A close up of a logo

Description automatically generated

Shaping Emotional Intelligence: How Childhood and Current Support Influences

Neurodivergent and Neurotypical Lives

By Eleanor Hanson

Shaping Emotional Intelligence: How Childhood and Current Support Influences

Neurodivergent and Neurotypical Lives

**Abstract**

Influenced by the perceptions of childhood and current SS, EI serves as a forefront to executive function, social interaction and personal competence. Such dynamics are particularly relevant in ASD and ADHD populations, where impairments in EI and social processing often intersect with challenges in perceived support. The current study aims to combine supportive relations and childhood bonds, to investigate the influencing link on the EI of both neurodivergent and TDI. This study implements a between-subjects design to explore the main effects of diagnosis (ASD, ADHD and typical), perceptions of current SS and CS and their combined impact on dependent variable, ‘EI’. The research hypothesis predicts an interaction between variables, with TDI, who perceive high support expecting to produce higher scores of EI. A sample of 96 participants, aged 18-55, (10 ASD, 10 ADHD, 76 typical) completed three measures of CS, SS and EI through use of the ‘Parental bonding instrument’, the ‘multidimensional scale of perceived SS’ and ‘Schutte self-report EI test’. A three-way between subjects Anova revealed a significant main effect of SS on EI, but no significant effects for diagnosis, CS, or their interactions. Whilst research limitations capture the complexity of measuring SS, this study contributes to EI literature by highlighting the role of perceived SS and including a neurodiverse sample, supporting aspects of Goleman’s EI theory.

**Introduction**

Valuing uniqueness, neurodiversity is a concept that represents the complexity of the human mind, recognising the diversity in how people think, learn and process information (Rollnik-Sadowska & Grabińska, 2024). Neurodivergent individuals, including those with Autism Spectrum Disorder (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD), often face difficulty with executive function skills, thinking awareness and affective ability to manage themselves and understand their impact on others (Coplan et al., 202; Sethi, 2024). ASD is a developmental disorder typically affecting social interaction abilities, language and repetitive behaviours in individuals ([American Psychiatric Association, 2000](https://www.sciencedirect.com/science/article/pii/S0149763410001831#bib0015); Gargaro et al., 2011) and is often characterised by struggles related to self-management and self-regulation (Goodall, 2021). ADHD is a neurodevelopmental disorder often presenting symptoms of inattention, hyperactivity and impulsiveness and is also characterised by struggles with emotional regulation and emotion recognition (Kaur & Katevarapu, 2022). Compared to typically developed individuals (TDI), those with ASD or ADHD show increased executive function impairments, including self-control, flexibility and elevated feelings of anxiety or depression (Lawson et al., 2015), and research observes heightened deficits in narrative abilities and language delay (Kuijper et al., 2017; Miniscalco et al., 2007). Many symptoms seen in both ASD and ADHD individuals, relate mainly to emotional development often with deficits in emotional recognition and struggles with emotional deviations, (Bakola & Drigas, 2020). Research by Jaisle et al. (2023), links hyperactive ADHD symptoms and restricted behavioural ASD symptoms to emotional dysregulation, showing the detrimental impacts to the social competence abilities of neurodiverse individuals. Such insight highlights the importance of implementing target intervention and support to reduce impairment for ASD and ADHD individuals (Jaisle et al., 2023). Such difficulties emphasise the need to implement support systems, particularly through close relations to shape the development of emotional intelligence (EI) (Sultan et al., 2019), in neurodivergent and TDI.

In the context of ASD and ADHD, childhood support (CS) involves the active participation of parents and families, acting as an underpinning to the development of a child’s life, to encourage progress in various aspects (Li, 2024). Li (2024), highlights the importance of early CS, including interventions and family guidance, in improving the personal, social and cognitive abilities of children with ASD and ADHD, enhancing their quality of life and forming a strong foundation for their future of learning and life outcomes. Similarly, research shows effects of CS, with positive parental involvement having enhanced developmental effects on independent emotional regulation strategies of TDI (Crowell et al., 2019). For example, research has shown that caring parenting styles positively influence EI in typical children, fostering higher self-esteem and better coping skills through supportive encouragement (Debbarma & Bhattacharjee, 2018). Additional evidence reinforces these findings that parent-child relations driven by love being more greatly associated with higher EI and greater happiness (Sillick & Schutte, 2006). This emphasises, with heightened reference to parental bonding, the sway of environmental influences and forming of crucially meaningful relationships in shaping individuals to become successful versions of themselves and function competently (Rebalde, 2022).

Considering ASD children, research suggests that CS, reflected in a parent-child relationship and behaviours, plays a key role in development (Crowell et al., 2019). For example, a more supportive parental involvement, mediated by reduced over-involvement, is associated with self-regulated compliance in ASD children (Ostfeld-Etzion, 2016).

Similarly, Montejo et al. (2019), investigates reflections of CS in ADHD adults, and observes that those recalling difficulties in emotional connection in their childhood, receiving low care and overprotection, reported more self-control, identity and relationship struggles in the adulthood. Such insight emphasises the influential impact of CS on adulthood outcomes and provides clear understanding of family impact in ADHD experiences. The implementation of the Parental bonding instrument (PBI) (Parker et al., 1979) by means of effectively measuring the CS variable in neurodivergent participants in this research (Montejo et al., 2019), combined with the remaining desire to investigate family related variables in the field of ADHD provides a drive for the current study.

On the contrary, research investigating CS in terms of parental bonding in TDI, had inconsistent findings suggesting that despite a recollection of poor parenting in childhood, TDI had moderately high EI as adults (Butalid et al., 2013). However, this research further proposes the unclear possibility of multiple factors, including peer influence, the environment and learning experiences, collectively attributing to EI competencies (Butalid et al., 2013). This emphasises the need for further research into the collection of potential factors influencing outcomes in adult life; something the current study aims to begin to clarify.

Serving as a form of guidance to individuals, social support (SS) refers to the functional measures implemented by an individual’s social network that support interactions and behaviours in the social environment (Helgeson, 2003). Ranging from emotionally guided care, reassurance and love to physical encouragement (Helgeson, 2003), there is associations between a strong social surrounding and mental wellbeing (Nilsen et al., 2013). Research on ADHD individuals supports this concept by revealing positive relations between total support and measures of self-concept, and perceived competence (Mastoras et al., 2018). Likewise, research also shows supportive social network to be a meaningful component in supporting the quality of life for those with ASD (Renty & Roeyers, 2006). From an opposing standpoint, research recognises more negative implications of poor SS on ASD and ADHD individuals (Thapar et al., 2023). Correlational analysis suggests lower support quantity and satisfaction is linked to depressive and suicidal implications in ASD individuals (Hedley et al., 2018) and research fosters a link between decreased friendship quality and subsequent depressive symptoms in ADHD individuals (Powel, 2021). Such research provides meaningful insight into the benefits of implementing valuable relationships between neurodivergent individuals and their social network for improved wellbeing (Mastoras et al., 2018).

Consistently, research on TDI shows low levels of SS are linked to poorer mental health outcomes, including increased depressive symptoms (Bucholz et al., 2014). However, whilst research does recognise the significant influence of family relations in predicting emotions and life satisfaction, support received from friend or other close individuals alone may not sufficiently affect subjective wellbeing (Gülaçtı, 2010). This unclarity emphasises the complexity regarding SS (Gülaçtı, 2010) and the influence of various relations, guiding consideration for the current study.

Previous research by (Alvarez‐Fernandez et al., 2017) has compared perceived SS between ASD, ADHD and TDI and how this related to the impact on mental wellbeing and functional outcome. Findings show that ASD individuals reported significantly lower levels of SS, which accompanied by lower interpersonal sensitivity skills, social distress and personal anxiety. The use of the Multidimensional scale of perceived social support (MSPSS) (Zimet et al., 1988) in this research allows for informative insight regarding support for participants within each level of the diagnostic criteria. This factor, combined with the necessity for further understanding perceived SS in relation to personal competencies on a deeper level (Alvarez‐Fernandez et al., 2017) encourages a drive for the current research to clarify.

Beyond intellectual capacity and as an extension of cognitive complexity, EI serves as a foundation for the brilliance of the human mind (Pandey, 2024). Salovey and Mayer (1990), propose EI to be a complex collection of social and emotional skills that guide thinking and actions in individuals, through the recognition and understanding of one’s own, and others’ emotions. High EI is marked by emotional adaptability, motivation to utilize feelings appropriately and emotional recognition (Kaur & Katevarapu, 2022), whereas difficulty expressing and adapting to emotional situations would indicate social-emotional developmental struggles (Sethi, 2024).

Neurodivergent individuals, including those with ASD and ADHD often experience difficulties relating to emotion recognition, regulation, social function, which is consequential to executive function (Martinez et al., 2024). For example, given the more advanced emotional and social challenged faced by ASD individuals, research shows lower EI related traits and increased inability to function in social-emotional situations for ASD adolescents and adults, as opposed to TDI (Brady et al., 2014). Research incorporating older ASD adults emphasises the challenges of emotional dysregulation, a key aspect of EI, with detrimental effects on personal life, including employability and daily living functioning (Beck et al., 2024). Similarly, research comparing ADHD adults to TDI, (Rahimi & Shojaei, 2019), shows lower scores of EI in ADHD particularly in emotional regulation, impulse control and emotional acceptance, suggesting increased difficulty in coping with everyday challenges, forming relationships and psychological wellbeing.

Alternatively to this, research by Climie et al. (2019), found no statistical difference between the intrapersonal abilities, nor the communicative, recognition or understanding abilities relating to EI between ADHD individuals and TDI. Whilst this research is insightful, there remains notable consideration of the symptomatic influences within ADHD, including impulsivity that could potentially influence ability to communicate emotion or utilise EI skills (Climie et al., 2019). Collectively, research emphasises the crucial role of EI in the maintenance of relationships and recognition of others’ emotions, setting a strong foundation to navigate and respond to situations effectively and successfully (Bradberry & Greaves, 2009). Such realities places emphasis on the importance of continued ASD and ADHD research (Martinez et al., 2024), motivating current research, particularly in the field of EI, to form a basis for implementing support.

