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VOLUME
19

THE GREY MATTER

QUARTERLY NEWSLETTER FOR MEDICAL STUDENTS



UNSEEN VOICES

The Sensory Spectrum



Modern society has always been quick to circle out those different from us in any way, be it an extra digit, one less limb or a hearing aid and place them under scrutiny for not measuring up to its standards of normal. Divyaangjan, impaired, challenged, handicapped and many more. These are some of the popular euphemisms in play when we refer to those with disabilities. We are quick to judge, assume and separate the person from their disability, but how much do we really know about their condition? Have we ever bothered to ask?

We naturally assume that disabled means completely unable, but these individuals with disability are people first, with lives as rich and complete as those without disability.

Humans tend to get hung up on differences. They forget that people have so much more in common than they realize, regardless of their ability level. Just like the able population, members of the disabled community have families, jobs, hobbies, favourite foods, preferred entertainment genres, sports and so on.

Volume 19 of The Grey Matter- 'Unseen Voices', is our humble attempt to bridge the gap between our blissful ableist oblivion and the complex, kaleidoscopic lives of those with disability. This edition focuses on vision, hearing and speech disabilities while underscoring a pivotal message- listening to often overlooked voices brings to the table nuance, endurance, creativity, beauty, innovation and power.

— Anushka Gupta & Aaditya Kiratkar, Co-editors

Happy reading!



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VOICES IN FLUX:



by Nidhi Jagtap, III/I M.B.B.S, HBT Medical College, Mumbai

Stuttering, also called stammering, is the most common speech disorder, most frequently seen in children. Despite being the most prevalent speech impairment and affecting a sizeable population, it is one of the conditions that frequently goes untreated. The social stigma attached to it is primarily to blame for this. In this article, I would like to discuss the importance and impact of early diagnosis, interventions, strategies for treatment and certain other related approaches.

WHAT IS STUTTERING?

It is a speech disorder characterized by repetition of words or syllables. The person knows what they want to say but has problems producing normal flow of speech.

This is generally accompanied with certain involuntary movements such as rapid blinking of eyes, lip tremors, abnormal gestures or changes in facial expressions.

TYPES OF STUTTERING

Developmental stuttering: This type is mostly seen in children. Research suggests that this might be due to inability of the child's speech and language demands to meet verbal demands.

Neurogenic stuttering: Seen due to any injury or disease of the central nervous system such as cerebrovascular accidents (stroke), head trauma, ischaemic attacks, CNS tumours, Parkinson's disease, multiple sclerosis, Guillain-Barre syndrome or as a side-effect of certain medication.

Psychogenic stuttering: There is no particular age for onset of this type. It can begin abruptly due to any emotional or physiological trauma. Causes may include anxiety, depression, conversion disorders or emotional response to traumatic events.

It is of utmost importance to diagnose the type of stuttering before implementing speech therapy for a better outcome. In this article, I would like to focus more on developmental stuttering, it being the most common form.

DEVELOPMENTAL STUTTERING DIAGNOSIS

This type of stuttering is usually identified by the child's paediatrician who may refer them to a speech-language pathologist (SLP). Diagnosis is made by thorough history taking, including questions such as when did the child start to stutter and if there are certain circumstances under which they face the issue. It is important to keep in mind that at this stage certain children may not be aware that they stutter.

The SLP may be able to determine if the child can outgrow it by knowing the duration since development of stuttering, family history and if the child presents with any other speech or language difficulties.

Certain symptoms seen are repetition of consonants or "K", "G", and "T", difficulty in starting a sentence, stretching out an alphabet in a word, and repetition of words and sentences.

It is also critical to ask the child about the impact of stuttering on their life by enquiring about or noticing frustration or hesitation before starting to speak or it being the reason behind refusal to speak. Challenges faced during public speaking, speaking in a group or answering in class by the child must be enquired about.

TREATMENT

A comprehensive approach is essential for an effective treatment and a faster response to therapy. Early diagnosis and intervention by therapy has shown to greatly improve a child's speech. Bullying, teasing by peers and the social stigma associated with stuttering makes it difficult for the child to overcome stuttering due to the fear. Hence, creating a supportive environment is beneficial along with speech therapy. This positive environment can first start at home by counselling the parents of the child. They can be asked to listen attentively to the child without interrupting and have patience and faith in the child and his progress. Opportunities should be provided for the child to speak at home which can be achieved by planning small family activities that the child enjoys or playing word games. Speaking in a slow and relaxed manner might help. Transparency in communication and responsiveness to the child's complaints help dispel the stigma in society. Along with this, informative sessions on speech disorders can be conducted in schools to spread awareness on the same.

Different speech therapists approach speech issues in different ways. Having a long-term objective and short-term goals to reach this long-term goal is one strategy that is proven to be immensely helpful. Initially, short-term goals might include being able to repeat the same sentence or paragraph with few stutters. It can also include speaking on a prearranged topic, talking in small groups, participating in class, and eventually focusing on public speaking as therapy advances and improvement is observed. Reducing the fear and anxiety related to stuttering may be the ultimate objective with building self-esteem.

Certain people use electronic devices to improve fluency. These devices fit in the ear canal and play a slightly altered version so that the wearer feels as if they are speaking in unison with the other person. They have shown to achieve great success in a relatively shorter time period.

NEUROGENIC STUTTERING

This type of stuttering is generally seen after trauma. Certain specific symptoms can differentiate this type of stuttering from others. In this type of stuttering, repetitions, blocks and disfluencies can be seen at any part of the sentence as opposed to developmental wherein they are generally seen at the beginning of the sentence. The patient seems to be unaware of any speech disfluency and shows no indication to improve it by themselves. Secondary symptoms are absent. Diagnosis of neurogenic stuttering is generally done by history taking and one of the key indications is that the patient showed no such signs of stuttering before trauma. There is no specific treatment for neurogenic stuttering, but treatment of the primary cause has shown to provide improved speech.

PSYCHOGENIC STUTTERING

Regardless of the patient's age, the speech-language pathologist must work in conjunction with a psychologist or psychiatrist to effectively address this type of stuttering. It can affect people of various ages, including young children, so speaking with an SLP is crucial to differentiate it from other types of speech disfluencies. Although the patient is not aware of its development, there is no obvious physical cause. It is necessary to take the patient's history and determine whether they have ever suffered from any physical or psychological trauma. It mostly impacts articulation and phonation. There are no apparent secondary responses.

