Vision Impairment: the Impact on Social Cognition and Social Ability

Associate Professor Carolyn Palmer
AM; PhD
Flinders University
South Australia
Introduction

Vision plays a role in the development of early skills for social cognition which involve:

- perspective-taking and joint-attention behaviors.
- perceiving and interpreting the ideas and sensitivities that underlie what people say and do.¹
Impact of Vision Impairment

• **Decreased visual acuity:**
  – restricts understanding of the context of social interaction
  – restricts ability to choose appropriate initiations or responses.

• **May also affect**
  – ability to process and act upon other information such as verbalisations,
  – ability to process how peers interact with each other and how they play with toys.

• **Nystagmus**
  – affects the ability to make and maintain eye contact.
The effects of severe vision impairment on children’s social competence, social ability and involvement in peer relationships

• This study reports on an aspect of the findings of a much larger study;

• **Focus:**
  – children and youth with Albinism
  – relationship between their vision loss, social information processing, and patterns of social behaviour.

• **Parallel investigation:** students with vision impairment and those with no vision loss
Social Cognition

• **Is concerned with**
  – understanding social relationships
  – social ability
  – social competence
  – ability to conceptualise others
  – understanding the thoughts, emotions, intentions, and viewpoints of others in social situations

• It is an important mediator in the socialisation process
• It underpins how we process social cues
Social Ability

Social ability is about how individuals make social decisions and how they solve social problems. It represents:

- The integration of socio-cultural knowledge
- Cognitive development
- Behavioural experiences

(Andrews & Lupart, 1993).
The problem

- Severe vision loss impacts on the way children interact with peers
- Loss of vision impacts on
  - processing visual cues
  - Observing the behaviour of others
  - Interpreting subtle social nuances
  - Incidental social learning
Aim of the study

• To investigate the social cognition and social ability of children with vision impairment and how they process social clues in various situations
Research Questions

• What is the social understanding of children and youth with vision impairment?
• How do they make social decisions and solve social problems
• Do that say things that fit inappropriately with what others say?
• Do that do things that fit inappropriately with what others do?
• Do they show inappropriate feelings?
Method: Qualitative and quantitative

- Social Emotional Dimensional Scale (SEDS)
- Parent interviews
- Teacher interviews
- Observation
Participants

- Ten young learners with albinism
- Seven with vision impairment
- Nine students with no vision problems
- Students were aged between 8 and 16
- Parents
- Teachers
### Participants with albinism

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Acuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don</td>
<td>M</td>
<td>10</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Pam</td>
<td>F</td>
<td>11</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Toni</td>
<td>F</td>
<td>11</td>
<td>4/60, 4/60</td>
</tr>
<tr>
<td>Sam</td>
<td>M</td>
<td>14</td>
<td>6/24, 6/24</td>
</tr>
<tr>
<td>James</td>
<td>M</td>
<td>9</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Jason</td>
<td>M</td>
<td>13</td>
<td>6/60, 6/24</td>
</tr>
<tr>
<td>Dennis</td>
<td>M</td>
<td>11</td>
<td>6/36, 6/36</td>
</tr>
<tr>
<td>Trevor</td>
<td>M</td>
<td>11</td>
<td>6/24, 6/24</td>
</tr>
<tr>
<td>Sally</td>
<td>F</td>
<td>8</td>
<td>6/24, 6/24</td>
</tr>
<tr>
<td>John</td>
<td>M</td>
<td>16</td>
<td>6/60, 6/60</td>
</tr>
</tbody>
</table>
# Participants with Vision Impairment

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Acuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom B</td>
<td>M</td>
<td>12</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Tania</td>
<td>F</td>
<td>11</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Jenny</td>
<td>F</td>
<td>13</td>
<td>4/60, 4/60</td>
</tr>
<tr>
<td>Simon</td>
<td>M</td>
<td>13</td>
<td>6/24, 6/24</td>
</tr>
<tr>
<td>Amanda</td>
<td>F</td>
<td>13</td>
<td>6/60, 6/60</td>
</tr>
<tr>
<td>Tom C</td>
<td>M</td>
<td>12</td>
<td>6/60, 6/24</td>
</tr>
<tr>
<td>Kyle</td>
<td>M</td>
<td>11</td>
<td>6/36, 6/36</td>
</tr>
</tbody>
</table>
Why children with albinism were included in the group

- Difference in physical appearance (very pale, non-pigmented skin and white hair).
- To establish whether the additional factors inherent in this condition resulted in significant differences in the social cognition and social ability of these students compared with peers with vision impairment (not albinism) and those with no vision loss.
Why students with albinism were divided into three groups

• Three major albinism groups: oculocutaneous tyrosinase negative albinism (OCA1), oculocutaneous tyrosinase positive albinism (OCA2), and ocular albinism (OA).