Considering Goleman’s EI theory (1995), it is insinuated that emotional competencies are the product of learned capabilities and are constructable to be developed through exposure to environmental influences (Kaur & Katevarapu, 2022). In support of this concept, research suggests a significant influence of support perceptions on the emotional competence abilities of individuals Samuel et al. (2023), highlighting the crucial role that strong connections and SS plays in enhancing personal competencies of TDI, including self-awareness and regulation (Samuel et al., 2023). Consistently, Fabio and Kenny (2012), show TDI, with a more available SS system are more proficient in their emotional recognition abilities. However, despite positive associations between higher EI and greater SS, researcher (Metaj-Macula, 2017) acknowledges the importance supportive interpersonal relationships being context-dependent and perceptions of these relating to personal tendencies to appreciate and recognise these networks.

Previous research (Malinauskas & Malinauskiene, 2018; Malinauskas & Malinauskiene, 2020), investigates SS, EI and psychological wellbeing in TDI, contributing to the understanding of strengthening support to help overcome difficulties. Implementation of MSPSS (Zimet et al., 1988) and Schutte self-report EI test (SSEIT) (Schutte et al., 1998) in this research allows for insightful tools to investigate variables in TDI (Malinauskas & Malinauskiene, 2020). To the best of one’s knowledge, there is limited research implementing these measures to a neurodiverse population, indicating an area for potential exploration in the current research.

Whilst research supports Goleman’s (1995) view that emotional competencies can be worked on and influenced to achieve meaningful personal abilities (Kaur & Katevarapu, 2022), consideration should be placed on the unique perspectives relating to social interaction of neurodivergent thinkers (Akhmedova et al., 2024). Differently from TDI, those with ASD or ADHD may navigate social cues and establish networks in a way that reflects their individuality (Akhmedova et al., 2024). For example, due to experiencing emotions differently, it is difficult for those with ADHD to recognise positive support available to them in moments of overwhelm and may have individual needs and desire for what is beneficial to them in terms of support (Duede, 2023). Additionally, traits associated with ASD, including social interaction and communication difficulties, in both formal and informal situations, may inhibit an individual’s desire to seek help and SS from those around them (Hirvikoski & Blomqvist, 2015). This notion places emphasis on the importance having high quality support networks available for neurodivergent people. Therefore, to recognise the unique challenges faced by the neurodivergent community, implementation of personalised intervention and a more advanced approach to support may be necessary for more meaningful outcomes (Trevisan et al., 2021). However, despite these perceived situational experiences relating to difficulties with social interaction, it should be acknowledged that neurodivergent individuals are still likely to benefit from the support of a social network in some way (Bishop-Fitzpatrik et al., 2018).

With emotionally intellectual abilities serving a crucial foundation to self-awareness, emotional management, competency (Akerjordet & Severinsson, 2007) and the ability to effectively cope with stress (Enns et al., 2018), there is a constant emphasis placed on the importance of understanding any impacting factors. A review by Lincon (2000), investigating the impacts of social interactions, highlights the intense influence of negative aspects of social networks being potentially as influential on psychological wellbeing as the positive aspects. Such research emphasises the need for further investigation into the overall potential impacts of perceived SS on personal competencies that enhance EI which foundations the skills to face challenges of life (Samuel et al., 2023). Additionally, there is a notable desire for more research to adhere to the experiences of neurodiverse populations in relation to their SS and EI, for a more holistic understanding of this research area (Hidayati et al., 2019). This emphasises the ever-growing need for deeper understanding of the aspects of life that influence our personal competencies, and this research intends to contribute to this field with an additional element of consideration towards diverse populations, which has previously been under-investigated.

Furthermore, previous research has focussed on the influence of parent behaviour and responsiveness as an effect on the developmental characteristics of neurodivergent people (Siller & Sigman, 2008), rather than EI specifically. There remains a body of research into the influence of parent related CS on the EI in predominantly neurotypical populations (Debbarma & Bhattacharjee, 2018; Sillick & Schutte, 2006), whereas to the best of one’s knowledge, there is scarcity of exploration into the experiences of neurodivergent people. Therefore, it is important for this study to contribute to the paucity of research on the impact of CS, in the form of parental bonding on EI, with additional insights into the experience of neurodivergent individuals, a population that has previous limited attention to in respect to this.

Additionally, it is proposed that EI can be adapted and enhanced throughout people’s lives, by means of supportive interventions and learning, to improve personal outcomes (Munir & Azam, 2017). Considering this, it is important for the current study to contribute to the existing field of knowledge around EI to understand the factors and create a basis of targets to form meaningful intervention in this area.

Overall, there is a clear scope of research investigating the independent factors of diagnosis and types of received support, and their influence on individuals’ EI and socioemotional abilities (Bakola & Drigas, 2020; Li, 2024; Nilsen et al., 2013) There remains a notable gap in research that addresses the impact of these variables collectively and their intertwined impact on emotional development. Therefore, it is valuable for the current study to contribute to the existing knowledge of EI, integrating various influencing factors to enhance the extensive understanding of this complex construct.

On the basis that neurodivergent individuals demonstrate lower EI competencies compared to TDI, particularly in emotion recognition (Howes, 2023). The current research aims to understand the impact of interpersonal interactions and childhood bonds by investigating the influencing link between perceptions of SS and the emotional awareness and adaptability of both neurodivergent and TDI. The present study explores CS using the PBI (Parker et al., 1979), current perceived SS using the MSPSS (Zimet et al., 1988) and EI using the SSEIT (Schutte et al., 1998) in ASD, ADHD and TDI.

In the present study it is hypothesised that TDI, will produce higher EI scores compared to those participants with an ASD or ADHD diagnosis. The main effect of CS is hypothesised to show those who perceive high CS will produce higher EI scores. For the main effect of current SS, it is hypothesised that those scoring high in perceived SS, will score higher on the EI measure. Finally, it is hypothesised that there will be an interaction between variables and their combined impact on the dependent variable, with TDI, who generate higher scores on their perceptions of current and CS, expecting to produce higher scores of EIs.

**Methods**

**Ethical Consideration:**

Ethical approval for this research was granted by the psychology department ethics panel at the University of Staffordshire.

The BPS code of conduct was considered to maintain protection of participants and ethical consideration throughout this research.

All participants provide informed consent to take part in this research [Appendix B].

There is no deception involved as participants were informed of all information regarding this research.

Protection of participants was maintained throughout this study and subjects were not exposed to any physical or psychological harm. In the unlikely event of distress or inconvenience, the debrief form [Appendix C] directs participants towards the Staffordshire University student counselling service and an emotional support organisation for additional support.

All data collected for this research was stored securely and anonymously, using a unique identifier code, to maintain privacy and confidentiality for participants, with the withdrawal period remaining.

**Design**

In this research, a three-way between-subjects ANOVA design implemented, with all participants aligning into one of three diagnostic categories, before completing the preceding scales. There are three independent variables used in this study: Diagnosis, (ASD vs ADHD vs typical), perceived SS (high vs medium vs low), and CS (high vs low) as a combination of care received by mother and father. The dependent variable for this research is EI.

**Participants**

A prospective power analysis was conducted and indicated that a sample size of 60 participants in each IV group (ASD, ADHD and TDI), would be sufficient to result in a power of 0.8, based on a medium effect size of 0.059, according to Cohens (1988) guidelines.

Participants were recruited through the Staffordshire university SONA system, receiving two participation credits as incentive. Participants were also recruited through opportunity and convenience sampling using social media platforms, as well as a snowball sampling strategy through participants passing on the research link to others. These techniques were useful for encouraging participants to take part who may have an interest in this research area, as well as those who may fit into the criteria.

Initially, this research obtained 147 recorded responses, however, 50 participants had missing responses meaning after data cleaning, there were 96 recorded responses, having fully completed the study.

The overall age of participants ranged between 18-55, (Mean= 24.34, SD=9.55). Of this sample, 10 reported to have an ASD diagnosis (4 male, 2 female, 4 non-binary, age range 20-44, mean age 27, SD= 9), 10 reported to have an ADHD diagnosis (2 male, 5 female, 2 non-binary, 1 prefer not to say, age range 18-35, mean=24, SD= 5) and 76 reported typical development (18 male, 58 female, age range 18-55, mean =24, SD= 10) [Appendix G].

All participants met the inclusion criteria for this research and therefore no participants were removed from the dataset. All participants were over the age of 18, and had a diagnosis of either ASD, ADHD or neither, as well as having grown up with a mother and a father.

**Materials**

The participation of this study required access to a device to complete the online surveys via the Qualtrics software, a survey administration and response recording platform.

Participant documentation:

Participants were presented with an information sheet (Appendix A), including all relevant information regarding the purpose and process of the research.

Participants were also presented with a consent form [Appendix B], which required agreement before moving forward with the study. Participants who did not agree to any statements in the consent section, were directed to the end of the survey.

At the end of the study debrief form [Appendix C] is presented, explaining all relevant information regarding the purpose of this research, relevant contact details and the process of withdrawal.

Parental bonding instrument (PBI) (Parker et al., 1979)

This scale [Appendix D] possesses strong internal consistency and re-test reliability (Parker et al., 1979). This scale measures the ‘CS’ variable and offers a good opportunity for reflection of how individuals feel they were supported by their parents in childhood, with a purpose of measuring ‘care’ and ‘protection’. This scale is a retrospective measure, with a 4-point scoring ranging from ‘3=very likely’ to ‘0= very unlikely’ for 25 statements per parent, for example ‘Was affectionate to me’. In this scale, items [2,3,4,7,14,15,16,18,21,22,24,25] are reverse scored. In scoring, as a combination of both parents’ care, a high score indicates a participant perceiving their received CS as high, whereas a low score indicates having perceived CS from parents as low. High and low scores are determined based on the mean scores of the sample in the current study.

