

Investigating Post-Traumatic Stress Disorder (PTSD) Triggered by the Experience of Dyslexia in Mainstream School Education?

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Abstract

Purpose: This paper details a study of adult dyslexics, investigating their childhoods and whether emotional trauma took place, and if this resulted in Post-Traumatic Stress manifestations.

Methods: This paper reports on a reflective qualitative/quantitative adult developmental dyslexia study of N=22 who presently or have in the past suffered from depressive disorders, and N=7 control dyslexic adults. All who replied to the recruitment adverts with a valid diagnosis were interviewed. The study compared depressive to non-depressive dyslexics, with gender and academic success variables. Interpretive Phenomenology Analysis was used to investigate dyslexia and Post-Traumatic Stress Disorder (PTSD) from a qualitative perspective.

Results: The study found support for previous empirical studies noting childhood trauma amongst this population, however this study went one stage further an investigated PTSD as a main topic (manifested as adults and parents). Anger and resentment towards their childhood teacher still registered as adults, along with memories of injustice at the hands of childhood educationalists. Much of this anger was at their lack of diagnosis which meant they suffered for many years as having an undiagnosed learning difficulty.

Interestingly the triggers that affected them at present were smell (school cleaning materials), small pictures and small chairs; these produced high levels of anxiety, inferiority and flash-backs which made visiting school for their own children problematic, with some avoiding such situations.

Conclusion: This study identified that emotional trauma took place in all participants, and this resulted in many having Post-Traumatic Stress Disorder manifestations as a result of returning to school for their own children. Participants still noted anger and resentment as adults towards their childhood teachers.

Keywords: Dyslexia; School; Trauma; Post-Traumatic Stress Disorder; PTSD

Introduction

The aim of this wider reflective study was to investigate the various aspects of depression amongst adult dyslexics. In this paper we will investigate the effects of childhood school-based trauma and how it can manifest into symptoms of Post-Traumatic Stress Disorder (PTSD). This aims to understand the high levels of anxiety and trauma experienced by school-aged dyslexics and how it now manifests as adults when returning to school for their own children.

Empirical Review

What is dyslexia?

According to Rose [1] Dyslexia (specific reading disability) is defined as a specific learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Whilst there are many characteristic features of dyslexia, as will be discussed, these focus on difficulties with phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities. It is best thought of as a continuum, not a distinct category, and there are no clear cut-off points. Co-occurring difficulties may be seen in aspects of language, motor co-ordination, mental calculation, concentration and personal organisation, but these are not, by themselves, markers of dyslexia. A good indication of the severity and persistence of dyslexic difficulties can be gained by examining how the individual responds or has responded to well-founded intervention.

Whilst there are many theories to the cause of developmental dyslexia, many believe phonological deficits are a core function [2,3]. Whilst research has looked at a medical-based identification, with

DNA being the most likely [4,5], to date identification has relied upon educational psychologists to diagnose 'dyslexic-type deficits' through a number of sub skill assessments.

Whilst the origins of the condition concerns difficulty with words, modern definitions are broader and this forms disagreements in the field. Symptoms include difficulties in: short-term memory, phonology, rapid naming, balance, motor skills, and organisation.

Current debate on using the term 'dyslexia' is found by the authoritative and influential work by Professors Elliott and Grigorenko [5] which questions whether the interventions used for dyslexics is any different to those for 'reading delayed' children, however they do not refute that many children are leaving primary school without the skills for learning in secondary schools and beyond.

Based on the disparity between the original definition and modern symptom lists, a number of alternative names have been proposed to describe the condition better: Specific reading retardation, reading difficulties, specific reading difficulties, reading disability, learning

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disability, unexpected reading difficulty, and Specific learning difficulties. 75% tend to agree the difficulty is with words, with the remainder noting a broader difficulty with learning.

