Feasibility and Preliminary Effects of a Stress Management Intervention ('Prikkelbalansgroep') in Young Adults with Autism Symptoms

Master's thesis

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23-06-2023

Abstract

Background: The existing intervention options for individuals with Autism Spectrum Disorder (ASD) have yielded questionable results. Altrecht has introduced a new intervention, the ‘Prikkelbalansgroep’, which focuses on reducing stress and overstimulation and increasing the use of coping strategies in young adults with autism symptoms. Research shows potential for the used elements within this intervention. **Aim:** This study examines whether the ‘Prikkelbalansgroep’ reduces stress and overstimulation and increases the use of coping strategies in young adults. Additionally, this study explores the interventions’ feasibility according to experts, patients, and therapists. The findings aim to contribute to the development and refinement of the intervention. **Method:** Two female participants, both 22 years old (M = 22.69, SD = .16), exhibiting autism symptoms, completed various questionnaires to examine preliminary effects. Using effect sizes pre- and post measurements have been compared. Additionally, 11 experts, 44 therapists, and 28 patients completed questionnaires to determine feasibility. SPSS was used to analyze and cluster their responses. **Results:** The pilot study demonstrated that the two young adults report increased stress (d = -1.34) and overstimulation (d = .04 – -.80). Moreover, they reported using more coping strategies (d = -0.65). Both experts, patients, and therapists indicated that the intervention is feasible, but provided several suggestions for improvement. **Conclusion:** This study presents the first examination of the feasibility and preliminary effects of the ‘Prikkelbalansgroep’. However, due to the severely small sample size, future research should include a larger sample size to draw conclusions regarding effectiveness. The inclusion of expert opinions, patient and therapist feasibility, and preliminary effectiveness measures provide valuable insights into the intervention’s potential and areas of improvement, making it more adapted to its users. **Keywords: ‘**Prikkelbalansgroep’, autism/Autism Spectrum Disorder (ASD), intervention, patients, therapists, experts, satisfaction, stress, overstimulation, coping strategies

Introduction

Autism Spectrum Disorder (ASD) affects approximately 1% of the population (Lyall et al., 2017). Three cognitive theories are important in explaining autism: (1) *Theory of Mind* (ToM), (2) *Executive Function (EF)*, and (3) *Weak Central Coherence theory* (CC) (Rajendran & Mitchel, 2007). (1) ToM refers to understanding and considering the mental state of others (Premack & Woodruff, 1978). Individuals with autism have significant deficits in ToM, causing difficulties in social interaction (Baron-Cohen et al., 1985; Frith, 2012). (2) EF encompasses planning, cognitive flexibility, working memory, and inhibition (Lezak et al., 2012). Individuals with ASD experience executive dysfunction, resulting in stereotype behaviors and inflexibility in applying social rules (De Vries & Geurts, 2015; Geurts et al., 2009; Mosconi et al., 2009; Mostert-Kerckhoffs et al., 2015). (3) The CC theory proposes that individuals with ASD have a weaker tendency for constructing 'higher-level meaning in context', which is also called 'weak central coherence' (Frith & Happé, 1994). Instead, they tend to process information in a detail-focused way. Research supports this theory (Bertone et al., 2003; Bonnel et al., 2003; Bolte & Poustka, 2006). This weak central coherence causes a state of cognitive and emotional overload, also known as *overstimulation* (Hufnagel et al., 2017). Altogether the three theories explain the core characteristics of ASD, which are deficits in social communication and interaction, rigid and/or repetitive behaviors, and information processing difficulties (APA, 2022).

These core characteristics result in elevated stress levels in individuals with ASD, resulting in a lower quality of life (Hofvander et al., 2009; Mazefsky et al., 2014). According to Selye (1956), *stress* can be defined as "the non-specific response of the body to any demand for change", this definition will be used when referring to stress in this thesis. Coping strategies play a crucial role in managing stress associated with (Groden et al., 2006). An often-used definition by Lazarus and Folkman (1984) of *coping strategies* is "the strategies used to deal with the constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person", which will be used in this thesis. As many young adults with ASD, struggle with stress and overstimulation, determining effective coping strategies is crucial to develop and evaluate interventions that target these factors, to increase their well-being (Bearss et al., 2016; Tomczak et al., 2020).

Interventions for individuals with ASD vary significantly, they include behavioral, psychosocial, educational, medical, and complementary approaches (CDC, 2022; Eslabbagh & Johnson, 2016; Seida et al., 2009). Rather than solely focusing on a specific factor, most

interventions aim to improve the overall quality of life for individuals with ASD (Mason et al., 2018). Stress management, overstimulation reduction, and teaching coping strategies have been key aspects of interventions aimed at enhancing the quality of life (Khanna et al., 2014; Kim, 2019). Research has shown that Cognitive Behavioral Therapy (CBT)-based interventions, can effectively reduce stress and increase coping strategies in young adults with ASD (McGillivray & Evert, 2014; Spain et al., 2017). Furthermore, Pahnke and colleagues (2014) demonstrated that acceptance and commitment therapy can reduce stress symptoms in students with ASD. Additionally, mindfulness-based therapy shows promising effects in teaching coping strategies in adults with ASD (Hebert, 2016). However, there is no global consensus on universally effective interventions, as results differ among researchers (Carter et al., 2011; Weitlauf et al., 2014).

Despite the absence of a global consensus, guidelines propose multiple effective elements for interventions targeting young adults with ASD (Federatie Medisch Specialisten, 2023; GGZStandaarden, 2017). These elements include psycho-education, peer contact, self-management enhancement, mindfulness/attention exercises, psychomotor therapy (PMT), and medication. Psycho-education is most frequently used and effectively increases knowledge about the needs of young adults with ASD (Hidalgo et al., 2022). Peer contact and following e-health modules are used to increase insight into their abilities, challenges, and how to navigate these. Enhancing self-management is shown to effectively promote independence, coping strategies, and overall quality of life. Mindfulness/attention can reduce stress, and PMT effectively reduces overstimulation (Segal et al., 2013). Medical treatment is considered a last resort.

A newly developed intervention called the 'Prikkelbalansgroep' incorporates most of these elements, namely psycho-education, peer contact, enhancing self-management, mindfulness, and PMT. This group intervention was developed at Altrecht, a mental health facility in Utrecht, to improve the quality of life for young adults aged 18-25 with symptoms of ASD. The intervention focuses on effectively managing stress and overstimulation by teaching effective coping strategies. As this intervention is relatively new, conducting a feasibility study is crucial. Feasibility studies are used to assess whether an intervention is suitable for further (efficacy)testing (Bowen et al., 2009). Additionally, it can determine if the intervention is adapted to experts, patients, and therapists. Using their suggestions higher suitability and motivation could be reached.

According to theory, the 'Prikkelbalansgroep' has the potential to be effective in achieving its goals. Bandura's social learning theory (1977) suggests that new behaviors can

be learned by observing the environment. As the intervention is group-based, participants can practice and observe coping mechanisms in their peers and therapists, potentially leading to the acquisition of new coping strategies. With this potential, it is also useful to determine preliminary effectiveness.

Previous research has predominantly focused on parental reports concerning stress and overstimulation, neglecting the experience of young adults with ASD themselves. However, studies have demonstrated that self-reports by individuals with ASD are valid and reliable, and thus can be used to identify valuable insights concerning stress and overstimulation (Ozsivadjian et al., 2014; Shipman et al., 2011). Consequently, this study aims to address this gap in the literature by investigating the experiences of young adults with ASD.