• Reason: to gauge whether physical appearance had an impact on participants’ social ability and social understanding.
Procedure

• Teachers and parents were interviewed
• Parents completed a survey
  – Both parents and teachers were asked to comment on each child’s social cognition (social understanding)
• Teachers competed a Social Emotional Development Scale (SEDS) for each student
• Students were observed in various settings
<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam</td>
<td>Standoffish until knows what’s happening.</td>
</tr>
<tr>
<td>Trish</td>
<td>Vision impacts: Picks up subtle messages auditorily</td>
</tr>
<tr>
<td>Jan</td>
<td>Understands arguments</td>
</tr>
<tr>
<td>Tim</td>
<td>Interrupts, talks over others, doesn’t pick up vibes</td>
</tr>
<tr>
<td>John</td>
<td>Intuitive, picks up vibes</td>
</tr>
<tr>
<td>Sara</td>
<td>Good with adults</td>
</tr>
<tr>
<td>Tom</td>
<td>Can turn it on when needed</td>
</tr>
</tbody>
</table>
### Parents’ & Teachers’ comments on social cognition: Students with Vision Impairment

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
<th>Additional Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judy</td>
<td>Extremely good</td>
<td>All concepts poor</td>
</tr>
<tr>
<td>Tessa</td>
<td>Not putting it into practice. Doesn’t sense when behaviour is inappropriate Not reading what is going on.</td>
<td>Picks that sort of stuff up</td>
</tr>
<tr>
<td>Ian</td>
<td>Wants to learn about it. Learning</td>
<td>Doesn’t care about how others feel, or doesn’t show it</td>
</tr>
<tr>
<td>Alice</td>
<td>Not socially conscious</td>
<td>Unaware of how her actions affect others</td>
</tr>
<tr>
<td>Travis</td>
<td>Very intuitive</td>
<td>Doesn’t let that be seen. Male chauvinist image</td>
</tr>
<tr>
<td>Toby</td>
<td>*</td>
<td>Very aware of how his actions affect others</td>
</tr>
</tbody>
</table>
## Parents’ & Teachers’ comments on social cognition: Students with normal vision

<table>
<thead>
<tr>
<th>Name</th>
<th>Social Cognition Comments</th>
<th>Improvements and Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jesse</td>
<td>Doesn’t read situations or what others are thinking correctly.</td>
<td>Improving. In past solved problems by running away.</td>
</tr>
<tr>
<td>Ben</td>
<td>Interjects, can be rude: emotional and sensitive</td>
<td>Can’t understand why boisterous bullying behaviour isn’t appropriate.</td>
</tr>
<tr>
<td>Luke</td>
<td>Picks up innuendos and understands adult humor</td>
<td>Picks up body language. Can have an adult conversation.</td>
</tr>
<tr>
<td>Mat</td>
<td>Good social understanding</td>
<td>Understands adult humour, picks up hidden meanings, &amp; body language.</td>
</tr>
<tr>
<td>Dennis</td>
<td>Can read how others are feeling: knows when to go into a situation and when to “back off”.</td>
<td>Knows place in the world already. Realizes his limitations. Knows right from wrong. Picks up clues quickly.</td>
</tr>
</tbody>
</table>
Social Ability

• Severe vision impairment clearly imposed
  – a major difficulty in social understanding
  – resulted in some examples of inappropriate, assertive behaviour

• Although students with vision impairment were not always as popular as some students with no vision problems, the findings showed that they were not rejected by classmates
Social Ability

• The majority of students in the study
  – *had a well-developed repertoire of social skills.*

• However some lacked social understanding
  – *They tended to miss or misunderstand subtle social nuances and social feedback*
  – *They needed assistance to interpret social dynamics and make sense of the social environment.*
Say things that fit inappropriate with what others are saying: Teachers’ rating

**Students with Albinism:**
- Teacher ratings
  - 40% never or rarely
  - 40% occasionally
  - 20% frequently

**Students with Vision Impairment:**
- Teacher ratings
  - 17% never or rarely
  - 83% occasionally

**Sighted group:**
- Teacher ratings
  - 68% never or rarely
  - 32% Occasionally
Percentage of students by category who say things that fit inappropriately with what others are saying (N=25): Teachers’ rating

![Bar chart showing percentage of students by category who say things that fit inappropriately with what others are saying. The categories are CCA1, CCA2, CA, Albinism, VI, and No VI. The chart indicates the percentage of students in each category who say things never, occasionally, or frequently.]
Do things that fit inappropriately with what others are doing: Teachers’ rating

- 20% frequently
- 30% Occasionally
- 50% never

- 18% frequently
- 64% occasionally
- 18% never

- 32% occasionally
- 68% never
Number of students who do things that fit inappropriately with what others are doing (N=25): Teachers’ rating
Show inappropriate feelings
Teachers’ rating

- 10% frequently
- 40% occasionally
- 50% Never

- 100% Rarely or never

- 22% Occasionally
- 78% Never or rarely
Students who show inappropriate feelings, e.g. looks or acts happy when should be sad (N=25): Teachers’ rating
Summary: Social Cognition

• Teachers and parents views were not always in agreement
• Parents were more positive generally than teachers
• Students with vision impairment were generally not as socially cognisant as their sighted peers
• Vision Impairment had an impact on children’s social understanding
Conclusion: Strong Key Messages

• Vision has an impact on the development of social cognition
• The major factor that impacted on the social cognition of students with vision impairment was the difficulty they had in picking up and interpreting subtle visual cues, and body language.
• Early intervention assists students with vision impairment to become more socially aware
• Teachers need to be aware of the impact of loss of vision on the development of social understanding and social ability.
References

Thank You