Do I Know You? A Case Study of Prosopagnosia (Face Blindness)

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Prosopagnosia, also known as face blindness, can be a congenital disorder or the result of a traumatic brain injury or developmental problems. This disorder interferes with a person’s ability to recall faces and thus recognize individuals, even ones with whom he or she is intimate or familiar. Strangers cannot be distinguished from friends, which creates safety issues for the prosopagnosics. Furthermore, social interactions can be painful and ostracism is common as persons previously met cannot be recognized at subsequent meetings. This article presents a case study of a 13-year-old male and his mother who have congenital prosopagnosia. Information obtained from the student and his mother followed four themes: academic/career, safety, interpersonal relationships, and coping strategies. Examples of these themes and related interventions for school nurses are included.

**Keywords:** prosopagnosia; face blindness; social disability; depression; learning disability
Tranel (2001) offered the following criteria to define DP: The condition must be present from birth, manifesting in early childhood, and not be due to any known acquired brain damage.

A study conducted by a team at Harvard University in conjunction with a team at the University of Central London suggests that of the 1,600 people surveyed, up to 2% of people have some degree of face blindness (Duchaine & Nakayama, 2006). Another study conducted on 700 secondary school students in Germany supported this finding, with 2.5% of the sample demonstrating difficulty recognizing faces (Passmore, 2007).

Face recognition begins early in life with an infant being able to distinguish his or her mother’s face from other faces. As face recognition seems functional within weeks of birth, it is assumed to be a process that is inherent to the human brain and as such has very little plasticity (Kress & Daum, 2003). This reduced plasticity may be the by-product of the human brain’s inability to finely discriminate among visual objects (Nelson, 2001).

The extent of the face-recognizing deficit can be mild to profound. Some persons have difficulty recognizing others outside of their immediate family, while others cannot recognize family members or even their own reflection in a mirror (Kress & Daum, 2003). Some women have reported that they cannot recognize their own infants and have great difficulty picking their children up at school or day care because of this deficit (Tesoriero, 2007).

Social situations become increasingly stressful for individuals with prosopagnosia. As they fail to recognize persons with whom they have previously interacted, others assume they are being ignored or snubbed. This can be particularly stressful for children who do not recognize other children in the neighborhood or at school. Children with prosopagnosia rarely have a wide circle of friends because friendships are difficult to develop and keep. They are viewed by others as either friendly and superficial or shy and aloof. Crowded situations are particularly difficult, including stores, malls, and sporting events where no one is familiar.

This disorder is often coupled with directional deficits and sometimes object blindness (the inability to distinguish similar but different objects from one another), causing affected individuals to get lost easily and unable to recognize their cars. Problems with pattern recognition are also found, along with difficulties with memorization (Duchaine & Nakayama, 2006).

LIVING WITH PROSOPAGNOSIA

Through interviews with Elizabeth and her son Steve (names have been changed to protect confidentiality), both with DP, a glimpse into the life with prosopagnosia was explored. Elizabeth first realized she was face blind when she was about 30 years of age. Testing demonstrated that she not only had prosopagnosia but also had some object blindness and memory deficits (directional difficulties as well as difficulties with multiplication tables and multistep directions). Steve, Elizabeth’s son, is an intellectually gifted 13-year-old boy. Testing demonstrated that Steve has severe prosopagnosia, which makes it difficult for him to recognize members of his extended family. He also has the same object blindness as his mother and similar memory deficits, although his sense of direction is not as impaired.

Semistructured open-ended questions were used throughout the interviews with Elizabeth and Steve. Their responses were then transcribed and coded for themes. The major themes that emerged related to (a) academic/career, (b) safety, (c) interpersonal relationships, and (d) coping strategies.

Academic/Career

Schooling presented challenges for both Elizabeth and Steve. For example, each of them have found English difficult as they cannot recognize characters that are visually presented in a play or movie and in multiple, interacting characters in books.
Furthermore, math presented a problem because of difficulty with patterns. For example, Steve does well in math because he has devised alternative ways to solve the problems, but he does not necessarily follow the steps outlined by the teacher. Therefore, he often receives a lower grade than his understanding of the topic would warrant. Furthermore, Steve is restricted from some elective courses, such as drama, as he cannot tell the actors apart.

Elizabeth’s prosopagnosia has limited her career choices. She works best when she does not have to interact with the public. For example, when working in retail, Elizabeth had difficulties bringing items to customers as she could not recognize the person who made the request.

Safety

Safety was a major concern for Elizabeth as she could not recognize her own children. Day care was avoided because she could not identify her children when it was time to pick them up. Pre-arranged meeting places after school are a must. Crowded areas, such as malls or supermarkets, are especially problematic. If Steve and his mother become separated, they have difficulty finding each other.