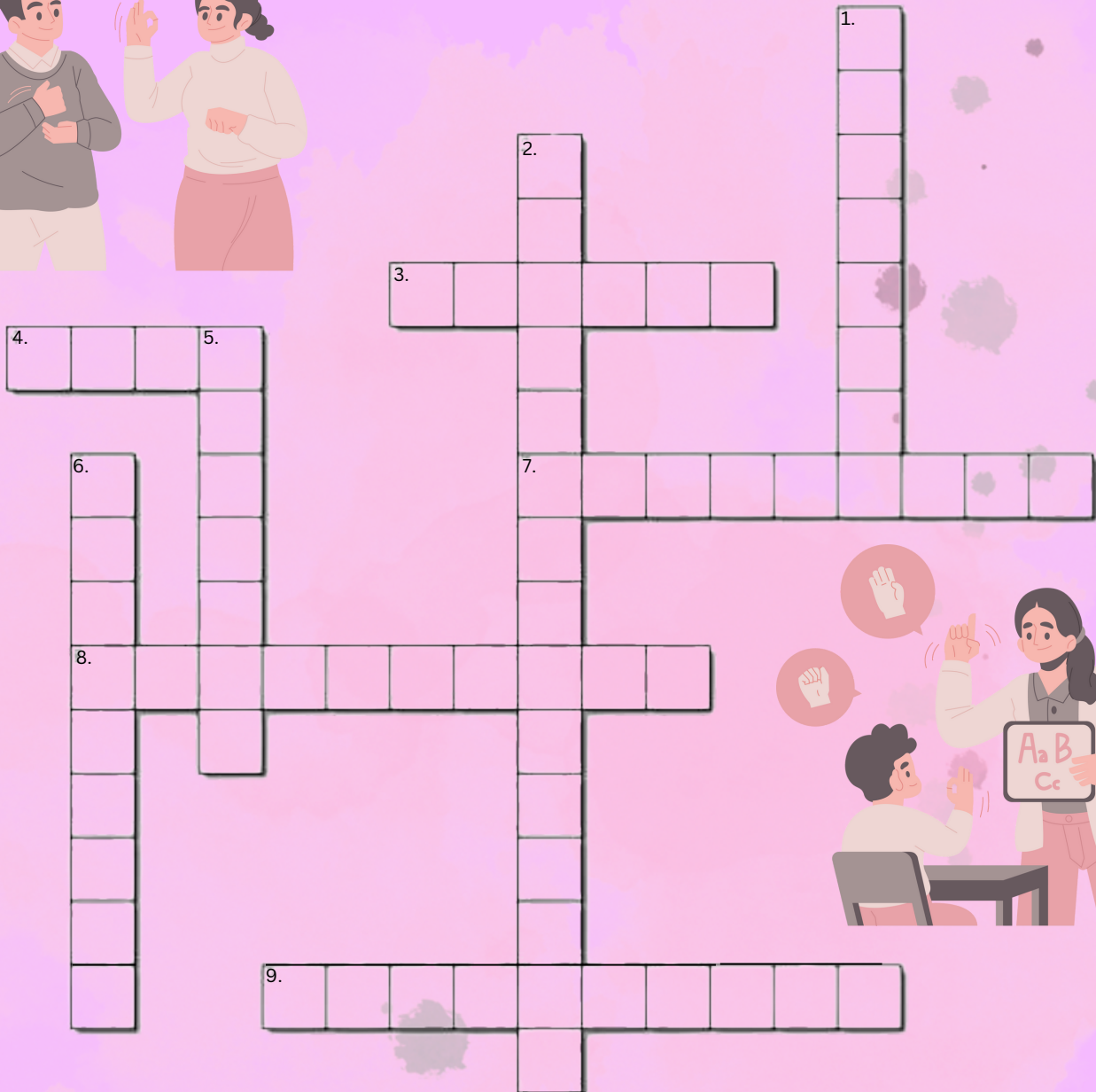
In summary, this article emphasizes how important it is to recognize the kind of speech impairment and distinguish between various stuttering patterns. Seeking therapy from an SLP is essential. Stuttering is easily treatable with appropriate counseling and follow-up sessions. It is imperative to educate the patient on the significance of attending every speech therapy session in order to achieve optimal outcomes. The social stigma associated with disability must be addressed through sessions led by healthcare professionals in schools or camps so that those facing such challenges can live a better and more comfortable life.



CORTEX

Crossword

by Anushka Gupta, III/I M.B.B.S., M.I.M.E.R. Medical College, Pune



- Answers:
 1. Wernicke
 2. Acoustic Neuroma
 3. Myopia
 4. BAH
 5. Apraxia
 6. Beethoven
 7. Tonometer
 8. Trigeminal
 9. Ethambutol

Across

3. People with this condition have difficulty in reading even if they are literate
4. Implant used most commonly for conductive hearing loss
7. Instrument used to measure intraocular pressure
8. Ophthalmic nerve is a branch of this nerve
9. Anti-tubercular drug notorious for optic neuritis

Down

1. Aphasia due to lesion in Brodmanns Area 22
2. Benign tumour of the 8th cranial nerve
5. Condition characterized by difficulty producing certain sounds or words
6. This world famous German composer and pianist was surprisingly deaf

DIALOGUE

Dr. Geetanjali Singh, Department of Ophthalmology, M.I.M.E.R. Medical College, Pune

In conversation with Shreya Iyer, II M.B.B.S. and Naveen Keerthi, II M.B.B.S., M.I.M.E.R. Medical College, Pune

Dr. (Retd. Surg. CDR) Geetanjali Singh is an assistant professor at MIMER Medical College, Talegaon Dabhade. She has completed her M.B.B.S, M.S and D.N.B. Ophthalmology from Armed Forces Medical College, Pune. She was awarded the President Gold Medal and Kalinga trophy for 'best outgoing MBBS student' (1998), and Chief of Naval Staff Silver Jubilee Trophy for best academic record during her undergraduation. She also received the gold medal for ranking 1st in Pune University during her post-graduation.