Multidimensional scale of perceived social support (MSPSS) (Zimet et al., 1988)

This measures the perceived support variable and allows insight into participants current perception of the support they receive. This scale [Appendix E] provides a valid, reliable and efficient measure of the current perceptions of support from family, friends and others (Zimet et al., 1990). Scored using a 7-point Likert scale, with ratings from ‘1= very strongly disagree’ to ‘7= very strongly agree’, this scale contains 12 items, for example ‘my friends really try to help me’. None of the items in this scale are reverse coded. This scale is scored in terms of ‘high, medium and low’, based on the mean and standard deviation of scores for the sample in the current study. with ‘high’ scores indicating a perception of having good SS, whereas a ‘low’ score would indicate a perception of poor support.

Schutte self-report EI test (SSEIT) (Schutte et al., 1998)

This scale [Appendix F] measures the dependent variable, ‘EI’, and asks participants to respond in relation to their current life and emotions. This scale shows to have good internal reliability and is a valid measure of EI to be used in theoretical research (Schuttes et al., 1998, Aniemeka et al., 2020). Consisting of 33-items, this scale uses a 5-point Likert scale, ranging from ‘1=strongly disagree’ to ‘5=strongly agree’ for statements. For this scale, items [5,28,33] are reverse coded. An example statement for this scale is ‘I know why my emotions change’. High scores indicate higher EI abilities, compared to low scores which indicate lower EI abilities.

**Procedure**

No specific testing order is implemented in this research, with the goal of reducing order effects. However, participants are asked to answer questions regarding their CS, followed by current support for the purpose of chronological order of reflections.

Upon participation, subjects were asked to read the information sheet [Appendix A], before consenting to take part in the study via the consent form [Appendix B]. For anonymity, participants were asked to provide a unique identifier code, for ease of identification in the case of data withdrawal.

Following consent, participants were asked demographic information, including age and gender, followed by indication of their diagnosis status: ‘Autism, ADHD or no diagnosis’.

Participants were first presented with the PBI (Parker et al., 1979), followed by the MSPSS (Zimet et al., 1988), measuring perceptions of received support and finally the SSEIT (Schutte et al., 1998).

Following the scales, participants were thanked for their time and presented with a debrief form (Appendix C). Participants who were recruited through the Staffordshire University SONA system were allocated 2 SONA credits for their participation.

**Results**

The results represent participants scores of EI based on their diagnosis and perceptions of received support currently and from childhood. The independent variables include diagnosis (ASD, ADHD or TD), perceived support (high medium low) and CS (High, low). The dependent variable is EI.

The results for this research have been analysed using IBM SPSS statistics software Version 29.0.1.0 (171). All data screening can be found in Appendix G.

Originally, there were 147 responses to the scale, however data cleaning showed missing response values from 50 participants. The following results are based on full responses from 96 participants.

Demographic information of participants gender count within each level of the independent variable is represented in Table 1. There is a distinctive difference between male and female participants, with female participants having a larger count across majority of groups, particularly in the typical development group. These gender differences may have influenced the results [Appendix G].

**Table 1**

*The gender count of participants within each level of the independent variables.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | | *Demographic information (Gender)* | | | |
|  |  | *Male* | | *Female* | *Non-binary/ Third gender* | *Prefer not to say* |
| *Diagnosis* | *ASD* | 4 | | 2 | 4 | 0 |
|  | *ADHD* | 2 | | 5 | 2 | 1 |
|  | *Typical development* | 18 | | 58 | 0 | 0 |
| *Perceived support* | *Low perceived support* | 6 | | 8 | 1 | 0 |
|  | *Medium perceived support* | 15 | | 46 | 5 | 1 |
|  | *High perceived support* | 3 | | 11 | 0 | 0 |
| *CS* | *Low CS* | 10 | | 32 | 5 | 1 |
|  | *High CS* | 14 | | 33 | 1 | 0 |

The mean and standard deviation of age proportions across each level of the independent variables is represented in Table 2. The means show that the average age across the groups is relatively consistent, with those reporting ASD diagnosis having a slightly higher age group on average, compared to the other diagnostic groups. The standard deviation for the diagnosis variable shows the ADHD group has little variation in their age range, whilst the typical development group has the most variability in age ranges. For perceived support, data shows that those with low and high perceived support have more varied age ranges of participants, whereas those with medium support are more age consistent. For CS, the standard deviation for low and high CS shows them to have similar age variability of participants, with neither having a particularly tight age range [Appendix G].

**Table 2**

*The age count of participants within each level of the independent variables*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Demographic information (Age) | |
|  |  | Mean | Standard deviation |
| Diagnosis | ASD | 27 | 9 |
|  | ADHD | 24 | 5 |
|  | Typical development | 24 | 10 |
| Perceived support | Low perceived support | 30 | 13 |
|  | Medium perceived support | 23 | 8 |
|  | High perceived support | 25 | 12 |
| CS | Low CS | 25 | 9 |
|  | High CS | 24 | 10 |

The means and standard deviations of EI for each diagnostic group are presented in Table 3. The means show that research is travelling in a direction in line with the hypothesis, that those with no diagnosis show higher EI scores, whereas those with ASD scored lower on the EI scale. The standard deviation scores for ASD and ADHD, groups indicate a relatively wide range of EI scores for these groups. A smaller standard deviation for TDI suggests more consistency amongst scores of EI for this group.

**Table 3**

*The means and standard deviation of EI between the diagnosis groups.*

|  |  |  |
| --- | --- | --- |
|  | **Emotional intelligence** | |
|  | **Mean** | **Standard Deviation** |
| **ASD** | 101.3 | 22.10 |
| **ADHD** | 112.0 | 18.16 |
| **Typical individuals** | 119.57 | 17.09 |

The means and standard deviations of EI for each level of current perceived support are represented in Table 4. The means show that on average, those participants who scored ‘high’ on the MSPSS, scored higher on the EI scale, in comparison to those who scored ‘low’ in terms of perceptions of current support. These means travel in the direction of the hypothesis, with those perceiving higher levels of SS scoring higher EI [Appendix G]. The standard deviations indicate a moderate spread of EI scores across all groups of perceived support, with ‘medium and high perceived support’ groups being slightly more consistent and closer to the group average, compared to the ‘low perceived support’ group.

**Table 4**

*The means and standard deviation of EI between levels of current perceptions of support.*

|  |  |  |
| --- | --- | --- |
|  | **Emotional intelligence** | |
|  | **Mean** | **Standard Deviation** |
| **Low perceived support** | 105.73 | 19.59 |
| **Medium perceived support** | 116.94 | 17.15 |
| **High perceived support** | 128.50 | 17.39 |

The means and standard deviations of EI for each level of perceived CS are represented in Table 5. The means represent that on average participants who scored ‘high’ on the parental bonding instrument, measuring parental care, scored higher on the EI scale, compared to those who scored ‘low’ on parental care. These means also travel in the direction of the hypothesis, with those reporting higher CS, scoring higher on EI. The standard deviations indicate that those with high perceived CS have more consistent EI scores, compared to those with low perceived CS, showing more variation in scores against the average.

**Table 5**

*The means and standard deviation of EI between low and high levels of reported CS.*

|  |  |  |
| --- | --- | --- |
|  | **Emotional intelligence** | |
|  | **Mean** | **Standard Deviation** |
| **Low CS** | 113.13 | 20.35 |
| **High CS** | 120.63 | 15.75 |

Data screening

Before conducting the statistical test, the data was screened for parametric assumptions to ensure reliability and validity.

Outliers in the dataset were examined for by calculating z-scores separately for each level of the first independent variable (ASD, ADHD and TD) [Appendix G]. Out of the calculated z-scores, no cases exceeded the -3, +3 threshold, suggesting no extreme outliers were present in the dataset and no scores were removed.

Normal distribution was examined for each variable and descriptive statistics show all skewness and kurtosis values to fall between the -1 to +1 range [Appendix G]. This suggests data is normally distributed.

The data was checked for homogeneity of variance using variance values in the descriptive tables [Appendix G]. Due to unequal sample sizes, the threshold was for the larger variance value to be no more than twice the size of the smallest value to achieve the homogeneity of variance assumption. The dataset shows these criteria to be met, suggesting the homogeneity assumption was met.

Due to data screening revealing no parametric assumption violations and having three independent variables and one dependent variable present, a 3-way between-subjects ANOVA was decided to be conducted. This statistical test allows for the significant effect of each variable to me measured against the dependent variable, as well as a measure of significant interaction between variables.

Statistical test (Three-way ANOVA)

A 3-way Anova was conducted to examine the effects of diagnosis (ASD, ADHD or no diagnosis), perceived support (high, medium, low) and CS (high, low) on EI.

There was a significant main effect of perceived SS on EI, = 8.636, *p* < .001, *η*² = 0.139. This is a large effect size, according to Cohen (1988), indicating meaningful effect.

There was no significant effect of diagnosis on participants EI,

= 2.749, *p* = .070, = 0.044. This effect size is greater than small, but did not meet the threshold for medium, according to Cohen (1988).

There was also no significant effect of CS on EI, = .059, *p* < .809, = 0.00048. This effect size is small according to Cohen (1988).

There was no significance interaction found for diagnosis and CS, = 1.806, *p* =.183, = 0.015. Nor was there a significant interaction between diagnosis and support level, = .800, *p* = .453, = 0.013. Both reported effect sizes were small according to Cohen (1988).