At school, fire or evacuation drills are another area of concern as Steve may become separated from his teacher and be unable to find him or her. Field trips also pose a problem as Steve could not rejoin his group if he became separated from his class or teacher or identify the car or bus for his return transportation. This issue of safety also limits Steve’s freedom of movement outside of his home. He becomes lost easily and cannot recognize neighbors; therefore, he is not allowed to walk to a friend’s house or nearby stores.

Interpersonal Relationships

It is in the social arena where prosopagnosia has had the greatest impact on both Elizabeth and Steve. Elizabeth’s circle of friends is severely limited, including only her immediate and extended family. Steven has two friends whom he has known for several years but finds it very difficult to expand this number. He differentiates clearly between making and keeping friends. Making friends is easy, but keeping them requires recognition—something he cannot do. For example, he will often walk by someone he had previously met. Both Elizabeth and Steve have often been labeled aloof or unfriendly and ostracized by others. This is especially difficult for Steve given his adolescent developmental need for peer acceptance. Both avoid parties, dances, and other large social events as the number of expected interactions is overwhelming.

Coping Strategies

Elizabeth and Steve both use contextual and visual cues to identify individuals. Hair style, clothing, gait, voice, and location are key factors. For example, Steve identifies his teachers by class period and room number, but he cannot identify them outside of the classroom unless they have unique characteristics, such as being very tall or having red hair. Furthermore, Steve chooses friends with distinctive features that he could remember.

Small group interactions are sought while individual interactions are avoided. Small groups allow Elizabeth and Steve to listen and participate without needing to identify any specific individual. Both are careful not to use names or refer to previous events. If either has to attend a large group activity, Elizabeth and Steve go with a family member who does not have prosopagnosia. They interact with others based on verbal cues given by this relative.

Both use the Internet extensively for much of their socializing, interacting with a wide variety of people without having to recognize them. These interactions can have much more depth and intimacy as the person with whom they are interacting can be identified through the e-mail address and message content.

Elizabeth and Steve choose leisure activities that revolve around their family or what they can do as individuals. Elizabeth makes dolls, and Steve draws and plays chess. Neither participates in organized team sports, drama, or social clubs. Elizabeth also relies on relatives for directional information or uses driving instructions obtained from the Internet. Steve has learned to develop a visual map in his head, allowing him to maneuver around the school campus. Both have learned to observe their surroundings carefully and memorize
particular landmarks, such as large stores, to find their way around town. Neither can use directional (north, west) indicators.

**SCHOOL NURSE INTERACTION**

I met Steve and his mother when Steve was entering the sixth grade. He had an unrelated health concern that necessitated periodic visits to the health office. No comment was made regarding prosopagnosia. Elizabeth greeted me warmly, making good eye contact. She and I engaged readily in conversation, but she seemed a little ill at ease. Steve watched the conversation without adding to it yet seemed to be studying me closely. I assumed he was shy.

Steve came a few times a week to the health office. Each time he entered the room, he seemed to be searching for something, was very ill at ease, and seemed puzzled. This behavior was more acute if I was not at my desk. After we talked for just a few seconds, Steve seemed to relax and converse more easily.

The frequency of his visits increased during his seventh grade without apparent illness. Steve was having difficulty in some of his classes. He seemed easily distracted and found it hard to take notes, copy from the board, and finish written class work on time. He found it especially difficult to work in a group. He fidgeted constantly. His mother and I met and discussed the possibility of ADHD or anxiety. Elizabeth had Steve evaluated. The psychiatrist diagnosed Steve with ADD and a mild anxiety disorder. Medications for both were tried with little success.

Later in the school year, Steve was admitted to the local mental health facility for suicide ideation and depression. His mother told me at this point about Steve’s prosopagnosia. She explained the condition and admitted that she was also face blind. Elizabeth explained that while in elementary school, Steve was with a relatively small stable group of students. In that environment, Steve was able to recognize his teacher after several weeks by memorizing the teacher’s voice, mannerisms, walk, and specific classroom. He memorized his weekly schedule and the route to and from his classroom.

Once in middle school, where the school population more than doubled, Steve was confronted with six different teachers and more than 170 different students. His inability to recognize anyone became overwhelming. He often forgot how to get from one place to another. His teachers would greet him in the hall, and he would not know who they were. It was nearly impossible to make friends. He would speak to particular students on one day and ignore them the next as he did not recognize them. Steve soon got the reputation as being aloof and weird. Students avoided him, and he became even more isolated. Finally overwhelmed, Steve became depressed and suicidal.

Elizabeth’s major fear following Steve’s discharge was that returning to the school environment would precipitate a recurrence of the psychological issues that had led up to his hospitalization. His mother was very concerned that if she forced him to attend school, Steve would merely walk off campus. As he gets lost easily and cannot recognize anyone, Elizabeth’s fear for Steve’s safety was justified. An individualized health care plan (IHP) and academic modifications would need to be in place prior to Steve’s return.

