnast, som håller i dansterapin på torsdagskvällarna.

Det börjar bli dags att börja så Linnea och Clara samlar ihop tjejer. Musiken startar och dansen tar

vid. Visst är det lite nervöst att framföra dansstegen framför främlingar, men efter en liten stund det

Dancing for Joy, Clara Turnstedt leg. psykolog & Linnea Svensson leg. fysiotherapeut
Efter att musiken tystnat pustar tjejer ut. En av deltagarna är Sanna Bohlin. Hon släpper ut sitt långa, ljusbruna hår. Att dansgruppen haft stor inverkan på hennes liv råder det inget tvivel om.


Hon är 18 år och tycker att dansgruppen även varit viktig för det sociala. Att träffa nya vänner när man har autism kan vara besvärligt. Men nu har hon flera nya vänner att prata och umgås med.

– Det känns bra att träffa andra som är i samma situation som jag. Jag blir glad av att komma hit och

Skulle du rekommendera andra med autism att prova på?
– Ja, verkligen. När du skriver det här i tidningen så hoppas jag att fler blir inspirerade att börja och

anmäler sig. Det vore kul om fler ville dansa.

Och eftersom dansprojektet får en fortsättning i vår med ytterligare tio tillfällen finns chansen. Efter att

projektet avslutats ska resultaten sammanställas och analyseras. Förhoppningen är att metoden kan

användas i framtiden när man jobbar med autism.

– Jag vågar inte säga något konkret om resultatet än, men om man utgår från det tjejer

säger och

vad vi har sett så ser det verkligen ut att göra skillnad, säger Linnea Svensson.

En annan fördel med dansen är att det blir lättare att samla ihop en hel grupp tjejer, en grupp

som

– Dansen kan ha djupgående effekter och skapar rörelseglädje. I många fall räcker orden inte till

Dancing for Joy, Clara Turnstedt leg. psykolog & Linnea Svensson leg. fysiotherapeut
för de autistiska unga och då kan dansuttrycket hjälpa till att fylla det glappet. Vi har sett att de som

kommer hit öppnar sig och stöttar varandra. Om det uppstår ett problem diskuterar de det och kommer

fram till en lösning, säger Clara Turnstedt.