For the interaction of CS and support level, there was no significance found, = 3.083, *p*= .051, = 0.0497, however, it is recognised that this result is approaching significance. Therefore, it can be assumed that with a larger sample size, as well as equal samples sizes, it is likely that this interaction would be significant. The effect size is between small and medium according to Cohen (1988).

Due to time constraints in conducting research and limited access to target sample consisting of neurodivergent populations (ASD, ADHD), some condition in this research did not have participants allocated to them. This meant the three-way interaction could not be calculated, resulting in no significance for this interaction [Appendix G].

Due to a lack of significance within the interactions, a simple effects measure was not necessary to be conducted.

Results clearly show that the significance in this research lies within the effect of perceived SS on EI. Due to clear identification of where this significance lies, there was no post-hoc analysis necessary to be conducted for this.

Due to having no significance for the effect of main effects, on the dependent variable, a retrospective power analysis was conducted using G power (version 3.1.9.7) (Faul et al., 2009) to see how many participants would detect a significant effect.

A retrospective power analysis for diagnosis variable showed the power of the study was approximately 0.44, given the effect size ( = 0.044, *f*= 0.215), for alpha level of 0.05. This indicates that this study is underpowered to detect the effects of this variable. If this study were conducted again, 70 participants would be needed in each group of diagnosis for a power of 0.8 (Clark-Carter, 2024).

A retrospective power analysis for the CS variable showed a power of 0.06 given the effect size ( = 0.00048, *f* = 0.022), for alpha level 0.05. This also indicates that the study was underpowered to determine a significant result for this variable. If this study were conducted again, 400 participants would be needed per level for a power of 0.8, for effect size = 0.00048 (Clark-Carter, 2024).

**Discussion**

In the present study, the aim was to investigate the connection between perceptions of childhood and current SS, and the EI in ASD, ADHD and TDI. Findings show a significant main effect of perceived SS on EI, with those who scored high on receiving current support, also scoring high levels of EI. The main effects for diagnosis and CS were not significant, however, results show these variables to be approaching significance. There was also no significant interaction between perceived SS and current support, however it is recognised that this result is closely approaching significance and should be interpreted with caution. There were no significant interactions found between diagnosis and current perceived SS, or between diagnosis and CS. Lastly, the 3-way interaction between diagnosis, SS and CS was unable to be calculated due to reductions in sample for each condition of diagnosis, therefore we can assume a non-significance for this interaction.

The significant main effect of perceived SS on EI is in line with the research hypothesis, meaning the null hypothesis can be rejected. We can interpret that when individuals perceive their support network as positive, they are likely to have stronger emotional competency abilities. This points to the pathway of understanding that SS stands as an enhancing factor to the effects of EI (Zeider & Matthews, 2016). The current findings are consistent with previous research focussing on TDI, whereby perceiving more supportive social networks show to increase EI abilities, including enhancement of emotional recognition abilities as well as improved psychological wellbeing in TDI (Fabio and Kenny, 2012; Malinauskas & Malinauskiene, 2018). In relation to ASD and ADHD and typical experiences collectively, the current research is further in line with previous research (Alvarez‐Fernandez et al., 2017), whereby perceptions of high support are associated with an increase in interpersonal skills, that are typically seen in individuals of high emotional intelligence. The current research is meaningful in reinforcing previous findings that SS serves as a strong foundation to providing individuals with a pathway of emotional and physical encouragement and guidance (Helgeson, 2003). This concept is supported by proposals within the self-efficacy theory (Bandura, 1977), representing EI as a set of abilities that can be learned an enhanced (Munir & Azam, 2017), by means of those around us. Therefore, current findings underscore the importance of fostering supportive social environments into intervention approaches, and various settings to support neurotypical and neurodivergent individuals.

The non-significant result between diagnosis and EI indicate that the null hypothesis cannot be rejected. It can be interpreted that individual’s diagnosis alone is insufficient in its ability to determine individuals EI abilities. This finding is supported by previous research whereby Climie et al. (2019), indicated no major differences in EI related abilities, including emotional recognition, understanding abilities and communicative abilities in an ADHD sample, in comparison to TDI. In comparison, current results deviate research indicating a clear distinction of poor EI abilities and subsequent struggles to function adequately in ASD individuals, compared to TDI (Brady et al., 2014). This suggests that EI in individuals may be influenced by factors beyond diagnostic status.

Beyond the non-significant result, it is recognised that the average scores of EI, in relation to diagnosis are in the direction of research hypothesis, with TDI scoring higher on the scale of EI on average. These results hold insight into considering the diagnostic related factors, including symptom severity and accompanying mental health struggles (Kroll et al., 2024) that may shape differentiation in EI.

Considering the non-significant main effect of CS on EI, it is recognised that the research hypothesis is rejected for this variable, leading to the interpretation that alternative factors may moderate this relationship. Current findings alternate from previous research that proposes the experience of supporting parent involvement, and positive CS is associated with good emotional competencies in ASD and ADHD individuals (Montejo et al. 2019; Ostfeld-Etzion, 2016). Furthermore, these results also diverge from previous research by Debbarma and Bhattacharjee (2018), whereby care-based parenting approaches are effective in encouraging EI related competencies, as well as positive outcome for TDI. Instead, this research may be more in line with research findings by Sreedevi and Drisya (2021), who investigated the correlation between parenting styles and EI and found no significant association between these variables.

Current findings indicate contradictory findings to the concepts proposed in Goleman’s theory of EI (1995) that suggests the development of EI is influenced crucially by the role of nurture (Goleman, 1998). However, despite a lack of statistical significance, CS mean scores align with the anticipated direction of the research hypothesis. This trend may be more inclined to be understood using Caplan’s theory (1974), implying that SS functions overtime to preserve psychosocial supplies in individuals to maintain emotional wellbeing (Sarason et al., 1983). Methodological considerations may be acknowledged regarding the current research and findings by Sreedevi & Drisya (2021), both implementing the PBI (Parker et al., 1979) in measuring CS. Although deemed a useful reflective tool, participants may have found difficulty recalling past childhood experiences and emotions (Prokrity & Uddin, 2018), which may affect accuracy of recall. Therefore, it may be the case that an additional measure for CS reflection may be necessary for this sample to measure a more holistic view of CS in relation to EI. However, previous research implementing the use of these methodological techniques, have deemed that using the PBI, to be a relevant self-report scale that represents most insightful current memories of childhood attachments as an operational factor (Mallinckrodt, 1992). Overall, it can be suggested that CS in neurodiversity holds complexity, and this may exert influence through alternative pathways. Therefore, this indicates the necessity to promote emotionally responsive caregiving approaches to children, especially neurodiverse individuals.

Whilst the findings in the current research are meaningful in replicating previous findings on the impact of SS (Alvarez‐Fernandez et al., 2017), this research is not able to support the main hypothesis of an interaction between the variables on EI. Particularly within this sample, it can be interpreted that the independent variables may influence EI more independently than originally thought.

Whilst current research has non-significance for the interaction between positive perception of received SS and neurodivergent diagnosis, this study sample and purpose provides an expansion of previous research on TDI (Malinauskas & Malinauskiene, 2018; Malinauskas & Malinauskiene, 2020), through implementation of a more diverse sample. This research still provides a contribution to understanding the field of EI from a holistic standpoint. Implications of this research indicate that additional factors, including unique coping strategies and personality traits may be variables that that moderate the effects of EI (Prentice et al., 2020).

Whilst the results provide valuable insights, the current study does have some limitations. It should be acknowledged that SS is a complex phenomenon. Researcher (Weiss, 1974) suggests that SS is made up of collection of various equally meaningful systems, with distinctions between reassurance of worth and social integration received from close personal relations and more formal non-kin social networks (Felton & Berry, 1992). It is recognised that the complexity of SS requires the use of various measures to possess various dimensions of support and consider the negative aspects as well (Lincon, 2000). More negative forms of SS and support from more diverse networks may have alternative impact on EI and the psychological wellbeing of individuals (Felton & Berry, 1992). It may be that the current research restricts holistic investigation into various forms of SS, through use of the MSPSS and PBI, which focus on only on close personal relationships from parents, partners and friends. However, perceptions of SS regarding family relations and CS, remain important aspects of individuals lives (Bi et al., 2022), particularly in navigating the challenges accompanying neurodivergence and it is valuable for research to continue focus on this variable in a specific manner. Furthermore, previous research shows that the MSPSS and the PBI are well established tools (Parker et al., 1979; Zimet et al., 1988) and have been used extensively in previous research (Alvarez‐Fernandez et al., 2017; Ebrahim & Alothman, 2022; Montejo et al., 2019) to measure the variables seen in the current research. Therefore, the measures used in this study with focus on the interpersonal relations creates a useful foundation for understanding the impact of SS in an informal light.

Furthermore, research limitations note the possibility of participants in this research who may be underdiagnosed or misdiagnosed of ASD or ADHD, and instead falling into the TDI condition. It is often the case that underdiagnosis of neurodevelopmental conditions may fall reason as to why individuals are perceived as dysregulated, dysfunctional and badly behaved in their daily living, leading to the lack of recognition for the need of support to manage emotions (Goodall, 2021). Furthermore, the current study excludes participation of those with a co-occurring diagnosis of ASD and ADHD, a factor typically accompanied by heightened emotional difficulties, dysregulation and executive function struggles (Martinez et al., 2024). Therefore, accuracy of participant diagnosis may have been a variable that influenced EI scores in the current research. However, diagnostic precision was not essential to the study’s main goals and this factor does not undermine the study’s main contribution to understanding the subjective experiences of neurodivergent individuals in relation to variables. Whilst it is recognised that a research diagnosis may have been beneficial to determine accuracy of participants diagnosis, it is acknowledged that this is beyond the scope of the current study.