She was commissioned in the Indian Navy for 12 years and has completed fellowships in Paediatric Ophthalmology, Strabismus and Glaucoma. She holds several research publications to her name and has been the leading force behind several blindness camps and wellness checks in rural schools to screen individuals for ophthalmic abnormalities.

Q)What made you choose ophthalmology as your speciality?

I owe all credit for the same to my teachers, especially Dr. Gupta and Dr. Smita. They inculcated interest for the field in me. Vision is one of the most important sensations to humans. For me, the uniqueness of this specialty lies in the profound satisfaction one feels when they see their patients, who have been struggling to see, get back their vision.

Q)What are the most common types of ophthalmologic disabilities?

It depends on the age. In young children, who are of school-going age, the most common disorders that we encounter are refractive errors. This is the reason why health check-ups in school are essential; such disorders can be picked up early in routine check-ups. This helps delay progress to later stages of the disorder.

In the elderly, cataracts and glaucoma are universally prevalent but in rural areas like ours', we do come across several cases of corneal opacity and ulcers.

Q)In your years of experience as a doctor and a teacher, how impactful is the stigma associated with the disability on the individual?

I think more than the stigma, it is the struggle faced by the individual, owing to the very fact that they are dependent on others for day to day activities, along with financial dependence, leaving them "economically bound". In some scenarios, the person is not even able to move around without somebody's assistance. The mental, physical and emotional toll of the same has an unhealthy impact on the human body.



Dr. Geetanjali Singh

Q)Could you elaborate on the difficulties that patients with ophthalmologic disabilities face?

The person inadvertently becomes a burden on his/her family and the society, and in spite of people being considerate of their situation, the situation does not improve without rehabilitation.

Often, children under 7 years -when visual development is occurring at a rapid pace- stop complaining about their vision problems because their parents disregard their complaints. The reality is that these children do continue to have vision problems, which only get worse.

For example, when children have vision problems, let's say in depth perception, they are unable to catch balls thrown at them. They get labelled as clumsy children. This makes the child feel embarrassed and she/he gradually becomes introverted.

Q)What is the national program for control of blindness and how is it beneficial to blind people? Could you also tell us about MIMER'S contribution in all of this?

The National Program for Control of Blindness is an initiative taken by the central and the state government. It works at all levels and includes the district hospitals too. It includes free cataract surgeries for patients. Its main aim is to bring down the burden of cataract associated blindness in India. The reason being that it is a surgically treatable condition which can restore full vision in patients.

Usually 4-5 surgeries, but sometimes even up to 12 surgeries are done in a single day. All centers of repute are contributing in their own way and MIMER has been an active participant in all this.

Q)In the light of the recent total eye transplant surgery, are there any upcoming treatments (both surgical & non-surgical) for partial blindness?

Commonly, corneal transplants are done for blindness related to the cornea. Corneal blindness is also like cataract associated blindness, which is treatable by surgery. The total eye transplant, or the concept of the 'bionic eye' is still under research, and is being tried out. As of now, it is not a norm but corneal transplants are done often enough.

Q)How accessible are these surgeries to the masses?

Raising awareness about eye donation is crucial, starting with students and extending to all community members up to the mamas and maushis. Often, during a patient's critical moments, the thought of organ donation is overshadowed by grief. However, with proper sensitization and priming, many families are inclined to donate, hoping their loved ones can live on through others. Timely counseling for patient families can significantly boost donation rates. The challenge lies in the disparity between the number of donors and recipients, highlighting the importance of eye banks in managing tissue registration and ensuring donations are processed correctly. Despite increased awareness, eye donations remain scarce. Healthcare professionals play a key role, and must approach potential donations with sensitivity and clarity. It's important to note that even if individuals pledge to donate their eyes, the final consent rests with their next of kin, emphasizing the need for a well-coordinated effort at Tertiary Healthcare Centres to facilitate donations.

Q)As of today, there are 300 million people all around the world affected by colourblindness, with India being the country with the highest number of cases. Despite this, it is still not considered a disability per se. Why do you think that is?

Colour blindness is a genetic defect - it is transmitted from a mother to her son and there is no treatment for it. It is only considered a disability for certain professions like pilots, navigators and people in defence, or something as simple as driving, where having accurate colour vision is a must. Barring these professions, colour blindness is not a handicap and one can lead a very normal, visually satisfactory life despite their diagnosis. As the quality of life is still very much normal despite having colour blindness, it is not considered a disability.

Q)What is the most memorable instance you have encountered in your career?

During my fellowship, we had conducted a camp in a blind school, where we came across a child who was considered

blind. He was studying braille and was treated like any other blind student.

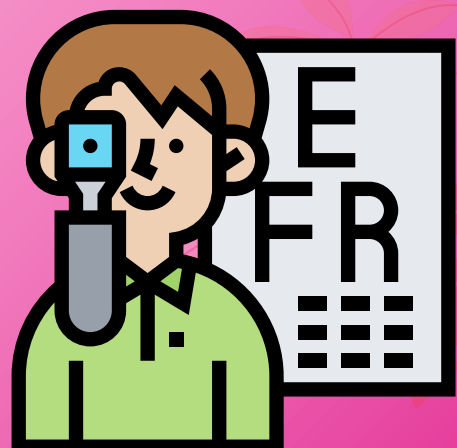
After thorough testing, we realised that the child was not blind, but in fact a case of undiagnosed bilateral paediatric cataract. The minute after surgery when the patient opened his eyes and realised he could see, his entire aura changed. The happiness on his face was nothing like I had ever seen. It was neither a tricky nor a challenging case but it definitely became one of the most gratifying experiences for me. Watching the child gain sight almost overnight was also very exciting for me.

Q)In the upcoming generations, we are seeing a rapid and massive increase in the use of glasses and/or contact lenses. What are some simple ways that people could follow to take better care of their eyes?

Taking care of the eyes can be as simple as washing your eyes with clean water, especially for people from rural populations. Eye hygiene is very important. If there is an infection, you must get timely help. I see a lot of patients who get injured while farming and get fungal ulcers. In the paediatric age group, children must be screened for refractive errors, amblyopia and other defects regularly. Moreover, the screen time of individuals must be reduced to only 1 hour daily. Research has shown that children who play in bright sunlight and use their distance vision more have less chances of requiring glasses than those who stay at home or in closed spaces, constantly hooked onto their screens.

