Role of Emotional Intelligence in Predicting Academic Achievement in Children with Attention-Deficit/Hyperactivity Disorder

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Abstract

Social and emotional competency is important for academic success (Sakolske, Austin, & Minski, 2003). However, the literature is scarce in regards to emotional intelligence (EI) as predictors of academic achievement in children with ADHD. The current study examined the influence of trait and ability-based EI on academic achievement. Results found that EI predicted between 11.4% to 48.8% of the differences in academic performance, thus emphasizing the importance of socio-emotional support for children with ADHD.

Background

• ADHD is a common neurodevelopmental disorder in children, with an estimated prevalence of 5% (Brauël & Lacourse, 2012)
• Children with ADHD along with their core symptoms of inattention, hyperactivity and impulsivity, also face challenges with academics (Wolraich, 2005) and emotion regulation (Sinzig, Morsch, & Lehmkühl, 2008).
• While previous studies have investigated many factors affecting academic performance in children with ADHD, much less focus has been given to understand the relations between social-emotional ability and academic achievement.

Emotional Intelligence

• Emotional intelligence (EI) is defined as the ability or skill that allows one to recognize, assess, and manage emotions (Serra, 2009).
• Trait based EI and Ability based EI are two primary frameworks
  • Trait EI: Focuses on the individual’s ability to respond to a situation (Doing; Bar-On, 1997)
  • Ability-based EI: Focuses on the what the individual knows (Knowledge; Mayer, Salovey, & Caruso 2002)
• Parker et al. (2004) found academic success to be significantly associated with most EI dimensions in typically developing (TD) children.

Research Question 1

How does trait-based and ability-based emotional intelligence predict academic achievement in children with ADHD?
1. What are the relations between trait and ability based EI with academic achievement?
2. What is the predictive power of the models?

Results

• No significant correlations were found with the EQ-I YV(S) measure (trait-based EI) and were not included in the multiple regression analysis (Table 1).
• Significant proportion of the total variation of reading scores was predicted by ability-based EI, F(4, 37) = 3.028, p < 0.05, r 2 = 0.268
• 48.8% of the variance in math scores was accounted for by ability-based EI, F(4, 36) = 7.630, p < 0.01, r 2 = 0.488, (Figure 1)
• 11.4% of total variation in spelling scores was predicted by ability-based EI, F(1,37) = 4.623, p < 0.05, r 2 = 0.114.
• 28.9% of the total variation in overall achievement scores was predicted by ability-based EI, F(4, 36) = 3.244, p < 0.05, r 2 = 0.289 (Figure 3)

Discussion

• Ability-based EI had stronger relations with academic achievement than trait-based EI in children with ADHD
• Ability-based EI had the strongest predictive power for math related achievement
  • Weakest predictive power for writing related achievement
• These results expand our current understanding of the EI abilities in children with ADHD
• Provides evidence to support that children who are able to apply their emotional knowledge are able to do better academically, especially in math related tasks.

Implication/Future Direction

• This is first study to investigate the predictability of EI in academic achievement in children with ADHD
• Emphasizes the importance of socio-emotional interventions in schools.
• School psychologists involved in EI related interventions need to focus more on the application of EI knowledge and not just rote teaching of knowledge.
• Future research can incorporate school grades such as grade point averages (GPA) to supplement standardized scores in understanding the predictive role of EI.

Methods

• Participants:
  • 52 children with ADHD
  • Age 9-12 years old (M = 9.99 years, SD = 1.15)
• Self-Report Questionnaires
  • Mayer-Salovey-Caruso Emotional Intelligence Test, Youth Research Version (MSCEIT-YR; Mayer, Salovey & Caruso, 2014)
  • Bar-On Emotional Quotient Inventory: Youth Version - short (EQ-I YV(S); Bar-On & Parker, 2000)
  • Brief Academic battery from Woodcock Johnson III-Test of achievement
• Data Analysis
  • Pearson Correlation was conducted separately with the four measures of academic achievement (WJ Ach) with measures of EI (Bar-On and MSCEIT)
  • Multiple Linear Regressions were conducted

Table 1

<table>
<thead>
<tr>
<th>Measures</th>
<th>Math (applied problems)</th>
<th>Spelling</th>
<th>Reading</th>
<th>Brief Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceiving Emotions</td>
<td>.65**</td>
<td>.26</td>
<td>.19</td>
<td>.37</td>
</tr>
<tr>
<td>Facilitating thoughts</td>
<td>.16</td>
<td>.22</td>
<td>.36*</td>
<td>.24</td>
</tr>
<tr>
<td>Understanding Emotions</td>
<td>.50**</td>
<td>.34*</td>
<td>.49**</td>
<td>.47**</td>
</tr>
<tr>
<td>Managing Emotions</td>
<td>.30</td>
<td>.07</td>
<td>.18</td>
<td>.14</td>
</tr>
<tr>
<td>Experiential EI</td>
<td>.46**</td>
<td>.30</td>
<td>.39*</td>
<td>.38*</td>
</tr>
<tr>
<td>Strategic EI</td>
<td>.46**</td>
<td>.21</td>
<td>.37*</td>
<td>.34*</td>
</tr>
<tr>
<td>Total EI</td>
<td>.52**</td>
<td>.28</td>
<td>.42**</td>
<td>.40*</td>
</tr>
</tbody>
</table>

Note: All correlations are significant at p < 0.05.

Table 2

<table>
<thead>
<tr>
<th>Measures</th>
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<th>Spelling</th>
<th>Reading</th>
<th>Brief Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal Scale</td>
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<td>.32*</td>
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<td>.12</td>
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<tr>
<td>Interpersonal Scale</td>
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<td>Management Scale</td>
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<td>.01</td>
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<td>Adaptability Scale</td>
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<td>-.12</td>
<td>.07</td>
<td>-.18</td>
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<tr>
<td>Emotional Quotient</td>
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<td>.12</td>
<td>.12</td>
<td>-.05</td>
</tr>
</tbody>
</table>

Note: All correlations are significant at p < 0.05.

Figure 1

Predictive power of EI subscales with Reading Achievement

Figure 2

Predictive power of EI subscales with Math Achievement

Figure 3

Predictive power of EI subscales with Brief Achievement

References

Bar-On, R. (1997). Bar-On Emotional Quotient Inventory: Youth Version - short (EQ-I YV(S)).multiple linear regressions were conducted.