Another potential limitation of the current research is sampling restrictions, which may not have fully captured the diversity of the target population. There is a notable difference in sample distribution for ASD and ADHD participants compared to TDI. This factor contributes to the underrepresentation of neurodivergent groups in relation to EI (Hidayati et al., 2019) and the influence of complex interaction between variables on neurodiverse populations. Furthermore, the combination of unequal sample sizes and gender distribution [Table 1] across groups reduces comparability across populations and may contribute to caution in the statistical analysis. For example, given closely approaching significance for the interaction between SS and CS, it can be inferred that implementation of a larger and more evenly split sample size, this would induce a significant interaction between these variables. However, whilst there are restrictions relating to target sample and distributions, this sample is enough to provide exploratory analysis of the main effects of variables, as a foundation to begin exploring diagnosis, SS and CS intertwiningly.

Overall, whilst recognition of limitations, provides a baseline of considerations to guide further research, it should be acknowledged that the current research does contribute to the ever-growing investigation into EI and the recognition of impacting external factors.

In directing future research, consideration could be given to controlling for potential underdiagnosis and the accuracy of diagnosis, as well as other present conditions, to ensure increased accuracy of results.

There is a constant emphasis placed on the importance of understanding and recognising the emotional awareness and emotional management abilities of ASD and ADHD individuals, with a more intense focus, compared to TDI (Mazefsky & White, 2013). Whilst there are plenty of studies already investigating ways to support neurodiverse populations, there should be constant consideration of the ever-changing influential factors that affect people at different stages of their life. Therefore, further applied investigation into the SS related factors that affect personal competencies would support creation of more meaningfully based interventions and support techniques for young people (Mastoras et al., 2018). Additional consideration and understanding of the supportive networks and approaches towards ASD and ADHD individuals would allow for intervention to be tailored to meet the specific needs of individuals and work towards maximising the likelihood of positive outcome (Young et al., 2020).

Additionally, there remains a notable gap in research in relation to the extent in which positive and negative forms of SS and interactions affect psychological wellbeing (Lincon, 2000), both variables which are considered closely linked to EI abilities (Elegbeleye, 2021). Therefore, with future research expanding on this investigation of positive SS and its effects on improving personal development, it would allow for a more holistic overview of social interaction dimensions and their effects on individuals (Lincon, 2000).

In conclusion this research contributes to the broader understanding of factors affecting EI. This research highlights the importance of fostering supportive networks, particularly in neurodiverse populations, to improve function through emotional regulation, recognition and relationship formation abilities. This research emphasises the need for continued support for neurodiverse populations and reinforces the continued need to implement support systems as a means of enhancing emotional intelligence and improve personal wellbeing.

**References**

Akerjordet, K., Severinsson, E. (2007). Emotional intelligence: a review of the literature with specific focus on empirical and epistemological perspectives. J. Clin. Nurs. 16 (8), 1405–1416. <http://dx.doi.org/10.1111/j.1365-2702.2006.01749.x>.

Akhmedova, A., Sutcliffe, J., Greenhow, C., Fisher, M. H., & Sung, C. (2024). Social media use among neurodivergent college students: benefits, harms and implications for education. *Information and Learning Sciences*, *125*(10), 850-876.

Alvarez‐Fernandez, S., Brown, H. R., Zhao, Y., Raithel, J. A., Bishop, S. L., Kern, S. B., ... & Di Martino, A. (2017). Perceived social support in adults with autism spectrum disorder and attention‐deficit/hyperactivity disorder. *Autism Research*, *10*(5), 866-877.

American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.). <https://doi.org/10.1176/appi.books.9780890423349>

Aniemeka, O. O., Akinnawo, O. E., & Akpunne, B. C. (2020). Validation of the Schutte self-report emotional intelligence test (SSEIT) on Nigerian adolescents. *Journal of Education and Practice*, *11*(18), 177-181.

Bakola, L., & Drigas, A. (2020). Technological development process of emotional Intelligence as a therapeutic recovery implement in children with ADHD and ASD comorbidity.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, *84*(2), 191.

Beck, K. B., MacKenzie, K. T., Kumar, T., Breitenfeldt, K. E., Chang, J. C., Conner, C. M., ... & Mazefsky, C. A. (2024). “The World’s Really Not Set Up for the Neurodivergent Person”: Understanding Emotion Dysregulation from the Perspective of Autistic Adults. *Autism in Adulthood*. <https://doi.org/10.1089/aut.2023.0214>

Bi, X. B., He, H. Z., Lin, H. Y., & Fan, X. Z. (2022). Influence of social support network and perceived social support on the subjective wellbeing of mothers of children with autism spectrum disorder. *Frontiers in Psychology*, *13*, 835110. <https://doi.org/10.3389/fpsyg.2022.835110>

Bishop-Fitzpatrick, L., Mazefsky, C. A., & Eack, S. M. (2018). The combined impact of social support and perceived stress on quality of life in adults with autism spectrum disorder and without intellectual disability. *Autism*, *22*(6), 703-711.

Bradberry, T., & Greaves, J. (2009). *EI 2.0*. TalentSmart.

Brady, D. I., Saklofske, D. H., Schwean, V. L., Montgomery, J. M., McCrimmon, A. W., & Thorne, K. J. (2014). Cognitive and emotional intelligence in young adults with Autism Spectrum Disorder without an accompanying intellectual or language disorder. *Research in Autism Spectrum Disorders*, *8*(9), 1016-1023. http://dx.doi.org/10.1016/j.rasd.2014.05.009

Bucholz, E. M., Strait, K. M., Dreyer, R. P., Geda, M., Spatz, E. S., Bueno, H., ... & Krumholz, H. M. (2014). Effect of low perceived social support on health outcomes in young patients with acute myocardial infarction: results from the variation in recovery: role of gender on outcomes of young AMI patients (VIRGO) study. *Journal of the American Heart Association*, *3*(5), e001252. doi: 10.1161/JAHA.114.001252

Butalid, R. M., Estacio, K. M., Gadian, C. D., & Sisican, J. I. (2013). Analysis between the parental bonding styles and emotional intelligence of student nurses. In *Proceedings of The Annual International Conference, Syiah Kuala University-Life Sciences & Engineering Chapter* (Vol. 3, No. 1).

Caplan, G. (1974). *Support systems and community mental health: Lectures on concept development*. Behavioral publications.

Clark-Carter, D. (2024) *Quantitative Psychological Research: The Complete Student’s Companion*. 5th Edition. Oxford: Routledge.

Climie, E. A., Saklofske, D. H., Mastoras, S. M., & Schwean, V. L. (2019). Trait and ability emotional intelligence in children with ADHD. *Journal of attention disorders*, *23*(13), 1667-1674. <https://doi.org/10.1177/1087054717702216>

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. (Original work published 1988) <https://doi.org/10.4324/9780203771587>

Coplan, J., Crocker, L., Landin, J., & Stenn, T. (2021). Building supportive, inclusive workplaces where neurodivergent thinkers thrive: Approaches in managing diversity, inclusion, and building entrepreneurship in the workplace. *SAM Advanced Management Journal*, *86*(1), 21-30.

Crowell, J. A., Keluskar, J., & Gorecki, A. (2019). Parenting behavior and the development of children with autism spectrum disorder. *Comprehensive psychiatry*, *90*, 21-29.

Debbarma, R., & Bhattacharjee, A. (2018). Impact of Caring and Overprotecting Parenting Style on EI and Adjustment of School Students. *Journal of Psychosocial Research*, *13*(1).

Duede, L. A. (2023). *The Social Support Experiences of Attention-Deficit/Hyperactivity Disorder (ADHD) Adults*. Louisiana State University and Agricultural & Mechanical College.

Ebrahim, M. T., & Alothman, A. A. (2022). The reliability and validity of the multidimensional scale of perceived social support (MSPSS) in mothers of children with developmental disabilities in Saudi Arabia. *Research in Autism Spectrum Disorders*, *92*, 101926. <https://doi.org/10.1016/j.rasd.2022.101926>

Elegbeleye, A. O., Nnamdi, E. C., Agoha, B. C., & Olowookere, E. I. (2021). The Role of emotional intelligence and Perceived Social Support in Psychological Wellbeing of University Students. *Nigerian Journal of Clinical Psychology*, *11*(1&2), 10-19.

Enns, A., Eldridge, G. D., Montgomery, C., & Gonzalez, V. M. (2018). Perceived stress, coping strategies, and emotional intelligence: A cross-sectional study of university students in helping disciplines. *Nurse education today*, *68*, 226-231.

Fabio, A. D., & Kenny, M. E. (2012). Emotional intelligence and perceived social support among Italian high school students. *Journal of career development*, *39*(5), 461-475.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G\* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, *41*(4), 1149-1160.

Felton, B. J., & Berry, C. A. (1992). Do the sources of the urban elderly's social support determine its psychological consequences?. *Psychology and Aging*, *7*(1), 89. <https://doi.org/10.2307/249075>

Gallagher, E. N., & Vella-Brodrick, D. A. (2008). Social support and emotional intelligence as predictors of subjective well-being. *Personality and individual differences*, *44*(7), 1551-1561.

Gargaro, B. A., Rinehart, N. J., Bradshaw, J. L., Tonge, B. J., & Sheppard, D. M. (2011). Autism and ADHD: how far have we come in the comorbidity debate?. *Neuroscience & Biobehavioral Reviews*, *35*(5), 1081-1088.

Goleman, D. (1995). Emotional intelligence New York: Bantam Books.

Goleman, D. (1998). *Working with* emotional intelligence. Bantam.

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.

Goodall, E. (2021). *Facilitating interoceptive awareness as a self-management and self-regulation tool to increase engagement in learning and education* (Doctoral dissertation, University of Southern Queensland).

Goodall, E. (2021). *Facilitating interoceptive awareness as a self-management and self-regulation tool to increase engagement in learning and education* (Doctoral dissertation, University of Southern Queensland).