Q) What is one message you would like to give for aspiring ophthalmologists and future medical professionals?

My only advice is that you have chosen a very noble profession, so you must carry the responsibility that comes with it. Be ethical, courteous and always scientific in your approach towards your patients. The first dictum of practicing medicine is 'Do no harm', so if your intentions are right, your patient will do well. Medicine is unlike any other profession. Apart from monetary gain, the gratitude and satisfaction gained in this profession is priceless.



LIGHTS, CAMERA, PRESCRIPTION!

-Anushka Gupta, III/I M.B.B.S., Aaditya Kiratkar, III/I M.B.B.S.,
Neel Wagh, III/II M.B.B.S. M.I.M.E.R. Medical College, Pune

Shwaas

"Shwaas" is a Marathi film that follows the story of Parshya and his grandfather seeking treatment for Parshya's deteriorating eyesight. They meet Dr. Sane, who diagnoses Parshya with Retinoblastoma, a rare retinal cancer. Dr. Sane explains the treatment, which consists of surgery, resulting in Parshya going blind. The film depicts the grandfather's agony and his coming to terms with the situation. The day before the surgery, the grandfather sneaks his grandson out to show him the sights of the city one last time. "Shwaas" was widely appreciated by film critics and was India's official entry to the Oscars for the year 2004.

Sound of Metal

A heavy metal drummer's life is turned upside down when he begins to lose his hearing, and he must confront a future filled with silence. A tale of acceptance, it follows the struggles of Ruben as he tries to understand that being deaf is not a handicap and that deafness isn't something to fix.

Rocket Science

It tells the story of Hal Hefner, a fifteen-year-old stutterer who decides to join his school's debate team when he develops a crush on its star member. "Rocket Science" is a teen comedy that poignantly captures the painful loneliness of adolescence while struggling with a stutter.

Black

Starring Rani Mukherjee as a blind and deaf girl born into a family and a time that doesn't understand what to do with her, this movie details her struggles as she navigates through life until an alcoholic schoolteacher (played by Amitabh Bachchan) makes it his mission to guide her to graduate while fighting Alzheimer's.

Andhadhun

"Andhadhun" is set in Pune where Akash, a pianist who fakes being blind, lands a gig at his girlfriend's family diner. Unwittingly, he gets embroiled in the murder of a retired Bollywood actor that happened right in front of his 'eyes'. The story revolves around how Akash evades suspicion about not being blind and accusations of being an accomplice to murder.

CODA

A cocktail of emotions, this comedy coming-of-age drama is set in coastal Massachusetts and follows the life of 17-year-old Ruby, the only hearing member in a family of deaf adults. Watch as she falls in love, discovers her passion for singing, and convinces her parents to let her chase her dreams at music school instead of joining the family fishing business. You'll be surprised to know that the deaf characters are played by actors who are deaf in real life. Fun fact - "CODA" actually stands for Child Of Deaf Adults.

Dining with Diversity

GUEST
INTERVIEW

Mr. Shailesh, Operations Executive and Cash Flow Manager at Terrassinne Kitchen and Bar

In conversation with Anushka Gupta, III/I M.B.B.S. and Aaditya Kiratkar, III/I M.B.B.S., M.I.M.E.R. Medical College, Pune



Terrassinne Staff

Terrassinne - Kitchen & Bar is a fine dining restaurant located in the heart of Pune city- on the famous F.C Road. They promote conscious dining and social inclusivity. They employ individuals with hearing, speech and visual impairments; all adult children of farmers from villages across Maharashtra and Karnataka.

That's not all, they have tied up with more than 200 farmers across India to create a menu which boasts a farm-to-table concept, with all ingredients locally sourced. Their delicious dishes have attracted local and national attention.

Terrassinne has received numerous awards and accolades for its commitment to social upliftment; notably from the International Hospitality Council, London in 2021 & 2022 and the Positive Gems of India' award in 2022 at the Second National Summit, Delhi from the Former President of India & Chairman of NHRC.

Q) How was the idea behind Terrassinne conceived?

Terrassinne is the brainchild of Dr. Sonam Kapse, an oral cancer specialist and member of the Melinda Gates Foundation. Having worked in various countries to support vulnerable communities, she conceived the idea for Terrassinne during her time in Spain. Here, she discovered a cafe that was run by a team of staff members with diverse disabilities. The environment and work culture were incredibly positive and the cafe had a loyal customer base who visited frequently, for coffee and conversations with the staff. This inspired her to create something similar in India but with a broader range of disabilities represented.

Her goal was to have all 21 types of disabilities recognised by the United Nations working under one roof and currently, Terrassinne employs individuals with 14 different types of disabilities ranging from low vision, blindness, deafness, speech and language disabilities to intellectual disabilities like Down's syndrome.

Q) How is the staff at Terrassinne handpicked?

We have established our database over several years by engaging with families of individuals who have reached out to us or vice versa. Our hiring criteria do not include factors such as education or language proficiency. Instead, we hire and train individuals regardless of their background and experience.

This is Dr. Sonam's core expertise; she customizes the training programs to suit the specific disability of each individual. Our training is not just focused on helping them secure a job but also on developing the necessary skills and behaviors that enable them to live independently.

Every employee here has a strong sense of responsibility and respect for every individual, whether they are working with colleagues or serving customers. We believe this sense of accountability is deeply ingrained in all our employees. It is the reason they turn up to work every single day.

Q) Do the employees have the option of leaving and joining other workplaces after being trained by Dr Sonam?

Yes, indeed. Our employees are trained such that they are ready to hit the floor or work at any office they wish.

Q) How do you ensure that operations run smoothly and there are no misunderstandings between the customers and the staff?

If you look at our menu, it is uniquely designed to suit the needs of our servers, who are hearing-impaired. The best way to communicate with them is in sign language. We are using Indian Sign Language as a medium of communication here. Every item on the menu has a specific gesture or sign drawn next to it, which helps the customer tell the server exactly what they wish to order. Reshma, our guest relationship manager, is visually impaired. When a customer walks in, she comes over and greets them. She introduces them to our concept and explains the ordering process, following which the server takes the order in sign language.

Q) How has Terrassinne survived in the cutthroat world of hospitality and food service? What sets it apart from other restaurants?