The present study consists of four substudies designed to evaluate the feasibility of the intervention according to experts (1), patients (2), and therapists (3). By incorporating their feedback, suggestions for improvement of the intervention will be made. Additionally, the study will use preliminary data to investigate whether the intervention successfully reduces the amount of stress and overstimulation reported by participants and promotes the use of coping strategies (4).

We expect that the ‘Prikkelbalansgroep’ demonstrates high feasibility, as it is expected to exhibit good content validity according to experts (1), is useful and clear according to patients (2), and is clear and applicable according to therapists (3). Furthermore, we expect that the 'Prikkelbalansgroep’ effectively reduces stress symptoms and overstimulation in participants, while simultaneously enhancing participants’ use of coping strategies.

Methods

Participants & Procedure

All participants in this study were a convenience sample of young adults with ASD symptoms, experts, and therapists. Four different substudies were conducted, three were aimed at investigating the feasibility of the protocol based on (1) experts, (2) patients, and (3) therapists, and one small pilot study (4) was focused on the preliminary effects of the protocol.

Substudy 1 (feasibility experts)

To evaluate the validity and feasibility of the intervention according, a checklist was developed and distributed to experts with substantial experience in the field of autism. Eventually, a total of 11 experts were recruited through researcher networks via e-mail. Using the checklist, experts were asked to assess the current content of the intervention.

Substudy 2 (feasibility patients)

To look at the feasibility of the intervention, particularly in terms of usefulness and a questionnaire was administered to patients aged 18-25 who received care between 2021 and 2023. In total, 44 questionnaires were collected anonymously from patients after each session. Due to the anonymity, no statements regarding the demographic statistics of patients can be made, other than the fact that they all exhibited ASD symptoms and received the same treatment namely the ‘Prikkelbalansgroep’ at Altrecht.

Substudy 3 (feasibility therapists)

The feasibility, especially clarity, and applicability, of the intervention according to the therapist was administered with a questionnaire. In total, 28 questionnaires were filled out by therapists between 2021 and 2023 after every session. All therapists worked at Altrecht and were qualified to give treatment.

Substudy 4 (pilot effect study)

To examine the preliminary effects of the ‘Prikkelbalansgroep', one intervention group, including five participants, was followed from the start of the intervention in February 2023 until the end in June 2023. Due to personal reasons, only two participants filled out both the before and after questionnaires. The sample consisted of female young adults aged 22 years (M = 22.69, SD = .16). One participant completed the before questionnaires but

discontinued the intervention to pursue alternative treatment. Participants filled out a consent form explaining the procedure, confidentiality, and voluntary participation. After receiving the signed informed consent, researchers sent out online questionnaires to study the effects of the intervention. These questionnaires were filled out before the first session and after the last session. All effect questionnaires were coded anonymously as soon as they were returned.

Instruments

Checklist (see Appendix 1 for the used checklist)

The checklist was developed to provide an objective review of the validity and feasibility of the 'Prikkel-Balans-group ASS' protocol. The checklist was established with research based on existing literature and the experiences of both patients and therapists. Experts completed the checklist consisting of six scales: (A) information, (B) goals, (C) methods, (D) reoccurring methods (frequency), (E) therapeutic alliance, and (F) design. Each scale consists of several bullet points, on each bullet point the expert indicated if they think the described subject adds value to the intervention, or what should be changed to take the intervention to the next level.

Session questionnaire (substudy 2 and 3) (see appendix 2 and 3 for the used questionnaires)

Patients and therapists rated the usefulness, clarity, and applicability of a handled subject using a 3-point scale (0 = not clear/useful/applicable, 1 = a little clear/useful/applicable, and 2 = clear/useful/applicable). The answers were analyzed qualitatively. The questionnaire for patients covered the following topics: checking in and out using the color thermometer, attention exercises, experience-based exercises, PMT exercises, psycho-education, and homework assignments. Therapists answered questions on the following topics: session goals, attention exercises, PMT exercises, psycho-education, homework, session duration, and group size.

Effect measures (substudy 4)

Stress. Participants completed the Perceived Stress Scale - 10 (PSS-10; Cohen et al., 1983) to assess their stress levels. By indicating if they perceived life as overloading, unpredictable, and uncontrollable over the last month (e.g.: 'How often have you felt stressed and nervous?'). The questionnaire consists of ten questions, where participants indicate how often they experience stress on a 5-point scale (0 = *never* to 4 = *a lot*). Each item's scores are

added to calculate a total score, where higher scores mean more perceived stress. The PSS-10 is considered reliable and valid in previous research with a Cronbach's alpha of .85 (Bastianon et al., 2020). Due to the small number of participants, no valid Cronbach's alpha for the current study could be determined.

Overstimulation. Participants completed the Adolescent Adult Sensory Profile (Brown & Dunn, 2002) to assess their sensory processing patterns and functional performance. Participants indicated how they generally respond to sensations. Four quadrants can be calculated from 15 questions each (Low Registration, Sensation Seeking, Sensory Sensitivity, and Sensation Avoiding). On each question, the participant indicates how often they show the particular characteristic utilizing a 5-point scale (1 = *never* to 5 = *almost always*). An exemplary item is: "I like to wear colorful clothing". A higher score indicates more difficulties in each quadrant. Previous research shows good internal consistency and retest reliability (r = .66-.82 and r = .67-.82, respectively) (Üçgül et al., 2017). Due to the small number of participants, no valid Cronbach's alpha for the current study could be determined.

Coping. Participants completed the Utrechtse Copinglijst (UCL) (Schreurs et al., 1988) to assess their use of coping strategies. The UCL consists of seven scales that measure different coping strategies: 'Confrontation (*n* = 7), palliative reactive (*n* = 8), avoiding (*n* = 8), seeking social support (*n* = 6), depressive (*n* = 7), expression of emotions (*n* = 3), and optimism (*n* = 5)'. On each question, the participants indicate how often they use this coping strategy through a 4-point scale (0 = *rarely or never* to 3 = *very often*). An exemplary item is: "Trying to relax". Higher scores mean more use of that coping strategy. The UCL is considered valid and reliable (*r* = .55-.86) (Sanderman & Omel, 1992). Due to the small number of participants, no valid Cronbach's alpha for the current study could be determined.

Intervention (The 'Prikkelbalansgroep')

Participants in the 'Prikkelbalansgroep' receive 12 sessions of 75 minutes over 12 weeks. The goal of this intervention is for the participants to learn how to manage overstimulation and stress and how to find balance by learning coping strategies. Each session has a different topic. Week 1: introductions and psychoeducation of ASD. Week 2: stress in autism, recognizing signals of stress. Week 3: learning to recognize the causes of your stress. Week 4: Think and do blockages and structure. Week 5: balance between exertion and relaxation. Week 6: how to deal with stimuli. Week 7 + 8: clear communication

on stress. Week 9: clear communication on boundaries. Week 10: how to ask for help. Week 11: practicing communication. Week 12: preventing relapse.

Analytic Plan

Each of the questionnaires and checklists is entered into SPSS by using keywords. Based on these keywords, the responses have been clustered to identify useful suggestions for improving the intervention. Blank spaces in the checklist indicate no comments on the specific content. To determine feasibility according to experts, percentages on the reoccurrence of the answer categories will be calculated. Mean scores will be calculated to determine feasibility according to therapists and patients.