Gülaçtı, F. (2010). The effect of perceived social support on subjective well-being. *Procedia-Social and behavioral sciences*, *2*(2), 3844-3849. doi:10.1016/j.sbspro.2010.03.602

Hedley, D., Uljarević, M., Foley, K. R., Richdale, A., & Trollor, J. (2018). Risk and protective factors underlying depression and suicidal ideation in autism spectrum disorder. *Depression and anxiety*, *35*(7), 648-657. <https://doi.org/10.1002/da.22759>

Helgeson, V. S. (2003). Social support and quality of life. *Quality of life research*, *12*(Suppl 1), 25-31.

Hidayati, D. L., Purwandari, E., Ridho, M., & Nuril, H. S. (2024). Gratitude as a Mediator of the Relationship Between emotional intelligence and Social Support on Psychological Wellbeing Among People Living with Human Immunodeficiency Virus (HIV). *Islamic Guidance and Counseling Journal*, *7*(1), 1-23.

Hirvikoski, T., & Blomqvist, M. (2015). High self-perceived stress and poor coping in intellectually able adults with autism spectrum disorder. *Autism*, *19*(6), 752-757.

Howes, S. S. (2023). emotional intelligence in autistic adults: A review with considerations for employers. *Sustainability*, *15*(9), 7252.

Jaisle, E. M., Groves, N. B., Black, K. E., & Kofler, M. J. (2023). Linking ADHD and ASD symptomatology with social impairment: The role of emotion dysregulation. *Research on child and adolescent psychopathology*, *51*(1), 3-16.

Kaur, G., & Katevarapu, S. (2022). Emotional intelligence and coping styles among neurodiverse population. *Journal of Education: Rabindra Bharati University*, 24(1), 46–59

Kong, F., Gong, X., Sajjad, S., Yang, K., & Zhao, J. (2019). How is emotional intelligence linked to life satisfaction? The mediating role of social support, positive affect and negative affect. *Journal of Happiness Studies*, *20*, 2733-2745.

Kroll, E., Lederman, M., Kohlmeier, J., Kumar, K., Ballard, J., Zant, I., & Fenkel, C. (2024). The positive impact of identity-affirming mental health treatment for neurodivergent individuals. *Frontiers in Psychology*, *15*, 1403129. <https://doi.org/10.3389/fpsyg.2024.1403129>

Kuijper, S. J., Hartman, C. A., Bogaerds-Hazenberg, S., & Hendriks, P. (2017). Narrative production in children with autism spectrum disorder (ASD) and children with attention-deficit/hyperactivity disorder (ADHD): Similarities and differences. *Journal of abnormal psychology*, *126*(1), 63. <https://psycnet.apa.org/doi/10.1037/abn0000231>

Lawson, R. A., Papadakis, A. A., Higginson, C. I., Barnett, J. E., Wills, M. C., Strang, J. F., ... & Kenworthy, L. (2015). Everyday executive function impairments predict comorbid psychopathology in autism spectrum and attention deficit hyperactivity disorders. *Neuropsychology*, *29*(3), 445. <http://dx.doi.org/10.1037/neu0000145>

Li, B. (2024). Early intervention facilitates neuropsychological development in children with autism and attention deficit hyperactivity disorder. *Journal of Clinical and Nursing Research, 8*(2). <https://ojs.bbwpublisher.com/index.php/JCNR/article/view/8203>

Lincoln, K. D. (2000). Social support, negative social interactions, and psychological well-being. *Social Service Review*, *74*(2), 231-252.

Malinauskas, D. R., & Malinauskiene, V. (2018). The mediation effect of perceived social support and perceived stress on the relationship between emotional intelligence and psychological wellbeing in male athletes. *Journal of human kinetics*, *65*, 291.

Malinauskas, R., & Malinauskiene, V. (2020). The relationship between emotional intelligence and psychological well-being among male university students: The mediating role of perceived social support and perceived stress. *International journal of environmental research and public health*, *17*(5), 1605.

Mallinckrodt, B. (1992). Childhood emotional bonds with parents, development of adult social competencies, and availability of social support. *Journal of Counseling Psychology*, *39*(4), 453.

Mannarini, S., Balottin, L., Palmieri, A., & Carotenuto, F. (2018). Emotion regulation and parental bonding in families of adolescents with internalizing and externalizing symptoms. *Frontiers in psychology*, *9*, 1493

Martinez, S., Stoyanov, K., & Carcache, L. (2024). Unraveling the spectrum: overlap, distinctions, and nuances of ADHD and ASD in children. *Frontiers in Psychiatry*, *15*, 1387179. https://doi.org/10.3389/fpsyt.2024.1387179

Mastoras, S. M., Saklofske, D. H., Schwean, V. L., & Climie, E. A. (2018). Social support in children with ADHD: An exploration of resilience. *Journal of attention disorders*, *22*(8), 712-723.

Mazefsky, C. A., & White, S. W. (2013). Emotion regulation: Concepts & practice in autism spectrum disorder. *Child and adolescent psychiatric clinics of North America*, *23*(1), 10-1016.

Metaj-Macula, A. (2017). The relationship between emotional intelligence and perceived social support. *Journal of educational and social research*, *7*(1), 168-172.

Miniscalco, C., Hagberg, B., Kadesjö, B., Westerlund, M., & Gillberg, C. (2007). Narrative skills, cognitive profiles and neuropsychiatric disorders in 7–8‐year‐old children with late developing language. *International journal of language & communication disorders*, *42*(6), 665-681. <https://doi.org/10.1080/13682820601084428>

Montejo, J. E., Durán, M., del Mar Martínez, M., Hilari, A., Roncalli, N., Vilaregut, A., ... & Ramos-Quiroga, J. A. (2019). Family functioning and parental bonding during childhood in adults diagnosed with ADHD. *Journal of attention disorders*, *23*(1), 57-64.

Munir, M., & Azam, R. I. (2017). EI and employee performance: An intervention based experimental study. *Journal of Business & Economics*, *9*(2), 1-19.

Nilsen, W., Karevold, E., Røysamb, E., Gustavson, K., & Mathiesen, K. S. (2013). Social skills and depressive symptoms across adolescence: Social support as a mediator in girls versus boys. *Journal of adolescence*, *36*(1), 11-20.

Ostfeld-Etzion, S., Feldman, R., Hirschler-Guttenberg, Y., Laor, N., & Golan, O. (2016). Self-regulated compliance in preschoolers with autism spectrum disorder: The role of temperament and parental disciplinary style. *Autism*, *20*(7), 868-878. <https://doi.org/10.1177/1362361315615467>

Pandey, S. (2024). Emotional intelligence. *Machine and Deep Learning Techniques for Emotion Detection*, 61.

Parker, G., Tupling, H., and Brown, L.B. (1979) A Parental Bonding Instrument. British Journal of Medical Psychology, 1979, 52, 1-10.

Powell, V., Riglin, L., Ng-Knight, T., Frederickson, N., Woolf, K., McManus, C., ... & Rice, F. (2021). Investigating friendship difficulties in the pathway from ADHD to depressive symptoms. Can parent–child relationships compensate?. *Research on Child and Adolescent Psychopathology*, *49*, 1031-1041. https://doi.org/10.1007/s10802-021-00798-w

Prentice, C., Zeidan, S., & Wang, X. (2020). Personality, trait emotional intelligence and coping with COVID 19 measures. *International Journal of Disaster Risk Reduction*, *51*, 101789.

Prokrity, T. S., & Uddin, M. K. (2018). Bonding with parents and children's well-being: resilience and social support in-between. *Bangladesh Journal of Psychology*, *21*, 69-80.

Rahimi, C., & Shojaei, M. A. (2019). Studying the emotional intelligence and emotion regulation skills in adults with attention-deficit/hyperactivity disorder (ADHD). *International Journal of Applied Behavioral Sciences*, *4*(4), 40-49 <https://doi.org/10.22037/ijabs.v4i4.22308>

Rebalde, E. (2022). Parental Bonding and Its Effect on Students' emotional intelligence, Self-Determination and Self-Esteem. *IMCC Journal of Science*, *2*(2), 43-54.

Renty, J. O., & Roeyers, H. (2006). Quality of life in high-functioning adults with autism spectrum disorder: The predictive value of disability and support characteristics. Autism, 10(5), 511-524.

Rollnik-Sadowska, E., & Grabińska, V. (2024). Managing neurodiversity in workplaces: a review and future research agenda for sustainable human resource management. *Sustainability*, *16*(15), 6594.

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, cognition and personality*, *9*(3), 185-211.

Samuel, R., Osman, I., & Lopez, G. P. (2023). Effect of Perceived Social Support on emotional intelligence of Malaysian Service Sector Employees. *Journal of ASIAN Behavioural Studies*, *8*(24), 19-37.

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: the social support questionnaire. *Journal of personality and social psychology*, *44*(1), 127. <https://psycnet.apa.org/doi/10.1037/0022-3514.44.1.127>

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and individual differences*, *25*(2), 167-177.

Sethi, P. (2024). *A Comparative Analysis of Emotion Recognition Among Neurodivergent and Typically Developing Children* (Master's thesis, Tufts University).

Siller, M., & Sigman, M. (2008). Modeling longitudinal change in the language abilities of children with autism: parent behaviors and child characteristics as predictors of change. *Developmental psychology*, *44*(6), 1691.

Sillick, T. J., & Schutte, N. S. (2006). Emotional intelligence and self-esteem mediate between perceived early parental love and adult happiness. *E-Journal of Applied Psychology*, *2*(2), pp-38.

Sreedevi, T. S., & Drisya, G. (2021). Correlation between parenting styles and emotional intelligence among adolescents. *Asian Journal of Nursing Education and Research*, *11*(3), 345-350.