We are not an NGO, charitable trust or foundation. We are a sustainable, profitable venture. With our business model, we wanted to give a loud message to society that this can be possible without any funding or donations. We have no criteria for hiring nor do we engage in any promotional activities on the streets of Pune. Whatever revenue we generate is due to word-of-mouth publicity.

We have served top bureaucrats and iconic personalities Sudha Murthy, the Chief Minister of Maharashtra etc. They have all dined here and appreciated our food and service. The business model is unique because as such, I have not come across a similar one, at least in India.

Q) Has the public acceptance of Terrassinne changed over time? If so, in what way?

Initially, customers were hesitant to dine here upon realizing the restaurant was run by special needs individuals. Some even left because they were uncomfortable. With time, customers have embraced our staff and now enjoy interacting with them. Some regulars even inquire about specific servers and express a desire to be served by them. We have had customers donate funds, clothes and other items, though we do not accept any form of monetary tips or donations.

Q) Why does the restaurant not accept tips?

We believe in providing meaningful employment opportunities for individuals with disabilities rather than relying on sympathy or handouts. Tipping is a common practice in the hospitality industry but we aim to break that mould and empower our staff to earn a dignified income through their work.

Q) Do you think there are more conversations about inclusivity now than a few years ago?

Yes, of course. There was little talk about inclusivity in corporate spaces let alone restaurants until a few years ago. Gradually, we have fostered these conversations and Terrassinne is evidence that these conversations bear results. It is a testament that we are talking about it and ensuring that everyone works with dignity and not due to pity or sympathy. It will take a lot of time to reach our goals but we are proud of the progress made so far.

Q) How does Terrassinne ensure that staff members, regardless of their disability, feel valued and supported?

A majority of our employees here at Terrassinne, are working for the first time. Today, after working with us, they have their own identity, dignity and self-respect that comes regardless of their disability. They are not categorised as disabled here. They are working adult employees with their work cut out for them, and they all do it flawlessly. We have employees who had their parents drop them off and pick them up from work every day earlier; now they switch buses themselves and travel here. They can now avail facilities like taking out a loan in their name, get health insurance which would not be possible if they were unemployed. Even regarding setting up marriages, these employees can say that they earn and have benefits akin to the 'able' population. Terrassinne provided them with a platform to carve out their own identity on their terms. Even if they decide to work somewhere else, they are equipped with skills that will help them secure employment at par with anyone who is not disabled.

Q) What message do you wish to convey to the community to fast-forward the creation of inclusive spaces like Terrassinne?

Every person at some point in their life will face a disability. It may manifest as age-related vision loss, slower reflexes, inability to climb a flight of stairs or any comorbidity that can come with old age. Therefore, we need to inculcate empathy and not sympathy. The way you treat those at a disadvantage around you speaks volumes about you as an individual. One should learn to pass on kindness. This should not be confused with pity as those who are disabled ask nothing from us rather than to treat them the same as any able person.

Q. (To Shri, an employee at Terrassinne) What is one incident that sticks out in your time working at Terrassinne?

While no particular incident stands out, I find joy in seeing customers satisfied with their meals and service. Some customers go out of their way to appreciate me, which makes me glad. My duties involve setting tables, ensuring cutlery is organized, and maintaining cleanliness and I take pride in doing them well.

Q (To Shri) How do you manage stress while working at Terrassinne?

I don't feel stressed or anxious at all. I enjoy clocking in every day and look forward to coming to work. My tasks are manageable, and I feel fulfilled by doing them with perfection. I like my job here and truly enjoy working with other staff members who are now my friends.

Echoes Of Empowerment

A BOON WITHIN DARKNESS

One morning on a routine day,
When curtains unfurled in their identical way
I looked in the mirror, only to see
A girl staring back that was never me.
A floret with petals plucked
An angel with wings tucked,
More often as I am labelled
Special, helpless or differently abled.
But the winds aren't meant to be lenient
Thus I shall stand strong, not falter.
I carry my flaws like a crown
While you're not devoid, they drown deep
down.
Ambition is a mighty warrior, when that's all I
carry,
Acceptance is permanent, while grievances are
only temporary

- Ananya Shinde, II M.B.B.S., M.I.M.E.R. Medical
College, Pune

The Man On The Wheelchair

There is a man on the wheelchair
Yet he stands so tall
With an awe inspiring personality
He towers upon us all.

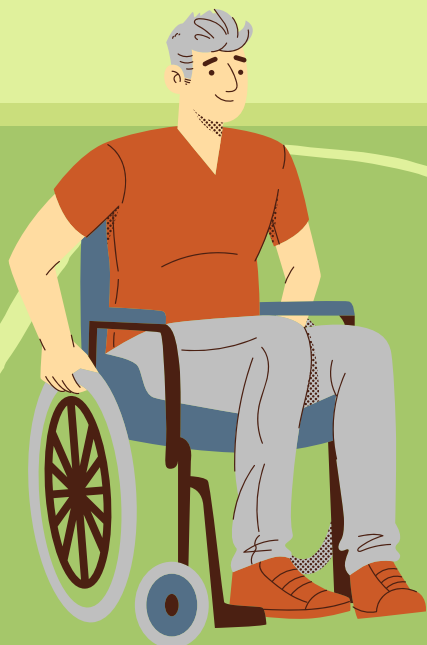
The man on the wheelchair
Lost both his legs in the war
It seemed for a while that he had lost all
he stood for;
The loss gave him a scar.

And yet he went for rehabilitation
That brought back what he had lost
He might not have regained his limbs
But he found a reason to live for.

The rehabilitation had a hope reborn
To live not normally but with grace
By deciding to undertake a journey of
strength-
Life took on a new phase.

The man on the wheelchair.
Even without limbs he stands tall.
For in his story of courage and resilience
He has the capability to inspire us all.

-Ritayan Mahapatra, I M.B.B.S.
M.I.M.E.R. Medical College, Pune



TAAZA KHABAR



For a long time, humanity has been searching for a cure for a condition that causes 850,000 deaths each year.

Depression is often underestimated in terms of its lethality. However, an unexpected solution has been found in an unlikely place: poop.