Due to the small sample size, it will be examined if the ‘Prikkelbalansgroep’ reduces stress and overstimulation and increases the use of coping strategies in young adults aged 22, using effect sizes. This approach aligns with previous research (Hurlbert & Lombardi, 2009). One effect size will be calculated for coping strategies, four for overstimulation, and one for stress using the pooled standard deviation (Rosnow & Rosenthal, 1966). There are no missing data.

Results

Substudy 1 (feasibility experts)

The feasibility according to experts was analyzed by clustering their answers on the checklist using SPSS. Percentages were calculated to determine the reoccurrence of answer categories.

Information

All experts agreed that it was useful to introduce the intervention, explain PMT, and provide psychoeducation about ASD. It was said to enhance motivation and effect. One suggested including under-stimulation. Overall, experts find it useful to provide information.

Goals

All experts agreed with the following goals: knowledge, recognizing body signals, stress thermometer, understanding stress causes, error recognition, visualizing overstimulation and peace of mind, stress management, relaxation, attention exercises, recognizing overstimulation, recovery working groups, tips from experience experts, self-management certificate, and evaluation. These goals were described as positive and enhancing self-management and emotion regulation. The majority of the experts agreed with the following goals: week structure using schedules (90.9%), communicating (boundaries and asking for help) (90.9%), and why autism causes more stress (81.8%). According to one expert, communication goals focus too much on verbal communication. Only half of the experts agreed with the following goal: consequences of too much stress. Experts described this goal as containing excessive information, implying that stress is harmful and it doesn't explain stress thoroughly enough. Overall, experts were satisfied with most goals.

Methods

All experts mentioned the importance of the following methods: signaling stress, communicating with their family and friends, creating a situation to experience and deal with stress signals, mindfulness, attention exercises, psychoeducation, repetition, modeling, self-monitoring, generalization, contact with peers, and homework. Experts described these methods as enhancing normalization. Most experts found the methods of PMT and social skills important (81.8%). However, one expert questioned the usefulness of PMT and its evidence base. Regarding social skills, one expert mentioned that this wrongfully implies that you have to learn them. Overall, experts were satisfied with the used methods.

Re-occurring methods (frequency)

Regarding how often the different aspects of the intervention should reoccur, answers differed. Most experts agreed that the following methods should reoccur in all sessions: psychomotor skills, experience-based, psychoeducation, modeling, exposure, self-monitoring, generalization, and peer contact. On social skills and homework, the answers differed. The amount of recurrence for social skills ranged from twice to all sessions. Homework ranged from not being included, to reoccurring in all sessions. Several experts emphasized the importance of alternation between theory and practice. Another expert said the frequency should differ for each individual. Overall, there was general agreement on the frequency of most methods.

Therapeutic alliance

All experts agreed that compassion, reinforcement, naming qualities, and coaching are important factors in the therapeutic alliance. One expert commented that it is important that the program is adapted to the patients. Overall experts are satisfied with the aspects of therapeutic alliance that recur in this intervention.

Design

All experts agreed that 12 sessions are sufficient, and they were satisfied with the duration of the sessions. An expert suggested adding a follow-up session. Overall, the experts were satisfied with the design of the intervention.

Suggestions

The experts suggested adding theoretical aspects to substantiate and expand the intervention. Four experts mentioned the importance of customized treatment, they described that ASD is very different for each individual, therefore treatment should also have multiple personalized aspects. Additionally, one expert mentioned the polyvagal theory and one expert mentioned neurodiversity. The experts further suggested adding the following aspects: effectiveness measures, acceptance, the distinction between high- and low-functioning ASD, the role of the group, and visualization to substantiate the verbal parts. Additionally, experts suggest using trauma-sensitive exercises, the book of Annelies Spek, relaxation by exertion, the Stress Autism App (SAM), examples of relaxation moments, and tools for regulating stimuli.

Experts described the intervention as a whole as a complete program, a nice setup, very meaningful, and too broad. Strong points of this intervention that were mentioned were: recognizing how you work, finding more balance, the combination between bottom-up and top-down, more powerful self-management, experiential, and increasing energy and fun.

Substudy 2 (feasibility patients)

To determine the feasibility according to patients, their answers to the questionnaires were clustered and analyzed using mean scores calculated with SPSS. Patients indicated that on average attention exercises were a little useful to useful (M = 1.69, SD = .57, n = 39). Reflecting on the attention exercise was also considered a little useful to useful (M = 1.76, SD = .43, n = 38). Patients described several positive benefits such as the exercises increased their relaxation, calmness, consciousness, and focus. Some patients had negative comments, mainly that the exercises were too difficult, or too easy.

Patients found the PMT exercises a little useful to useful (M = 1.68, SD = .51, n = 44), the same goes for reflecting on these exercises (M = 1.79, SD = .44, n = 32). Patients described positive aspects such as that the exercises were enhancing their consciousness, insight, and communication skills. Other patients had negative comments such as that the goal of an exercise was unclear, an exercise had a lot of stimuli (which bothered some, but not everyone), and that the question was unclear.

Patients indicated that the homework exercises were a little clear to clear (M = 1.71, SD = .52, n = 38). It was suggested that if illustrations are added to the homework, they should be useful, otherwise, they distract from the homework and they should be left out. Patients indicated that they found the use of stress- and color thermometers on average a little useful to useful (M = 1.67, SD = .57, n = 27). Patients described that in the beginning a clear explanation was missing, and sometimes there was not enough time at the end of the session to extensively fill out the thermometers.

The psychoeducation was on average a little clear to clear according to patients (M = 1.51, SD = .62, n = 42). In sessions one, two, three, seven, and eight, patients described that psychoeducation was not clearly explained. In the other sessions, patients described psychoeducation as clear and helpful.

Substudy 3 (feasibility therapists)

To determine feasibility according to therapists, the answers they gave on the questionnaires were clustered and analyzed using mean scores calculated with SPSS.

Therapists indicated that on average the goal of the session was somewhat clear to clear (*M* = 1.75, *SD* = .52, *n* = 28). On several occasions, therapists described that the goal could be more concrete. Additionally, most therapists indicated that they could adequately apply the goal of the session (*M* = 1.90, *SD* = .31, *n* = 29).

On the question of whether the attention exercises were clear, therapists also answered somewhat clear to clear (*M* = 1.86, *SD* = .35, *n* = 29). In session four, two therapists described that the attention exercises were not clear for the patients. Also, in all sessions except for one, therapists could adequately apply the attention exercises (*M* = 1.93, *SD* = .26, *n* = 28). In session eight, it was unclear if the patients understood the attention exercise.

The PMT exercises were clear (*M* = 2.00, *SD* = .00, *n* = 28). The exercises were described as supporting, giving insight, and having a clear theme. Additionally, the PMT exercises could be adequately applied to the patients (*M* = 2.00, *SD* = .00, *n* = 28). It was described to fit well in the sessions.

The theory which needed to be explained was on average indicated as somewhat clear to clear (*M* = 1.48, *SD* = .51, *n* = 27). One therapist suggested that more explanation in the manual would be useful. Additionally, several therapists indicated that they could not always explain the theory to the patients well enough, and sometimes confusion among patients arose. Most therapists could adequately explain the theory with brain blocks (*M* = 1.80, *SD* = .42, *n* = 10). One therapist indicated that more explanation in the manual would be helpful.

All therapists indicated that they could sufficiently apply the homework assignments (*M* = 2.00, *SD* = .00, *n* = 24). Additionally, most therapists found the homework assignments clear (*M* = 1.75, *SD* = .52, *n* = 28). They were described as clear, but sometimes the order of the homework was incorrect, the homework was assigned to session three in the manual, instead of the right session, which was session four.