Sultan, S., Rafiq, S., & Kanwal, S. (2019). Parental bonding and social adjustment: Evidence from the mediation by EI. *UW Journal of Social Sciences*, *2*(2), 32-45.

Thapar, A., Livingston, L. A., Eyre, O., & Riglin, L. (2023). Practitioner Review: Attention‐deficit hyperactivity disorder and autism spectrum disorder–the importance of depression. *Journal of Child Psychology and Psychiatry*, *64*(1), 4-15. <https://doi.org/10.1111/jcpp.13678>

Trevisan, D. A., Abel, E. A., Brackett, M. A., & McPartland, J. C. (2021). Considerations about how emotional intelligence can be enhanced in children with autism spectrum disorder. In *Frontiers in Education* (Vol. 6, p. 639736). Frontiers Media SA.

Weiss, R. (1974). The provisions of social relationships. *Doing unto others*, 17-26.

Young, S., Hollingdale, J., Absoud, M., Bolton, P., Branney, P., Colley, W., ... & Woodhouse, E. (2020). Guidance for identification and treatment of individuals with attention deficit/hyperactivity disorder and autism spectrum disorder based upon expert consensus. *BMC medicine*, *18*, 1-29.

Zeidner, M., & Matthews, G. (2016). Ability and mental health: Social support as a mediator. *Personality and individual differences*, *99*, 196-199.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of personality assessment*, *52*(1), 30-41.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of personality assessment*, *55*(3-4), 610-617.

**Appendices**

Appendix A: Information Sheet

|  |  |
| --- | --- |
| **INFORMATION SHEET**    **A quantitative study investigating the perception of social support and the EI of neurodivergent individuals.** |  |
| **Eleanor Hanson**  **H014190l@student.staffs.ac.uk** | **Dr Justine Drakeford**  **j.drakeford@staffs.ac.uk** |

A close up of a logo

Description automatically generated

**INVITATION PARAGRAPH**

I would like to invite you to participate in this research project, which forms part of my undergraduate psychology degree at University of Staffordshire. The research will be conducted by Eleanor Hanson. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully.

**What is the purpose of the study?**

I am conducting a study looking at the relationship between individuals' perception of their social support, received currently and from their childhood, and the effect this has on the EI of typical and neurodivergent individuals.

**Who has given approval for this study?**

Approval for this study has been granted by the University of Staffordshire Psychology Department Psychology Ethics Committee.

**TAKING PART**

**Why have I been invited to take part?**

I am recruiting participants over 18 years of age to take part in this study. Participants should also meet the following criteria:

* Have a diagnosis of *either* ASD *or* ADHD or have no neurodivergent diagnosis.
* Have grown up with contact with both mother and father and be able to answer questions about these relationships.
* Be comfortable answering questions about the social support they receive and their emotions.

**What will happen if I take part?**

I am asking you to take part in a study lasting approximately 15-20 minutes. This will involve participants answering questions from a scale which looks at support received during childhood from both parents. This will be followed by a scale that measures opinions of current received support

And finally, participants will be asked to complete a scale of EI.

The study/experiment will take place online.

**Do I have to take part?**

Participation is completely voluntary. You should only take part if you want to and choosing not to take part will not disadvantage you in anyway. Once you have read this information sheet, please feel free to ask any questions that will help you decide about taking part. If you decide to take part, we will ask you to sign a consent form.

**Incentives**

If you are an undergraduate psychology student at University of Staffordshire, you will receive 2 SONA credits for taking part in the study.

**What are the possible risks of taking part?**

There are no risks to taking part in the study.

**What if I am upset by anything during the course of the study?**

If this happens you might like to take a break or, if you prefer, you can withdraw from the study at any point. If you decide to withdraw, you will be shown a copy of the debriefing sheet, which contains information about sources of support you can access if there is anything you wish to talk about in confidence.

**What are the possible benefits of taking part?**

Aside from any incentives discussed above, there are no direct benefits to you as a participant. However, the research may help us to better understand the importance of providing strong social support and interventions to neurodivergent individuals to influence the positive of good EI abilities that affect everyday life skills and wellbeing.

**What if I change my mind about taking part?**

You are free to withdraw at any point of the study, without having to give a reason. Withdrawing from the study will not affect you in any way.

You can also withdraw your data from the study after you have finished participating, up until **1st March 2025,** after which withdrawal of your data will no longer be possible as the data will already have been processed. To withdraw from the study, please email the researcher using the contact details provided and referencing your unique participant code.

If you choose to withdraw from the study, we will not retain any information you have provided us.

**What if I don’t want to answer any particular questions?**

You are free to skip any questions you would prefer not to answer, without penalty.

**DATA HANDLING AND CONFIDENTIALITY**

**Will the information I give you be kept confidential?**

The information obtained will be treated with the strictest confidence throughout the study and the data will be stored safely in a secure location to which only the researcher and their supervisor has access. Your data will be processed in accordance with data protection law and will comply with the General Data Protection Regulation 2018 (GDPR).

**Data Protection Statement**

The data controller for this project will be University of Staffordshire. The University will process your personal data for the purpose of the research outlined above. The legal basis for processing your personal data for research purposes under data protection law is a ‘task in the public interest’. You can provide your consent for the use of your personal data in this study by completing the consent form that will be provided to you.

**Who will have access to my data?**

Only the researcher and the researcher’s supervisor will have access to the raw data. You have the right to access information held about you. Your right of access can be exercised in accordance with the General Data Protection Regulation. You also have other rights including rights of correction, erasure, objection, and data portability. Questions, comments, and requests about your personal data can also be sent to the University of Staffordshire Data Protection Officer. If you wish to lodge a complaint with the Information Commissioner’s Office, please visit [www.ico.org.uk](http://www.ico.org.uk/)

**Who will see the finished report?**

All data in the finished report will be presented in the form of group statistics. The final report will be seen by the researcher’s supervisor and a second marker from the Psychology department, and possibly by an external examiner. In addition, the completed report may also be made available to future University of Staffordshire students for teaching/reference purposes.

**What will happen to my responses to the study?**

All data will be kept in secure storage (to which only the researcher has access) for ten years, according to departmental policy, and it will be destroyed after that.

**What will happen to the results of the study?**

The results of the study will be disseminated in the final written report and in a student conference presentation. There is a possibility that results might be disseminated more widely, for example at a research conference or in an article published in a research journal. If the research is written up for academic journal publication your anonymised data may be stored permanently in an online research data repository.

**FURTHER QUESTIONS**

**Is there anyone I can talk to about the study before I take part?**

You can contact me directly on the details provided at the top of this form. If you wish to talk to someone else about my study before taking part, please feel free to contact my project supervisor (contact details also available at the top of this form).

**What if I have further questions, or if something goes wrong?**

If this study has harmed you in any way, or if you wish to make a complaint about the conduct of the study, you can contact the study supervisor or the Chair of the University of Staffordshire Ethics Committee for further advice and information:

Ethics Committee  
Research, Innovation and Impact Services  
University of Staffordshire  
Cadman Building  
College Road  
Stoke-on-Trent  
ST4 2DE

[ethics@staffs.ac.uk](mailto:ethics@staffs.ac.uk)

**I know a friend who may be interested; can they participate in your study?**

Yes, as long as your friend meets the criteria mentioned above. Your friend should access the study using the same link, or by contacting the researcher for any questions.

**If you have any further questions, please do not hesitate to contact me Thank you for your time.**

**Thank you for reading this information sheet and for considering taking part in this research.**

Appendix B: Consent form

A close up of a logo

Description automatically generated

**CONSENT FORM**

|  |  |  |
| --- | --- | --- |
| **Eleanor Hanson**  **H014190l@student.staffs.ac.uk** | **Dr Justine Drakeford**  **j.drakeford@staffs.ac.uk** | |
| I am over 18 years of age, and I voluntarily agree to participate in a research project conducted as part of a psychology undergraduate degree by Eleanor Hanson, an Undergraduate Psychology student at the University of Staffordshire. | | **Yes/No** |
| I understand that I am being asked to participate in a study lasting approx. 15-20 minutes and I will be asked to complete three scales: the parental bonding instrument, the multidimensional scale of perceived social support and the Schutte's EI scale. | | **Yes/No** |
| I understand that, if I wish, I may withdraw from participating at any time and my data will be destroyed. I have been informed that withdrawal after 1st March 2025, will not be possible. | | **Yes/No** |
| I understand that I will be fully protected in accordance with the Data Protection Act of 2018, and in compliance with the British Psychological Society ethical guidelines, and that any personal details will be kept confidential. | | **Yes/No** |
| I understand that in the case that a report is published based on this study, the fully anonymised data may be made available for the use of other researchers for an indefinite period of time. Otherwise, they will be kept until ten years after the article has been published, and then destroyed. | | **Yes/No** |
| I understand that any personal details will be anonymised in any report based on this study and if the research is written up for academic journal publication my anonymised data may be stored permanently in an online research data repository. | | **Yes/No** |

If you have any further questions about this study, please contact the researcher or the Project Supervisor (details above).

**[Unique Identifier].**

Because we are not collecting your name or other identifying information, we need a way to identify your data if you wish to withdraw it after participation. Please enter a 5-digit code made up of the last two digits of your Surname and the last 3 digits of your phone number. Please make a note of this, If you wish to withdraw your data in future, you must provide this code.

|  |
| --- |
|  |

Appendix C: Debrief form

A close up of a logo

Description automatically generated

**Participant Debrief**

**[Project Title]: A quantitative study investigating the**

**A quantitative study investigating the perception of social support and the EI of neurodivergent individuals.**

**Eleanor Hanson**

**H014190l@student.staffs.ac.uk**

**Dr Justine Drakeford**

**j.drakeford@staffs.ac.uk**

Thank you for taking part in this study. The purpose of this study was to look at the relationship between individuals' perception of their social support, received currently and from their childhood, and the effect this has on the EI of typical and neurodivergent individuals. The research questions for this study were ‘Does having a neurodivergence affect EI?’, ‘Does perception of current support affect EI?’, ‘Does the perception of support received form parents in childhood affect EI?’.