Elizabeth and I met with the school psychologist, special education facilitator, and a special education teacher. We explained prosopagnosia, and Elizabeth requested special education testing for Steve. The results of comprehensive testing by both the school nurse and the school psychologist found that Steve had both assets and possible impediments. His IQ was found to be moderately above average, and he functioned in the normal range on achievement tests. Furthermore, his health assessment results were within normal range.

However, other test results indicated clinical significance in the areas of withdrawal, anxiety, depression, somatization, adaptability, and functional communication. Social skills, although not clinically significant, were found to be atypical. These results coupled with his very low scores on the face recognition tests conducted by a specialist resulted in special education eligibility under “Other Health Impaired” due to the prosopagnosia.

Specific accommodations were included in his IHP (Table 1). These modifications were based on Elizabeth’s Tips for Teachers that she and I
developed during the interview process (Table 2). Educating the teachers, counselors, administrators, and other campus personnel took time and had to be reinforced frequently during the early stages. Furthermore, Steve and his mother only wanted those persons actually involved with Steve’s education to know about their prosopagnosia. This increased the creativity needed to follow the IHP.

Steve is now off all medication and in honors classes. His grades are excellent, and he seems socially adjusted, although he remains a loner with few friends. He wants to be a robotics engineer and says that he likes “being his own person, not another copy of another kid. If others get creeped out, I don’t care.”

**IMPLICATIONS FOR SCHOOL NURSING PRACTICE**

Although the testing for this disorder is in its infancy, there are several indicators that might suggest the possibility of prosopagnosia. For example, face blindness could be present if a child continues to appear hesitant and/or anxious when interacting with an adult he or she has previously interacted with and this behavior abruptly changes after the

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**TABLE 1. Individualized Health Care Plan**

<table>
<thead>
<tr>
<th>Student Need</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff education</td>
<td>Educate staff about the etiology, characteristics, and impact of prosopagnosia. Answer pertinent questions.</td>
</tr>
<tr>
<td>Academic modifications</td>
<td>Locate student close to point of instruction. Indicate classroom groups by color or object. Modify length of assignments as needed. Confirm understanding of multistep directions. Allow individual methods of problem solving in mathematics. Supplemental readings or notes regarding the plot and characters if the lesson is based on a movie or play. Alternative evaluation methods if material involves visual recognition of actors or characters. Teams in PE will wear colors.</td>
</tr>
<tr>
<td>Safety concerns</td>
<td>Designated buddy during evacuation drills. Visual adult contact maintained during field trips. Student is not sent on errands alone.</td>
</tr>
<tr>
<td>Social concerns</td>
<td>School nurse and staff will wear ID prominently. School nurse and other staff will identify themselves through contextual cues when greeting student. Staff will be alert to signs of withdrawal or depression and refer student to school nurse. School nurse will meet periodically to assess student. School nurse will contact parents periodically to assess their perception of the student’s well-being.</td>
</tr>
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</table>

**TABLE 2. Tips for Teachers**

Identify yourself using contextual clues when away from your desk without alerting other students. All personnel need to wear their ID badges prominently. Never expect students with prosopagnosia to hand back papers. They cannot identify the individual students. If you are placing the students in groups, designate the groups by color or a visual symbol. Do not label them by the leader’s name. For example, the blue team, not Sarah’s team.

On field trips, an adult must keep close tabs on the prosopagnosic, staying in visual proximity of that child. For safety reasons, it is the role of the adult to keep tabs on the student, not the other way around. During fire drills or evacuations have a designated buddy for the prosopagnosic. The buddy finds the affected student and stays with him or her. Do not send students with prosopagnosia with a note, message, or attendance to the office alone. They will get lost.

Find alternative ways of testing comprehension if you are using a movie or play as the basis of the lesson. Prosopagnosics cannot distinguish the characters and thus cannot follow the plot. Multistep directions are often difficult. Verify understanding of each step before proceeding to the next one.
adult has identified himself or herself. If a student seems to get lost frequently, does not readily go to the correct work group during class, has difficulty interacting in a group, or has difficulty following multistep directions, prosopagnosia may be involved.

Some simple adjustments can make life easier for these students. Wearing a shirt labeled school nurse or that has one’s name on it allows for quick identification. When addressing the student or parent, identify yourself and call him or her by name. Having a designated “nurse’s desk” allows a child with prosopagnosia to identify you by that location. Communicate with and educate the student’s teachers, thus facilitating interpersonal relationships and increasing chances for academic success.

**CONCLUSION**

Prosopagnosia can have an impact on both the academic and social success of the student. This disorder can lead to social isolation, depression, and academic failure. However, increased staff awareness, early diagnosis, and appropriate strategies can enhance the student’s ability to learn and provide a safe educational environment. School nurses are in a position to provide needed education to the staff and an accepting, open environment for communication with the student and family. School nurses can act as an advocate in a situation where ignorance and disbelief regarding this little known disability are found.

“School nurses are in a position to provide needed education to the staff and an accepting, open environment for communication with the student and family.”

**REFERENCES**