Therapists indicated that the time of the sessions was somewhat sufficient to sufficient (*M* = 1.82, *SD* = .38, *n* = 29). The ones who indicated that time was insufficient mentioned they did not have enough time to perform all the exercises properly. In all questionnaires, except for one, therapists indicated that group size was sufficient (*M* = 1.93, *SD* = .38, *n* = 27). They described the small groups (5 or 6 patients) as pleasant for interaction and helping in the exchange of information within the group. The one therapist that indicated the group size as insufficient, mentioned that there were only two participants in that session, which was too little. Overall, the methods were clear, and therapists could adequately apply the methods. Additionally, most therapists found the time of the sessions and the group size sufficient.

Substudy 4 (pilot effect study)

The effect of the ‘Prikkelbalansgroep’ on stress, overstimulation, and coping strategies

To identify the effect of the ‘Prikkelbalansgroep’ paired t-tests were done on stress (PSS-10), overstimulation (AASP), and coping strategies (UCL) to compare scores before and after the intervention. On stress, the effect was large, suggesting that the perceived level of stress of these two respondents increased considerably after the intervention, as compared to before the treatment. Concerning overstimulation, respondents reported on average higher scores on Low Registration, Sensation Seeking, and Sensory Sensitivity after the treatment compared to before the treatment. These effects were medium to large, suggesting that the perceived levels of overstimulation of these two respondents, in these three areas, has considerably increased after the intervention. On Sensation Avoiding they report a somewhat lower score after the treatment compared to before the treatment, with a close to zero effect size, suggesting that the amount that these two respondents avoid activities with many sensations has remained the same after the intervention. Concerning coping strategies, the effect was medium, suggesting that the perceived use of coping strategies in both respondents increased after the intervention.

Table 1

Descriptive Statistics and Effect Sizes for Stress, Overstimulation, and Coping Strategies

	Before treatment		After treatment		Comparison
Variable	*M*	*SD*	*M*	*SD*	*d*
1. Stress	23.00	2.83	26.00	1.41	-1.34
2. Low Registration	29.00	5.66	33.00	9.90	-.50
3. Sensation Seeking	43.00	5.66	47.00	4.24	-.80
4. Sensory Sensitivity	34.50	.71	36.00	2.83	-.73
5. Sensation Avoiding	35.00	11.32	34.50	12.02	.04
6. Coping strategies	63.50	6.36	71.50	16.26	-.65

Note. $n = 2$

Discussion

This study examined whether the ‘Prikkelbalansgroep’ is feasible according to experts, patients, and therapists in terms of good content validity, usefulness, clarity, and applicability. Additionally, a pilot study was conducted to investigate whether the ‘Prikkelbalansgroep’ reduces stress and overstimulation and increases the use of coping strategies in young adults with autism symptoms. Given that the intervention is newly developed, it is critical to evaluate both its feasibility and preliminary effects to customize the treatment to its users and ensure higher engagement.

The results of the study indicate overall satisfaction among experts regarding the content validity and usefulness of the intervention. Minimal comments were received on (A) information, (D) reoccurring methods (frequency), (E) therapeutic alliance, and (F) design. However, concerning (B) goals, experts suggested providing a broader description of stress, including its positive aspects. Research supports that perceiving stress as functional leads to increased performance, motivation, and engagement (Jamieson et al., 2018). Therefore, to provide a comprehensive definition of stress, these positive aspects need to be included. On (C) methods, an expert questioned the usefulness and evidence base of PMT. While PMT is included in the guidelines, concrete evidence is lacking (Federatie Medisch Specialisten, 2023). Nevertheless, a recent review by Frazao et al. (2023) shows promising results for PMT, they suggest that more efficacy research is needed to draw firm conclusions. Furthermore, a common suggestion among experts was the consideration between individualized and one-size fits all approaches. Given the heterogeneity of symptoms along the autism spectrum, personalized interventions that are adapted to the specific needs of individuals are necessary (Bishop-Fitzpatrick & Kind, 2017; Sherer & Schreibman, 2005). Individualized treatment has been shown to result in improved outcomes for individuals with autism, for example, improved social skills, and fewer maladaptive social behaviors (Sowa & Meulenbroek, 2012). Therefore, future research should explore how the ‘Prikkelbalansgroep’ could be individualized more to tailor to the needs of all individuals. For instance by giving patients more input on the content of the sessions, to adapt them to their personal needs.

Additionally, the findings of this study demonstrate that patients expressed overall satisfaction with the intervention, perceiving all elements as a little clear/useful to clear/useful. Patients reported that attention exercises enhanced their relaxation and calmness. This is in line with existing research, which shows that mindfulness is an effective mechanism in interventions (Ridderinkhof et al., 2017). Considering PMT exercises and reflecting on these patients indicated it enhances consciousness, insight, and communication

skills. That PMT exercises are indicated as feasible, is consistent with previous research (Kay et al., 2016). On the usefulness of stress- and color thermometers patients described that the explanation in the beginning was unclear. It is important to investigate how this explanation can be improved, for instance by adding more visual aspects to these explanations. Concerning the clearness of homework, adding useful illustrations was suggested by patients. Adding visual aspects to homework is recommended by prior research, it is said to enhance comprehension (Basitere & Ivala, 2017). Patients were the least satisfied with the provided psycho-education, which they sometimes described as unclear. Research shows that adequate information is crucial to promote an understanding of their own needs (Adams et al., 2020). Similarly, therapists also indicated that the instructions on psycho-education were not always clear to them, leading to uncertainties. This may explain why patients were least satisfied with the given psycho-education. As psycho-education is an important effective element, the creators of the intervention should investigate ways to enhance the clarity of instructions for therapists to prevent confusion in patients (GGZStandaarden, 2017). For instance by using the suggestions of experts, such as substantiating the verbal information with visualizations, using the Stress Autism App, or using the book of Annelies Spek.

Overall therapists expressed satisfaction with the intervention. Minimal comments were received on applying the goal, clearness and application of the attention exercises, clearness and application of PMT exercises, clearness and application of homework assignments, group size, and duration of the sessions. Therapists were most satisfied with the PMT exercises, which were described as supporting and giving insight. Nonetheless, the majority of the comments focused on confusion regarding the intervention manual. Therefore, it would be prudent to review the manual together with the therapists to ensure the manual is adapted to them.

The preliminary effect study indicated that as expected, young adults reported higher usage of coping strategies after the treatment. This is in line with previous research and the hypothesis (Spain et al., 2017). This study adds to the body of literature, as in the study of Spain et al., 2017 only male participants were included, in this study, there were only female participants. Future research should study the increase in coping strategies in a mixed-gender group.

The results further indicate that young adults report more stress and overstimulation after the treatment. This contradicts expectations, as previous research showed that CBT-based interventions reduce stress (McGillivray & Evert, 2014), and that interventions including mindfulness can be effective in reducing overstimulation (Hebert, 2016). A

possible explanation is that individuals with ASD may underreport on the pre-treatment measures due to a lack of self-awareness (Oswald et al., 2018). As the stress management intervention focuses extensively on subjects such as what is stress, what is overstimulation, and how can I recognize these in myself, the increase could possibly be explained by an increase in awareness of their symptoms.