Reflecting this disagreement, the draft revision to the 5th version of the American Psychiatric Association's 'Diagnostic and Statistical Manual (DSM-5)' originally suggested the term 'learning disorder' to be replaced with 'dyslexia' to 'render APA terminology consistent with international use', describing 'difficulties in reading accuracy or fluency that are not consistent with the person's chronological age, educational opportunities, or intellectual abilities' [6]. However its final version [7] now uses 'Specific Learning Disorder', based on a reasoning that the international conceptions and understandings of dyslexia (and other conditions) exist but disagree on its definition [8]. Elliot and Grigorenko argue that attempts to find a single definition have been hampered by factors of inclusivity, some criticised as being too inclusive and others too exclusive. Rice and Brooks [9] and Fitzgibbon and O'Connor [10] agree that a universally agreed definition and explanation remains elusive, and that definitions to date have been subjective and too broad, and serve self-obsessive purposes.

Whilst dyslexia is widely understood to affect reading, writing, short-term memory and associated traits [3,11,12] there is less information available about how dyslexics interact with society and their environment at large [13-15]. Many ignore dyslexia as a life-long condition that affects individuals from cradle to grave and emotional/psychological manifestations from such a condition.

Alexander-Passe [15], Scott [13], McNutty [16] agree that dyslexia is camouflaged in adulthood, due to advanced coping strategies allowing a sense of normality to be projected. Dyslexics are very conscious of their differences, so create a secondary persona to operate in the wider community [13,15,17]. This persona works the majority of the time; however when it cracks can be highly embarrassing, demonstrates how vulnerable they can be, and confirms their otherness compared to their peers. There is however a shortage of research concerning dyslexia and Post-Traumatic Stress Disorder (PTSD) and this paper aims to shed light on this subject.

Dyslexia and self-esteem

There is strong evidence to suggest that dyslexics suffer from low self-esteem when they fail consistently at school and that deviant behaviour is a common bi-product [11,13,17-22]. Riddick, Sterling, Farmer and Morgan [23] and Peer and Reid [24] agrees that 'frustration leads very often to antisocial or deviant behaviour' amongst dyslexics, especially those with low self-esteem.

Molnar and Lindquist [25] suggests that some pupils may disrupt a class because they interpret the class work as threatening, and use attention seeking to protect self-esteem. That if the teacher, in class with pupils, can re-interpret the nature and purpose of class work (keeping the child's self-esteem), the child's long-term behaviour will change. However most teachers, as Molnar and Lindquist found, hand out reprimands, as the only skill they know that quickly influences a child's present behaviour – a fire-fighting technique.

Riddick [11] argues that self-esteem will also mean the development of a poor or negative self-image. Such beliefs become self-fulfilling prophecies due to the expectation to fail, with Morgan and Klein [26] noting that childhood experiences of being labelled 'thick' and public humiliation caused by failing often results in choices which reinforce low self-esteem.

Whilst specialist schools for dyslexics have been found to improve

self-esteem, especially social and academic self-esteem [27], and Scott [13] also suggests the best improvements in self-esteem comes from literacy, and the improvement of literacy breaks the difference between dyslexics and their peers, as 'difference' is the core problem, no matter if pupils are in specialist or mainstream schools.

Empirical studies note correlations between low self-esteem/anxiety and academic failure [28,29] - more so with dyslexics, as Humphrey and Mullins [30] note 'the experience of dyslexics at school has clear and demonstrable negative effects on the self-concept and self-esteem of children'. Riddick et al. [23] indicated 'the powerful mediating effect of literacy performance on how individuals perceive themselves and are perceived by others', suggesting literacy failure can distort the dyslexic's self-perception.

Brinckerhoff, Shaw and McGuire [31] identified the lack of positive self-concept as being a main and consistent counselling issue that presents itself in people with learning difficulties, with Morgan & Klein [26] noting this is the case in dyslexics. Battle [32] claims that once an individual's level of self-esteem is well established, it becomes difficult to alter and remains relatively stable over time.

Dyslexia and school-based trauma

Edward's [33] study of eight case studies of children attending a specialist private dyslexia school investigated not only how these children felt, but their experiences attending mainstream state schools. The investigation found that the participant's experiences in mainstream education caused them scars, due to the high level of abuse they encountered. Negative experiences at school included wide scale: violence from teachers, unfair treatment/discrimination, inadequate help/neglect, humiliation and teasing/persecution.