For more detailed explanations, or if you wish to know the results of the study, please contact the researcher using the contact details above.

Your details will be kept confidential at all times, and complete anonymity will be maintained. Raw data will be kept on University Sharepoint system, which will only be accessible to me and academic staff. Raw data will be destroyed after ten years. In the case that a report is published based on this study, the fully anonymised data may be made available for the use of other researchers for an indefinite period of time. Otherwise, they will be kept by University of Staffordshire until ten years after the article has been published and then destroyed.

If you wish to withdraw your data you need to contact the researcher using the code you provided earlier, before two weeks after completion of the study. No other information is required, and you will not be asked to provide a reason.

If you have been affected by any of the issues raised in this study, and would like to talk to someone in confidence about it, you may wish to contact the following organisations:

The University of Staffordshire student support team: student-wellbeing@staffs.ac.uk

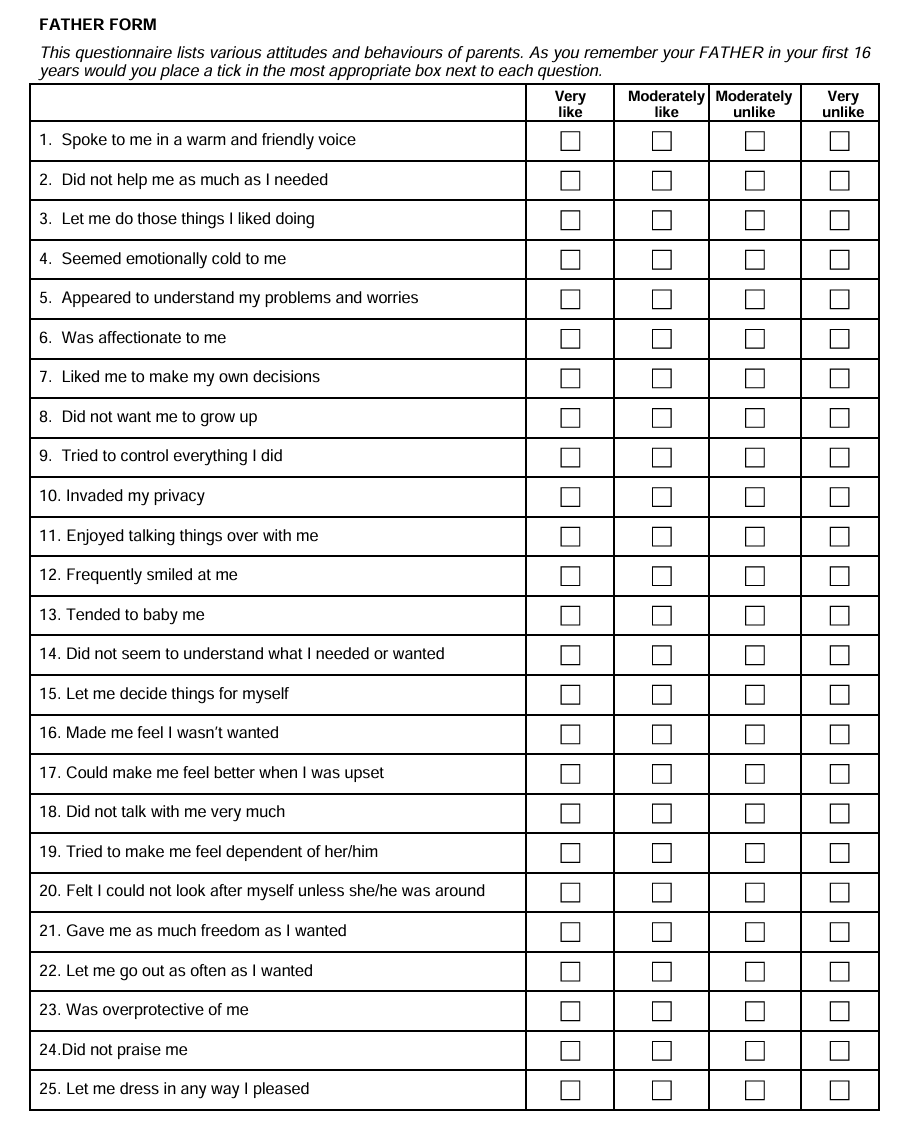
The Samaritans Tel: 116 123 (24 hours every day)

Thank you again for your participation.

Appendix D: Parental Bonding Instrument (PBI)

A checklist with black lines

AI-generated content may be incorrect.



Appendix E: Multidimensional scale of perceived social support (MSPSS)

A paper with text on it

AI-generated content may be incorrect.

Appendix F: The Schutte self-report EI test (SSEIT)

A survey form with many circles

AI-generated content may be incorrect.

A close-up of a survey

AI-generated content may be incorrect.

Appendix G: SPSS output

A table of numbers with text

AI-generated content may be incorrect.

A screenshot of a phone

AI-generated content may be incorrect.

*Note: The mean and standard deviation of the age of participants and the frequency of age ranges.*

*A screenshot of a computer screen

AI-generated content may be incorrect.*

*A table with numbers and numbers

AI-generated content may be incorrect.*

*Note: Descriptive statistics of variables*

*A table with numbers and text

AI-generated content may be incorrect.*

A screenshot of a computer

AI-generated content may be incorrect.

*Note: Descriptive statistics of EI based on diagnosis type variable*

*A graph of a patient's mental health

AI-generated content may be incorrect.*

A graph of a normal distribution

AI-generated content may be incorrect.

A graph of a patient's performance

AI-generated content may be incorrect.

*A diagram of a diagram with blue squares

AI-generated content may be incorrect.*

*Note: Distributions of EI in relation to diagnosis*

*A graph with numbers and text

AI-generated content may be incorrect.*

A screenshot of a data

AI-generated content may be incorrect.

*Note: Descriptive statistics of EI in relation to high or low parental bonding scores.*

*A graph of a diagram

AI-generated content may be incorrect.*

A graph of a person with blue lines

AI-generated content may be incorrect.

A graph of blue boxes and black lines

AI-generated content may be incorrect.

*Note: Distributions of EI scores in relation to high or low scores og parental bonding*

*A table with numbers and text

AI-generated content may be incorrect.*

A screenshot of a computer

AI-generated content may be incorrect.

*Note:*

*A diagram of a normal distribution

AI-generated content may be incorrect.*

A graph of a person with a blue line

AI-generated content may be incorrect.

A graph of a person with a blue line

AI-generated content may be incorrect.

A diagram of a graph

AI-generated content may be incorrect.

*Note: Distributions of EI scores in relation to support levels (High, medium, low).*

*Table representing the Skewness and Kurtosis value for variables. Used to check for normal distribution.*

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Skewness** | **Kurtosis** |
| **Diagnosis** | **ASD** | -0.33 | -0.85 |
|  | **ADHD** | -0.18 | -0.15 |
|  | **No diagnosis** | -0.52 | -0.94 |
| **Support level** | **Low** | -0.27 | -0.33 |
|  | **Medium** | -0.73 | 0.30 |
|  | **High** | -0.58 | -0.96 |
| **Parent bonding** | **Low** | -0.43 | -0.40 |
|  | **High** | -0.47 | 0.02 |

*A screenshot of a graph

AI-generated content may be incorrect.*

A screenshot of a table

AI-generated content may be incorrect.

A screenshot of a table

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

*Note: Z-scores for diagnosis groups- used to determine outliers outside of the -3<x<+3 threshold*

*A screenshot of a statistics

AI-generated content may be incorrect.*

A screenshot of a table

AI-generated content may be incorrect.

*A screenshot of a table

AI-generated content may be incorrect.*

*Note: Z-scores for parental bonding groups- used to determine outliers outside of the -3<x<+3 threshold*

*A screenshot of a statistics

AI-generated content may be incorrect.*

A screenshot of a data

AI-generated content may be incorrect.

A screenshot of a data

AI-generated content may be incorrect.A screenshot of a computer

AI-generated content may be incorrect.

*Note: Z-scores for social support groups- used to determine outliers outside of the -3<x<+3 threshold*

*A screenshot of a medical survey

AI-generated content may be incorrect.*

A screenshot of a computer

AI-generated content may be incorrect.

*Note: Univariate analysis of variance*

A screenshot of a test results

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

*Note: Tests of between-subjects effects for three-way ANOVA. Analysis for main effects of independent variables and analysis of interactions between variables.*

*A screenshot of a graph

AI-generated content may be incorrect.*

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a graph

AI-generated content may be incorrect.

*Note: Descriptive statistics for main effects.*

*A screenshot of a data

AI-generated content may be incorrect.*

A screenshot of a medical report

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

*Note: Descriptive statistics for two-way interactions*

*A screenshot of a data

AI-generated content may be incorrect.*

*Note: Descriptives table for the three-way ANOVA. Some conditions have not been assigned participants due to limited sample numbers.*

*A graph on a white sheet

AI-generated content may be incorrect.*

A graph on a white sheet

AI-generated content may be incorrect.

A graph on a white sheet

AI-generated content may be incorrect.

*Note: Plots comparing the marginalised means of variables*

*A screenshot of a medical survey

AI-generated content may be incorrect.*

*Note: Total count of participants in each condition in relation to gender. Shows higher counts of female participants.*

A screenshot of a medical survey

AI-generated content may be incorrect.

*Note: table shows mean and standard deviation, and age range of participants age for each diagnostic group.*

A screenshot of a medical report

AI-generated content may be incorrect.

*Note: Custom table presenting the means and standard deviation of all conditions*