Limitations and strengths

The limitations of the study should also be acknowledged and discussed. Since this was a pilot study, a severely small non-inclusive sample size was used, of two females, of the same age. This rendered the research group non-generalizable to a larger population. Future research should include a larger, more inclusive sample. Additionally, there was no control group, therefore the improvements may be due to other unknown factors. To determine the effect, future research should use the design of a randomized controlled trial (RCT). Finally, this study only included the young adults as informants, this could lead to socially desirable answers (de los Reyes et al., 2013). Future research could use multiple informants to give more reliable outcomes.

Not only limitations but also strengths should be discussed. This pilot study is pioneering in its investigation of using the 'Prikkelbalansgroep' as an intervention in young adults with autism symptoms. It includes the experience of these young adults themselves and therefore adds to this gap in the literature. Both experts, patients, and therapists indicate that this intervention is feasible. Experts acknowledge the good content validity and usefulness, patients report that it is useful and clear and therapists have a clear understanding of the protocol and can apply it to their patients. The current study has revealed indications regarding the potential effects of the 'Prikkelbalansgroep' in increasing the use of coping strategies. By exploring the feasibility and preliminary effects of the 'Prikkelbalansgroep' intervention, this study contributes to the development and refinement of the intervention making it more adapted to what experts, patients, and therapists want.

Literature

Adams, D., & Young, K. (2020). A systematic review of the perceived barriers and facilitators to accessing psychological treatment for mental health problems in individuals on the autism spectrum. *Review Journal of Autism and Developmental Disorders*, *8*(1), 1-18. https://doi.org/10.1007/s40489-020-00226-7

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). https://doi.org/10.1176/appi.books.9780890425787

Bandura, A. (1977). *Social learning theory*. Prentice-Hall.

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind"?. *Cognition*, *21*(1), 37-46. https://doi.org/10.1016/0010-0277(85)90022-8

Basitere, M., & Ivala, E. N. (2017). An evaluation of the effectiveness of the use of multimedia and Wiley Plus Web-based homework system in enhancing learning in the chemical engineering extended curriculum program physics course. *Electronic Journal of E-learning*, *15*(2), 156-173.

Bastianon, C. D., Klein, E. M., Tibubos, A. N., Brähler, E., Beutel, M. E., & Petrowski, K. (2020). Perceived Stress Scale (PSS-10) psychometric properties in migrants and native Germans. *BMC Psychiatry*, *20*(1), 1-9. https://doi.org/10.1186/s12888-020-02851-2

Bearss, K., Taylor, C. A., Aman, M. G., Whittemore, R., Lecavalier, L., Miller, J., Pritchett, J., Green, B., & Scahill, L. (2016). Using qualitative methods to guide scale development for anxiety in youth with autism spectrum disorder. *Autism*, *20*(6), 663-672. https://doi.org/10.1177/1362361315601012

Bertone, A., Mottron, L., Jelenic, P., & Faubert, J. (2003). Motion perception in autism: A "complex" issue. *Journal of Cognitive Neuroscience*, *15*(2), 218-225. https://doi.org/10.1162/089892903321208150

Bishop-Fitzpatrick, L., & Kind, A. J. (2017). A scoping review of health disparities in autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *47*(1), 3380-3391. https://doi.org/10.1007/s10803-017-3251-9

Bölte, S., & Poustka, F. (2006). The broader cognitive phenotype of autism in parents: How specific is the tendency for local processing and executive dysfunction?. *Journal of Child Psychology and Psychiatry*, *47*(6), 639-645. https://doi.org/10.1111/j.1469-7610.2006.01603.x

Bonnel, A., Mottron, L., Peretz, I., Trudel, M., Gallun, E., & Bonnel, A. M. (2003). Enhanced pitch sensitivity in individuals with autism: A signal detection analysis. *Journal of*

Cognitive Neuroscience, *15*(2), 226-235. https://doi.org/10.1162/089892903321208169

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., Bakken, S., Kaplan, C. P., Squiers, L., Fabrizio, C., & Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine*, *36*(5), 452-457. https://doi.org/10.1016/j.amepre.2009.02.002

Carter, A. S., Messinger, D. S., Stone, W. L., Celimli, S., Nahmias, A. S., & Yoder, P. (2011). A randomized controlled trial of Hanen's 'More Than Words' in toddlers with early autism symptoms. *Journal of Child Psychology and Psychiatry*, *52*(7), 741-752. https://doi.org/10.1111/j.1469-7610.2011.02395.x

Centers for Disease Control and Prevention. (2022). Treatment and Intervention Services. Retrieved from https://www.cdc.gov/ncbddd/autism/treatment.html

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385-396. https://doi.org/10.2307/2136404

De los Reyes, A., Thomas, S. A., Goodman, K. L., & Kundey, S. M. A. (2013). Priniciples underlying the use of multiple informants' reports. *Annual Review of Clinical Psychology*, *9*(1), 123-149. https://doi.org/10.1146/annurev-clinpsy-050212-185617

De Vries, M., & Geurts, H. (2015). Influence of autism traits and executive functioning on quality of life in children with an autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *45(1)*, 2734-2743. https://doi.org/10.1007/s10803-015-2438-1

Elsabbagh, M., & Johnson, M. H. (2016). Autism and the social brain: The first-year puzzle. *Biological Psychiatry*, *80*(2), 94-99. https://doi.org/10.1016/j.biopsych.2016.02.019

Federatie Medisch Specialisten. (2023). Autismespectrumstoornissen bij volwassenen. https://richtlijnendatabase.nl/richtlijn/autismespectrumstoornissen_bij_volwassenen/autismespectrumstoornissen-bij-volwassenen_-start.html

Frazão, A., Santos, S., & Lebre, P. (2021). Psychomotor intervention practices for children with autism spectrum disorder: A scoping review. *Review Journal of Autism and Developmental Disorders*, *10*(1), 1-18. https://doi.org/10.1007/s40489-021-00295-2

Frith, U. (2012). Why we need cognitive explanations of autism. *The Quarterly Journal of Experimental Psychology*, *65*(11), 2073-2092. https://doi.org/10.1080/17470218.2012.697178

Frith, U., & Happé, F. (1994). Autism: Beyond 'theory of mind'. *Cognition*, *50*(2), 115–132. https://doi.org/10.1016/0010-0277(94)90024-8

Geurts, H. M., Corbett, B., & Solomon, M. (2009). The paradox of cognitive flexibility in autism. *Trends in Cognitive Sciences*, *13*(2), 74-82. https://doi.org/10.1016/j.tics.2008.11.006

GGZ Standaarden. (2017). Zorgstandaard autisme. https://www.ggzstandaarden.nl/zorgstandaarden/autisme/behandeling-en-begeleiding

Groden, J., Baron, M. G., & Groden, G. (2006). Assessment and coping strategies. In M. G. Baron, J. Groden (Eds.) & G. Groden & L. Lipsitt (Ed.), *Stress and coping in autism* (pp. 15–41). Oxford University Press.