It may sound unbelievable but many of the groundbreaking discoveries in history seemed impossible at first. This raises the question of how the cure to such a complex disorder could be related to the waste we produce. The answer lies in the bacterial flora that exists in human faeces.

Fecal Microbiota Transplant (FMT) is an innovative treatment method for bacterial infections. Recently, a study involving faecal microbiota transplants from healthy donors to recipients with Major Depressive Disorder (MDD) revealed that this treatment cured depression in 95% of the subjects. This finding was corroborated in rats with MDD who received faecal transplants. It's important to understand how this treatment works.

Research suggests that the Gut-Brain axis is involved in depression, although the exact mechanism is unknown. The Gut-Brain axis is a complex connection between the gastrointestinal tract, the gut microbiome, the enteric nervous system and the brain. The microbiome plays a crucial role in maintaining balance between the gut and the brain by manipulating signals between the enteric nervous system and the CNS. This could lead to a permanent cure for depression. A growing number of preclinical and clinical studies have revealed that changes in the composition and function of gut microbiota, known as dysbiosis, are associated with the onset and progression of depression due to their role in regulating the gut-brain axis.

Who would have thought that what goes into the sewers would one day be hailed as a miracle cure for the incurable? The human body is a mysteriously magical creation and the more we uncover what is hidden, the more there is to unravel and understand. It seems that the fourth wall of medicine is crumbling. It's appropriate to say that faeces holds the key to the future of medicine.

-Naveen Keerthi, II M.B.B.S.
M.I.M.E.R. Medical College,
Pune

the *Mind-y* project

by **Krishna Sanghvi, Final year B.P.Th, MAER'S College of Physiotherapy**

AN ILLUSION TO YOUR VISION

"Blindness is an unfortunate handicap but true vision does not require the eyes."-Helen Keller.

Living with a disability of any kind is a difficult and painful challenge faced by people with disabilities daily. A disability is not a contagious disease; it is an impairment due to injury, heredity or illness. One such disability that mars vision is blindness. Blindness has always meant more than merely the inability to see. In common usage, the word "blind" connotes a doubt of understanding, a wilful disregard, a veil meant to conceal or deceive. If you observe, you realise that the word is used figuratively more commonly than in its literal sense. Pick up any magazine and you will find dozens of similes and metaphors connecting blind people to ignorance, confusion, indifference and ineptitude. I hope we all learn to be cognisant of the ableism in our vocabulary and refrain from using it.

Blind people are often written off before they even have a chance to demonstrate their abilities. For most people, vision is the most significant way of receiving and interpreting information from the world, but people with visual impairments experience the world through an entirely different mechanism. It's not better or worse, simply different. Blindness does come with its fair share of challenges, considering that the very foundation of mankind which is based on a 'Vision' is compromised! Many people blessed with perfect vision have the impression that blindness is similar to walking with closed eyes, but that's not the case. For a person to be considered legally blind, their eyes must operate at 20/200 vision or worse, meaning their eyes are 10% as strong as those of a person without any visual impairment. While this can prove to be a serious barrier, the indomitable human spirit prevails yet again: by the aid of our broader 'Vision', through technology. Pretty much every major operating system on the planet has some kind of software that will help translate the words on your screen into audio messages.

People with visual impairment rely on regularity and memorization. They make detailed mental maps of the physical world they inhabit, which makes acclimatisation to the ever evolving environment extremely difficult. But even with closed eyes they possess the ability to look. To look beyond their disabilities towards a bright future.



COGNITIVE CRESCENDO:



-The Cochlear Connection

by **Abhishek Bodne, III/I M.B.B.S., M.I.M.E.R. Medical College, Pune**

Cochlear implants (CIs) have revolutionized the management of hearing loss, offering the gift of sound to individuals with the primary goal being the restoration of auditory sensation and facilitation of language development with simultaneously growing interest in understanding its broader impact on cognitive development, particularly in children. This article explores the association between language acquisition and cognitive development in cochlear implanted children, shedding light on the intricate interplay between auditory stimulation, language processing, and cognitive abilities.

Language acquisition is a fundamental tool for communication, learning, and social interaction and this is underscored especially in children with hearing loss in whom acquiring language skills can be particularly challenging, as they lack access to auditory input, which is crucial for the development of spoken language. Cochlear implants bypass the damaged auditory system, providing direct electrical stimulation to the auditory nerve and enabling recipients to perceive sound.

Emerging research suggests that cochlear implantation may confer cognitive benefits beyond language development in deaf children. Studies have reported improvements in various cognitive domains, including auditory working memory, executive function, auditory-visual integration, and spatial cognition, following cochlear implantation.

Cochlear implanted children have shown improvements in auditory working memory tasks, such as remembering sequences of sounds or auditory patterns. As a result, cochlear implanted children may demonstrate better retention and manipulation of auditory information, facilitating their ability to follow instructions, participate in classroom activities, and engage in verbal communication.

Another cognitive domain that shows promise for improvement following cochlear implantation is executive function. Executive function encompasses a set of higher-order cognitive processes responsible for goal-directed behavior, cognitive control, and decision-making. Cochlear implanted children have been found to exhibit enhancements in various aspects of executive function, allowing these children to sustain focus and concentration on tasks requiring auditory processing, such as listening to lectures or engaging in conversations. Enhanced inhibition enables them to suppress irrelevant distractions, leading to more efficient learning and academic performance. Additionally, greater cognitive flexibility allows cochlear implanted children to adapt to changing environmental demands in novel situations. These improvements in executive function contribute to the overall cognitive functioning and adaptive skills of cochlear implanted children, supporting their academic and overall social progress.

Furthermore, cochlear implantation has been associated with enhancements in auditory-visual integration skills, which are essential for navigating the multisensory world and interpreting complex stimuli. Deaf children with cochlear implants demonstrate improved abilities to coordinate auditory and visual information, enabling them to make sense of their surroundings and interact effectively with others. Enhanced auditory-visual integration facilitates speech reading, where individuals use visual cues from lip movements and facial expressions to supplement auditory information and enhance speech comprehension. Additionally, cochlear implanted children show better integration of auditory and visual spatial cues, allowing them to locate sound sources, and participate in activities requiring spatial awareness.

While cochlear implantation has shown promising cognitive benefits in deaf children, several challenges and considerations must be addressed to fully utilize outcomes in this population. There is a disparity in results achieved in different children, owing to their age of implantation, duration of deafness and socioeconomic status.