Hazen, E. P., Stornelli, J. L., O'Rourke, J. A., Koesterer, K., & McDougle, C. J. (2014). Sensory symptoms in autism spectrum disorders. *Harvard Review of Psychiatry, 22*(2), 112-124. https://doi.org/10.1097/01.HRP.0000445143.08773.58

Hebert, K. R. (2016). The association between sensory processing styles and mindfulness. *British Journal of Occupational Therapy, 79*(9), 557-564. https://doi.org/10.1177/0308022616656872

Hidalgo, N., Sjöwall, D., Agius, H., Byström, C., Brar, A., Borg, J., & Hirvikoski, T. (2022). Psychoeducational group intervention for intellectually able adults with autism and their close relations (Prisma)–an open feasibility study. *BMC Psychiatry*, *22*(1), 556. https://doi.org/10.1186/s12888-022-04134-4

Hofvander, B., Delorme, R., Chaste, P., Nydén, A., Wentz, E., Ståhlberg, O., Herbrecht, E., Stopin, A., Anckarsäter, H., Gillberg, C., Råstam, M., & Leboyer, M. (2009). Psychiatric and psychosocial problems in adults with normal-intelligence autism spectrum disorders. *BMC Psychiatry*, *9*(1), 1-9. https://doi.org/10.1186/1471-244X-9-35

Hufnagel, C., Chambres, P., Bertrand, P. R., & Dutheil, F. (2017). The need for objective measures of stress in autism. *Frontiers in Psychology, 8*(1), 1-4. https://doi.org/10.3389/fpsyg.2017.00064

Hurlbert, S. H., & Lombardi, C. M. (2009, October). Final collapse of the Neyman-Pearson decision theoretic framework and rise of the neoFisherian. In *Annales Zoologici Fennici* (Vol. 46, No. 5, pp. 311-349). Finnish Zoological and Botanical Publishing Board.

Jamieson, J. P., Crum, A. J., Goyer, J. P., Marotta, M. E., & Akinola, M. (2018). Optimizing stress responses with reappraisal and mindset interventions: An integrated

model. *Anxiety, Stress, & Coping*, *31*(3), 245-261. https://doi.org/10.1080/10615806.2018.1442615

Kay, J. J., Clegg, J. A., Emck, C., & Standen, P. J. (2016). The feasibility of psychomotor therapy in acute mental health services for adults with intellectual disability. *Journal of Intellectual and Developmental Disability*, *41*(1), 54-60. https://doi.org/10.3109/13668250.2015.1094037

Khanna, R., Jariwala-Parikh, K., West-Strum, D., & Mahabaleshwarkar, R. (2014). Health-related quality of life and its determinants among adults with autism. *Research in Autism Spectrum Disorders*, *8*(3), 157-167. https://doi.org/10.1016/j.rasd.2013.11.003

Kim, S. Y. (2019). The experiences of adults with autism spectrum disorder: Self-determination and quality of life. *Research in Autism Spectrum Disorders*, *60*(1), 1-15. https://doi.org/10.1016/j.rasd.2018.12.002

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping.* Springer Publishing Company.

Lezak, M. D., Howieson, D. B., Bigler, E. D., & Tranel, D. (2012). *Neuropsychological assessment.* Oxford University Press.

Lyall, K., Croen, L., Daniels, J., Fallin, M. D., Ladd-Acosta, C., Lee, B. K., Park, B. Y., Snyder, N. W., Schendel, D., Volk, H., Windham, G. C., & Newschaffer, C. (2017). The changing epidemiology of autism spectrum disorders. *Annual Review of Public Health*, *38*(1), 81-102. https://doi.org/10.1146/annurev-publhealth-031816-044318

Mason, D., McConachie, H., Garland, D., Petrou, A., Rodgers, J., & Parr, J. R. (2018). Predictors of quality of life for autistic adults. *Autism Research, 11*(8), 1138-1147. https://doi.org/10.1002/aur.1965

Mazefsky, C. A., Borue, X., Day, T. N., & Minshew, N. J. (2014). Emotion regulation patterns in adolescents with high-functioning autism spectrum disorder: Comparison to typically developing adolescents and association with psychiatric symptoms. *Autism Research, 7*(3), 344-354. https://doi.org/10.1002/aur.1366

McGillivray, J. A., & Evert, H. T. (2014). Group cognitive behavioral therapy program shows potential in reducing symptoms of depression and stress among young people with ASD. *Journal of Autism and Developmental Disorders*, *44*(8), 2041-2051. https://doi.org/10.1007/s10803-014-2087-9

Mosconi, M. W., Kay, M., D'cruz, A. M., Seidenfeld, A., Guter, S., Stanford, L. D., & Sweeney, J. (2009). Impaired inhibitory control is associated with higher-order

repetitive behaviors in autism spectrum disorders. *Psychological Medicine*, *39*(9), 1559-1566. https://doi.org/10.1017/S0033291709004984

Mostert-Kerckhoffs, M. A., Staal, W. G., Houben, R. H., & de Jonge, M. V. (2015). Stop and change: Inhibition and flexibility skills are related to repetitive behavior in children and young adults with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *45*(1), 3148-3158. https://doi.org/10.1007/s10803-015-2473-y

Oswald, T. M., Winder-Patel, B., Ruder, S., Xing, G., Stahmer, A., & Solomon, M. (2018). A pilot randomized controlled trial of the ACCESS program: A group intervention to improve social, adaptive functioning, stress coping, and self-determination outcomes in young adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *48*(1), 1742-1760. https://doi.org/10.1007/s10803-017-3421-9

Ozsivadjian, A., Hibberd, C., & Hollocks, M. J. (2014). Brief report: The use of self-report measures in young people with autism spectrum disorder to access symptoms of anxiety, depression, and negative thoughts. *Journal of Autism and Developmental Disorders*, *44*(4), 969-974. https://doi.org/10.1007/s10803-013-1937-1

Pahnke, J., Lundgren, T., Hursti, T., & Hirvikoski, T. (2014). Outcomes of an acceptance and commitment therapy-based skills training group for students with high-functioning autism spectrum disorder: A quasi-experimental pilot study. *Autism*, *18*(8), 953-964. https://doi.org/10.1177/1362361313501091

Ridderinkhof, A., de Bruin, E. I., Blom, R., & Bögels, S. M. (2018). Mindfulness-based program for children with autism spectrum disorder and their parents: Direct and long-term improvements. *Mindfulness*, *9*(1), 773-791. https://doi.org/10.1007/s12671-017-0815-x

Rosnow, R. L., & Rosenthal, R. (1996). Computing contrasts, effect sizes, and counternulls on other people's published data: General procedures for research consumers. *Psychological Methods*, *1*(4), 331. https://doi.org/10.1037/1082-989X.1.4.331

Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind?. *Behavioral and Brain Sciences*, *1*(4), 515-526. https://doi.org/10.1017/S0140525X00076512

Sanderman, R., & Ormel, J. (1992). De Utrechtse Coping Lijst (UCL): validiteit en betrouwbaarheid. *Gedrag & Gezondheid: Tijdschrift voor Psychologie en Gezondheid*, *20*(1), 32–37.

Schreurs, P. J. G., Van de Willige, G., Tellegen, B., & Brosschot, J. F. (1988). *Utrechtse coping lijst: omgaan met problemen*. Swets Test Services (STS).

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2013). *Mindfulness en cognitieve therapie bij depressie*. Nieuwezijds.

Seida, J. K., Ospina, M. B., Karkhaneh, M., Hartling, L., Smith, V., & Clark, B. (2009). Systematic reviews of psychosocial interventions for autism: An umbrella review. *Developmental Medicine & Child Neurology*, *51*(2), 95-104. https://doi.org/10.1111/j.1469-8749.2008.03211.x

Selye, H. (1956). *The stress of life*. McGraw-Hill.

Sherer, M. R., & Schreibman, L. (2005). Individual behavioral profiles and predictors of treatment effectiveness for children with autism. *Journal of Consulting and Clinical Psychology*, *73*(3), 525-538. https://doi.org/10.1037/0022-006X.73.3.525

Shipman, D. L., Sheldrick, R. C., & Perrin, E. C. (2011). Quality of life in adolescents with autism spectrum disorders: Reliability and validity of self-reports. *Journal of Developmental & Behavioral Pediatrics*, *32*(2), 85-89. https://10.1097/DBP.0b013e318203e558

Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology*, *58*(1), 119-144. https://doi.org/10.1146/annurev.psych.58.110405.085705

Sowa, M., & Meulenbroek, R. (2012). Effects of physical exercise on autism spectrum disorders: A meta-analysis. *Research in Autism Spectrum Disorders*, *6*(1), 46-57. https://doi.org/10.1016/j.rasd.2011.09.001

Spain, D., Blainey, S. H., & Vaillancourt, K. (2017). Group cognitive behaviour therapy (CBT) for social interaction anxiety in adults with autism spectrum disorders (ASD). *Research in Autism Spectrum Disorders*, *41*, 20-30. https://doi.org/10.1016/j.rasd.2017.07.005

Tomczak, M. T., Wójcikowski, M., Pankiewicz, B., Łubiński, J., Majchrowicz, J., Majchrowicz, D., Walasiewicz, A., Kilinski, T., & Szczerska, M. (2020). Stress monitoring system for individuals with autism spectrum disorders. *IEEE Access*, *8*(1), 228236-228244. https://doi.org/10.1109/ACCESS.2020.3045633

Üçgül, M. Ş., Karahan, S., & Öksüz, Ç. (2017). Reliability and validity study of Turkish version of Adolescent/Adult Sensory Profile. *British Journal of Occupational Therapy*, *80*(8), 510-516. https://doi.org/ 10.1177/0308022617706680

Weitlauf, A. S., McPheeters, M. L., Peters, B., Sathe, N., Travis, R., Aiello, R., Williamson, E., Veenstra-VanderWeele, J., Krishnaswami, S., Jerome, R., & Warren, Z. (2014). *Therapies for children with autism spectrum disorder: Behavioral interventions update.* Agency for Healthcare Research and Quality.

Appendix 1: Feasibility checklist experts

Checklist voor het Protocol Prikkel-Balans autisme voor jongeren met autisme en comorbide problematiek

Lieke Boeve en Denise Bodden

Deze checklist is ontwikkeld om een objectieve beoordeling te geven betreffende de validiteit en feasibility van het Protocol 'Prikkel-Balans-groep ASS'. De checklist is tot stand gekomen door literatuuronderzoek, ervaringen van jongeren en behandelaren.

A. Schaal: Informatie

		EXPERT Commentaar *Wat vind je van deze informatie?*
Prikkelbalansgroep	• Het introduceren van de interventie	
PMT methode	• Uitleg over PMT	
ASS gerelateerd (kennis van autisme)	• Koppeling maken tussen vaardigheden die je leert en je "eigen" autisme • Welke aspecten van jouw autisme zorgen voor stress • Kwaliteiten herkennen bij jezelf	

B. Schaal: De doelen

		EXPERT Commentaar *Wat vind je van deze doelen?*

Kennis over stress	• Uitleg wat stress is	
Stress signalen herkennen	• Herkennen van signalen in je lichaam die duiden op stress (gedachten, gevoelens en lichamelijke sensaties) • Ervaren van signalen in je lichaam die duiden op stress (gedachten, gevoelens en lichamelijke sensaties) • Gebruik maken van een persoonlijke stress thermometer	
Oorzaken stress herkennen	• Uitleg over oorzaken van stress • Leren herkennen van oorzaken van stress bij jezelf	
Gevolgen van stress	• Uitleg gevolgen van teveel stress • Uitleg waarom meer stress door autisme • Denk-doe blokkade/kortsluiting/error	
Herkennen en inzetten van stress verminderende activiteiten	• Uitwisseling over wat werkt voor wie om eigen stress te verminderen • Uitleg stress verminderende activiteiten • Ontdekken en versterken van stress verminderende activiteiten	
Structuur brengen in je leven	• Uitleg geven over belang van structuur in je week	

	• Weekschema maken met brugpersoon • Evalueren van het weekschema met brugpersoon • Evalueren van weekschema in de groep	
Zorgen voor juiste balans	• Weekschema bekijken en onderzoeken of er voldoende balans is tussen inspanning en ontspanning • Uitleg belang van ontspanning • Inzet van aandachtsoefeningen	
Beter omgaan met prikkels	• Visueel maken van overprikkeling • Visueel maken van rust in je hoofd • Uitleg geven over gebruik van persoonlijke stress thermometer • Herkennen van signalen van overprikkeling bij jezelf mbv de persoonlijke stress thermometer thuis • Herkennen van signalen van overprikkeling bij jezelf mbv de persoonlijke stress thermometer in de groep • Weten wat je kan doen bij overprikkeling mbv de	

	persoonlijke stress thermometer • Oefenen met wat je kan doen bij overprikkeling(in de groep en thuis)	
Helder communiceren over stress	• Uitleg over belang van communiceren naar anderen over oorzaken van jouw stress • Concreet advies hoe je communiceert over jouw oorzaken tav stress • Oefenen met aangeven van oorzaken van stress bij jezelf (groep en thuis)	
Helder communiceren over grenzen	• Uitleg over belang van communiceren van je eigen grenzen • Concreet advies over hoe je communiceert over grenzen • Oefenen met aangeven van je grenzen (groep en thuis)	
Hulp vragen	• Uitleg over belang van hulp vragen • Concreet advies over hoe je hulp vraagt • Oefenen met hulp vragen	
Terugval voorkomen	• Herhalen van wat geleerd is • Tips over blijvend gebruik persoonlijke thermometer • Uitleg over herstelwerkgroepen	

	• Persoonlijke tips van een ervaringsdeskundige in de laatste groepsbijeenkomst over terugval voorkomen • Uitdelen van Handreiking Zelfmanagement NIPA • Evaluatie met brugpersoon en jongere en een trainer • Eventueel tips geven aan brugpersoon over wat belangrijk is voor deze persoon om terugval te voorkomen	

C. Schaal: Methoden (om tot de doelen te komen)

		EXPERT Commentaar *Wat vind je van deze methoden?*
Psychomotorische vaardigheden	• Oefenen in de directe situatie middels PMT in de PMT ruimte middels werkvormen • Signalen herkennen van stress en noteren in de groep en thuis • De deelnemers bewust maken dat zij invloed kunnen uitoefenen op hun omgeving door te communiceren zoals bijv grenzen aangeven en hulp vragen.	

Ervaringsgerichte oefeningen/experiëntiële technieken	• Het creëren van een situatie waarbij de cliënt signalen van stress kan herkennen • Het creëren van een situatie waarbij de cliënt kan oefenen met het leren omgaan en reageren op signalen van stress • Het creëren van een situatie waarbij de cliënt kan oefenen met communiceren ten aanzien van stress, hulp vragen en grenzen aangeven	
Mindfulness/ Aandachtsoefeningen	• In het hier en nu zijn (mindfulness; rondje incheck en uitcheck) • Aandachtsoefeningen in de groep (mindfulness bedoeld om in de groep in het hier en nu te zijn, wat merk ik op) • Aandachtsoefeningen thuis doen om stress te reguleren door in het hier en nu te zijn, het kan ontspanning opleveren maar is juist geen doel op zich	
Psycho-educatie (met o.a. Brain Blocks en theorie over ASS per sessie)	• Uitleg over autisme gekoppeld aan oorzaken van stress	