While studies have reported immediate improvements in cognitive function following implantation, there is limited evidence on the sustainability of these gains over time.

Secondly, let us talk about the specific neural mechanisms underlying cognitive gains in cochlear implanted children which are not fully understood; several hypotheses have been proposed nonetheless. One prominent theory is the concept of neuroplasticity, which refers to the brain's ability to reorganize and adapt. Following cochlear implantation, auditory stimulation is reintroduced to the auditory system, providing direct electrical stimulation to the auditory nerve, bypassing the damaged cochlea. This auditory input activates auditory pathways in the brain, including the auditory cortex and its networks to analyse the information. The increased exposure to auditory stimuli triggers neuroplastic changes in these brain regions, leading to synaptic strengthening and the formation of new neural connections.

The auditory cortex, in particular, undergoes significant reorganization in response to cochlear implantation. Studies using neuroimaging techniques such as functional magnetic resonance imaging (fMRI) have demonstrated changes in the size, organization, and functional connectivity of the auditory cortex following implantation. These changes are thought to reflect the brain's ability to adapt to the new sensory input and optimize processing of auditory information.

Furthermore, the activation of auditory pathways may have downstream effects on other brain regions involved in cognitive processing. For example, auditory input is known to interact with regions of the prefrontal cortex involved in executive functions such as attention, working and memory. By stimulating these cognitive control networks, cochlear implantation may enhance attentional focus and other essential cognitive abilities.

Additionally, the reintegration of auditory input may facilitate cross-modal plasticity, whereby sensory information from one modality (auditory) influences processing in another modality (visual, somatosensory, etc.). Cochlear implanted children may develop stronger connections between auditory and visual sensory modalities, leading to improved integration of auditory and visual information and enhanced multisensory processing skills.

In conclusion, cochlear implantation not only facilitates overall auditory enhancement but also shows promise in enhancing various cognitive domains. These cognitive benefits are attributed to neuroplastic changes in the auditory pathways and associated regions, underscoring the importance of early intervention and ongoing research to analyse and work on further development, with reduction in individual variability.



The Ink Of Life

**Ms. Parvathy Panickar, Nurse at Garware Blood Bank, Dr. BSTRH, Talegaon
In conversation with Neel Waghu, III/II M.B.B.S., M.I.M.E.R. Medical College, Pune**



Ms. Parvathy Panickar

Ms. Parvathy Panickar has been working at the Garware Blood Bank at Dr. Bhausaheb Sardesai Talegaon Rural Hospital since the last 6 years. A strong proponent of hard work and discipline, her work experience includes 3 years at Ruby Hall Hospital, Pune

Q) Can you give us a brief run through of your daily schedule?

The day usually begins with a visit to the ward for a thorough inspection followed by managing donors at the blood bank. Whenever required blood donation camps are also held. Right now due to increased requirements we have a limited quantity of A+ve and B+ve blood packets.

Q) Our hospital faces a constant shortage of blood due to it's ever increasing demand. How do you collect and store blood efficiently?

We hardly get 3 donors daily which is not ideal at all. Prior screening of the donors for systemic diseases, HIV, HBV and other infective material has to be done. Blood and it's components have to be packed separately and labelled. So, owing to it's exhaustive requirements, there will always be a gap between the supply and demand for blood.

Q) What initiatives has the blood bank taken to increase awareness about blood donation?

We hold blood donation camps at our hospital from time to time. We hold street plays, distribute flyers highlighting the importance of blood donation and it's power to save lives. The students of our college are encouraged to donate blood on occasions such as Independence Day and Chhatrapati Shivaji Jayanti.

Q) What are the hardships you face while managing the blood bank?

Constant supervision of the incoming blood, it's quality, quantity, elements as well as monitoring the blood output is vital while running a blood bank. The FDA conducts timely check-ups. Making sure the donors meet the eligibility criteria is also important as many people are often unaware of underlying conditions such as diabetes or hypertension. Currently with the limited number of people working here it can get quite hectic.

Q) Do you have any advice for our readers?

'Raktidaan matlab Jeevandan.' Blood is not a medicine that can be perfectly manufactured. It is a part of our own body that can be used to treat everyone. It is free of cost medicine which can be used to treat a myriad of diseases running right through our bodies!



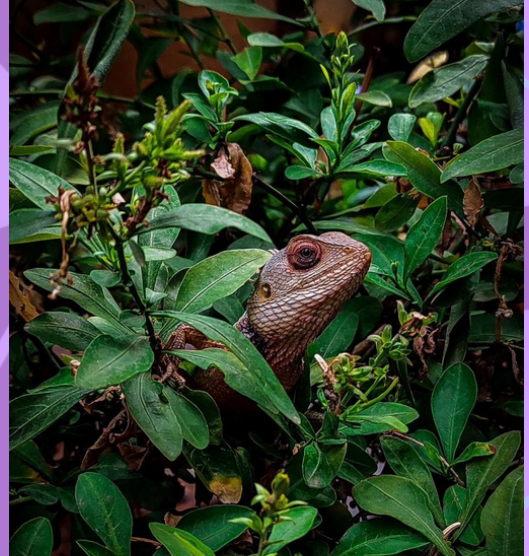
**DONATION
DRIVE**

Shutterbug



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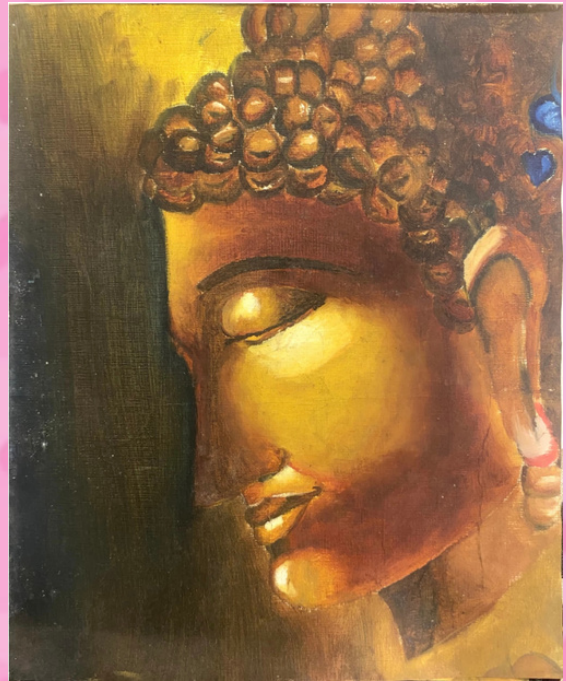
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A Cold Night

by Faizan Quraishi, III/II M.B.B.S., IGGMC Nagpur

Death has no appeal for the blind.