	• Herkennen van oorzaken van stress door je autisme • Herhaling van theorie uit vorige sessie (terug te lezen in werkboek)	
Modelling	• Groepstherapeuten doen mee, kunnen voorbeelden geven en normaliseren gedrag.	
Zelf monitoring	• stress thermometer	
Sociale vaardigheden	• Communiceren over stress • Steun zoeken bij anderen buiten de groep	
Generalisatie	• Brugpersoon inzetten • Huiswerk	
Lotgenotencontact	• Delen van eigen ervaringen • Steun zoeken	
Het bespreken van huiswerkopdrachten	• Het leren herkennen van de eigen situatie, eigen kenmerken van autisme en oorzaken van stress	
Huiswerkopdrachten meekrijgen	• In de eigen situatie gaan herkennen van signalen van stress en registreren • Oefenen met gebruik van stress thermometer	

	• Inzicht krijgen in balans tussen inspanning en ontspanning • Oefenen met mindfulness/aandachtsoefeningen	

D. Schaal: terugkerende methoden (frequentie)

													EXPERT Commentaar *Hoe vaak zou deze methode terug moeten komen?*
	1	2	3	4	5	6	7	8	9	10	11	12	
Psychomotorische vaardigheden													
Ervaringsgerichte oefeningen/ experientiele technieken													
Mindfulness/ Aandachtsoefeningen													
Psycho-educatie													
Modelling													
Exposure (aangaan van oefeningen)													

Zelf monitoring													
Sociale vaardigheden													
Generalisatie													
Lotgenotencontact													
Het bespreken van huiswerkopdrachten													
Huiswerkopdrachten meekrijgen													

E. Schaal: Therapeutische band opbouwen

	EXPERT Commentaar *Wat vind je van deze elementen?*
• Het gebruik van compassie van therapeut naar cliënt	
• Bekrachtiging	
• Benoemen van kwaliteiten	
• Coaching rol innemen/ cliënt zelfinzicht meegeven	

F. Schaal: Vormgeving

	EXPERT Commentaar *Wat vind je van deze vorm?*
• Aantal sessies: 12	•
• Duur per sessie: 1 uur en 30 min	•

Overige Opmerkingen:

_____

Wat ik verder mis is:

Wat ik sterk aan deze interventie vindt:

Appendix 2: Feasibility questionnaire patients

Vragenlijst tevredenheid Prikkel-balans groep ASS per sessie: door jongere

Datum:…….

Sessie: ……..

In deze vragenlijst staan vragen over sessie xx van de Prikkel-Balans groep die je momenteel aan het volgen bent. Na elke sessie vragen we je een dergelijk formulier in te vullen. Dit helpt ons om de training zo goed mogelijk vorm te geven, zodat het aansluit op wat jullie nodig hebben, of waar de behoefte ligt. Deze training is nog in ontwikkeling, vandaar dat we jullie feedback heel waardevol vinden. Heel fijn als je deze lijst wilt invullen. Alvast dank daarvoor!

		Niet nuttig	***Beetje Nuttig***	***Nuttig***
1	Hoe nuttig was de aandachtsoefening aan het begin van de training?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet nuttig	***Beetje nuttig***	***Nuttig***
2	Hoe nuttig was de vraag over wat je in je lijf voelde of merkte na de aandachtsoefening?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet duidelijk	***Beetje duidelijk***	***Duidelijk***
3	Hoe duidelijk was de uitleg over de stress-thermometer?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

4	Hoe nuttig was het invullen van je stress thermometer in 2-tallen?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet nuttig	***Beetje nuttig***	***Nuttig***
5	Hoe nuttig was de PMT oefening met de ballen overgooien?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet nuttig	***Beetje nuttig***	***Nuttig***
6	Hoe nuttig was de nabespreking van de PMT oefening?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet nuttig	***Beetje nuttig***	***Nuttig***
7	Hoe nuttig was het invullen van de stress thermometer?	□	□	□

(graag aangeven wat niet en/of wel nuttig was)

_____

_____

_____

_____

_____

		Niet duidelijk	***Beetje duidelijk***	***Duidelijk***

8	Hoe duidelijk was het huiswerk wat je hebt opgekregen?	□	□	□

(graag aangeven wat niet duidelijk was en hoe dat beter had gekund)

_____

_____

_____

_____

_____

Overige opmerkingen/aanvullingen. Tips en tops:

Dank voor het invullen!

Appendix 3: Feasibility questionnaire therapists

Vragenlijst bruikbaarheid en tevredenheid prikkel training: de therapeut

Sessie:……

Deze vragenlijst gaat over tevredenheid van het protocol en wordt na elke sessie ingevuld. De vragen gaan over duidelijkheid en bruikbaarheid van het protocol per sessie.

		Onduidelijk	***Beetje duidelijk***	***Duidelijk***	***Nvt***
1	Het doel van deze sessie is duidelijk beschreven	□	□	□	□

(graag aangeven wat niet en/of wel duidelijk was)

_____

_____

_____

_____

_____

		Onduidelijk	***Beetje duidelijk***	***Duidelijk***	***Nvt***
2	De aandachts oefeningen zijn duidelijk	□	□	□	□

(graag aangeven wat niet en/of wel duidelijk was)

_____

_____

_____

_____

_____

		Onduidelijk	***Beetje duidelijk***	***Duidelijk***	***Nvt***
3	De PMT oefeningen zijn duidelijk	□	□	□	□

(graag aangeven wat niet en/of wel duidelijk was)

_____
_____
_____
_____
_____

		Onduidelijk	***Beetje duidelijk***	***Duidelijk***	***Nvt***
4	De theorie die uitgelegd moet worden is duidelijk	□	□	□	□

(graag aangeven wat niet en/of wel duidelijk was)

_____
_____
_____
_____
_____

		Onduidelijk	***Beetje duidelijk***	***Duidelijk***	***Nvt***
5	De huiswerkopdrachten zijn duidelijk	□	□	□	□

(graag aangeven wat niet en/of wel duidelijk was)

_____
_____
_____
_____
_____

		Nee	***Enigzins***	***Ja***	***Nvt***

6	Ik kan het beschreven doel goed toepassen bij deze jongere	□	□	□	□

(graag aangeven wat niet en/of wel toepasbaar was)

_____

_____

_____

		Nee	***Enigzins***	***Ja***	***Nvt***
7	Ik kan de aandachts oefeningen goed toepassen bij deze jongere.	□	□	□	□

(graag aangeven wat niet en/of wel toepasbaar was)

_____

_____

_____

		Nee	***Enigzins***	***Ja***	***Nvt***
8	Ik kan de PMT oefeningen goed toepassen bij deze jongere	□	□	□	□

(graag aangeven wat niet en/of wel toepasbaar was)

_____

_____

_____

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		Nee	***Enigzins***	***Ja***	***Nvt***
9	Ik kan de theorie/uitleg mbv brain blocks goed toepassen bij deze jongere	□	□	□	□

(graag aangeven wat niet en/of wel toepasbaar was)

_____
_____
_____
_____
_____

		Nee	***Enigzins***	***Ja***	***Nvt***
10	Ik kan de huiswerkopdrachten goed toepassen bij deze jongere	□	□	□	□

(graag aangeven wat niet en/of wel toepasbaar was)

_____
_____
_____
_____
_____

		Nee	***Enigzins***	***Ja***	***Nvt***
11	Ik vind de tijdsduur van deze sessie voldoende.	□	□	□	□

(graag uitleg)

_____
_____
_____

		Nee	***Enigzins***	***Ja***	***Nvt***
12	Ik vind de groepsgrootte voldoende.	□	□	□	□

(graag uitleg)

Dank voor het invullen!