There is no light at the end of the tunnel. No vivid flashbacks. No visions of the afterlife. No guiding light to swim towards.

The blind man's death is simply a graduation from one darkness to the next.

I had come to realize this last winter as I trudged across knee deep snow on an unusually cold evening.

I was only about four hundred meters away from my house. Within that house was a room heater, a bowl of warm soup, a blanket and a daughter who had just returned from work to find her father gone. Within the protection of the four walls of that house I had severely underestimated what it meant to be cold. I had known snowfall and I had known ice but I had not known the cold. Up to that day I had thought of the cold as an annoying pest that would coerce me into wearing mittens, but I had not known it as a lethal force of nature that could cause death.

I could feel my movements slowing down, partially because of the exhaustion, partially because of the cold itself, and partially because of the haunting terror that I might be walking in the wrong direction.

Walking four hundred meters in a familiar environment under normal circumstances was not too difficult a task, even for me. However, these were nowhere near normal circumstances. The cold mercilessly pervaded every inch of my being until I had been deprived of all my senses. I could smell nothing but the cold, I could hear nothing but the cold, I could feel nothing but the cold, and I could think of nothing but the cold.

I did not stop to consider the direction I was walking in, or the possibility that I had somehow skipped my house; because such considerations would require a kind of composure that I no longer possessed. The cold air that blew across my face felt colder and colder until it didn't feel at all. My knees grew weaker with every step and each breath felt more painful than the last. My trail of thoughts was disturbed as I heard a sharp click somewhere below my waist. My knees had given out. My legs plunked onto the snow like two bowling pins taken down in one go, forcing me to fall to my knees.

This was how I found myself freezing to death in the middle of the road. My fate was sealed in the very moment that I ventured out into the cold night.

This reckless behaviour was a result of consuming alcohol; even though the pain that I was attempting to wash away still lingered behind the stupor.

I wrapped my fingers around the untethered harness in my right hand and somehow mouthed two words – “Naina... come.” My ears yearned for the sound of barking.

Like all guide dogs at the foundation, Naina had also been taught to recognize that simple command much before we had brought her home. Yet I had rarely ever had the opportunity to use it, because Naina had always been at arm's length. I could be getting up late at night to fetch a glass of water and there she would be – my trusty midnight crusader ready to plunder a new water source. You only need to call for a dog when she is not around, and that had hardly ever happened in the decade long time that I had known Naina. Until yesterday I slowly reached out my left hand and felt around for where her neck should have been. Naina used to have a thick black coat that stood out against the stark contrast of the glistening white snow. Yet it was not the colour but the consistency of her coat that I remember her by. Over the many years that I had bathed her I had become as familiar with the smooth velvety texture of her coat as my own skin.

I tugged on the harness softly, akin to how a child tugs on his mother's coat when requiring assistance.

These simple movements of the harness were all that we needed to communicate. It is hard to believe, but some of the others at the training centers also claim to have achieved that level of bonding with their guide dogs, even if most of their 'conversations' are about their dog's eating habits. In that sense, a guide dog is somewhat like a second pair of eyes; if not the first.

I called out to her again “Naina... good girl...come... home.” My ears searched for a sound that my mind knew was long lost. All I heard was a faint voice in the distance. It was my daughter. She was looking for me.

By this point the cold had ceased to be just cold and made me feel like I was burning up. It was certainly not a good sign but it felt somewhat easier to move. I heaved my hands in front of my body, and began to crawl on all fours. Most wouldn't consider a grown man on all fours to be an elegant display, I did not mind it.

Whether it be children or dogs, we all start out on all fours, but we go on to stand up on our two hind legs so that we may look down upon the world whence we came. The canines are far better in their rejection of the vanity of bipedalism. They live with no regard for pride or dignity- a skill I had acquired only in the face of death. I wished I had walked on all fours all my life. Maybe then I wouldn't have taken the ones I love for granted.

My daughter's voice grew closer and closer, until I felt a blanket being wrapped around me, but I did not feel any less cold. I could somewhat make out her words. They were angry words. She held both of my hands in her own. Her hands were warm, but I did not feel any less cold. I pointed at where Naina should have been sitting and articulated four words with great effort- "Naina... home... outside... cold."

My daughter did not speak a word. She simply held me closer. I felt two warm beads trickle down from her cheek onto my neck. Yet I did not feel even a little less cold. I slowly extended my hands out towards where Naina should've been and leaned my head against where her chest should have been, as I always did when I felt too cold to sleep.

Yet I felt no less cold.

It was the coldest I had ever been.



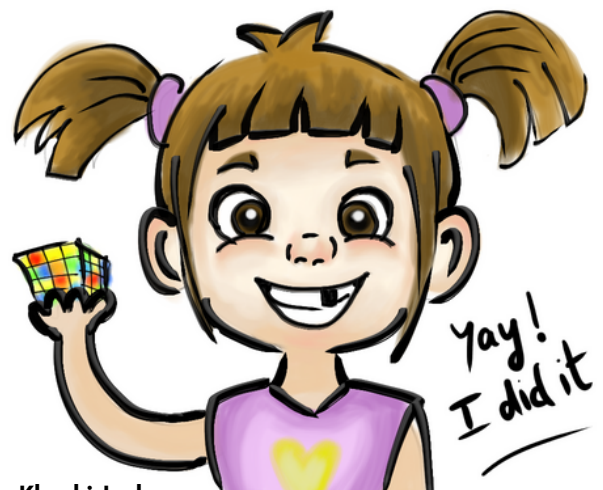
Comics!

I USED TO THINK I
COULD PASS GAS
SILENTLY UNTIL I
GOT MY HEARING
AID.



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THE ADVANTAGES OF BEING
COLOURBLIND



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