These produced various negative reactions, including: truancy/school refusal, psychosomatic pain, and isolation/alienation, lack of confidence, self-doubt/denigration, competitiveness disorders, and sensitivity to criticism and behaviour problems. The study found that whilst they experienced difficulties in the public sector schooling, in the private sector they were able to regain their self-confidence due to teaching methods suitable to their needs, along with opportunities for them to experiment and find their hidden talents. These reinforced their self-belief, that they were able to give positively to society rather than be a burden. The study also noted that other non-academic attributes, such as sensitivity, intensity and loyalty were found in these children which allowed them to deal with their learning difficulties. Humour and stubbornness/ determination was also noted in many, Edwards termed such humour as 'survival humour', as a means to cover-up and move on from negative reactions to their dyslexic type of errors (e.g. getting on the wrong bus or saying something inappropriate). Stubbornness and determination were also featured in many participants in Edwards study, suggesting that they had developed survival strategies to also recover from difficulties doing tasks, rather than using helplessness to give up on tasks which were difficult.

The failing reader must deal with self-doubt which becomes far from being a secret shame, and often becomes a public failure [34]. Osmond [35] found one boy saying 'I know inside I'm not stupid, but I look stupid to everyone else because all the things that I can't do are the things that you have to do at school'. Another young adult dyslexic noted 'the last person to be convinced I was dyslexic was me. I just thought I was thick at school and that it was my fault. I can remember the anger and frustration I felt, especially earlier on, and I still do I suppose, though not as much. I just felt uptight all the time'. This person had grown up thinking he was thick and stupid!

Riddick [11] notes one mother speaking about her dyslexic son *'it was traumatic for him, incredibly traumatic'*, every morning I had to wake him up and faced him screaming *'I don't want to go to school', and then I had to pull him all the way down to school'*. Riddick [11] indicates there is general empirical consensus that children with reading difficulties are more likely to have behavioral and emotional difficulties [36,37].

Post-Traumatic Stress Disorder (PTSD)

According to The American Psychiatric Association [7], the Diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) includes: a history of exposure to a traumatic event that meets specific stipulations and symptoms from each of four symptom clusters: intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. The sixth criterion concerns duration of symptoms; the seventh assesses functioning; and, the eighth criterion clarifies symptoms as attributable to a substance or co-occurring medical condition. The DSM-V diagnostic criteria are indicated in Table 1.

Two specifications are noted including 'delayed expression' and a

'dissociative' subtype of PTSD, the latter of which is new to DSM-5. In both specifications, the full diagnostic criteria for PTSD must be met for application to be warranted.

The 'stressor' from the traumatic event consists of two parts, both of which must apply for a diagnosis of PTSD. The first requires that 'the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others. The second requires that 'the person's response involved intense fear, helplessness, or horror.' According to The UK's Royal College of Psychiatrists [38] many people with PTSD feel grief-stricken, depressed, anxious, guilty and angry after a traumatic experience. As well as these understandable emotional reactions, there are three main types of symptoms or manifestations produced by such an experience as indicated in Table 2.

Dyslexia and PTSD

Alexander-Passe [15,17,39] suggests that ' Post-Traumatic Stress Disorder' (PTSD) in dyslexics can come from various factors, these include: the sudden exclusion from their peer group; intense anger from a teacher or parent, physical bullying at school; realisation that

<p>Criterion A: stressor</p> <p>The person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, as follows: (one required)</p> <ul style="list-style-type: none">• Direct exposure.• Witnessing, in person.• Indirectly, by learning that a close relative or close friend was exposed to trauma. If the event involved actual or threatened death, it must have been violent or accidental.• Repeated or extreme indirect exposure to aversive details of the event(s), usually in the course of professional duties (e.g., first responders, collecting body parts; professionals repeatedly exposed to details of child abuse). This does not include indirect non-professional exposure through electronic media, television, movies, or pictures. <p>Criterion B: intrusion symptoms</p> <p>The traumatic event is persistently re-experienced in the following way(s): (one required)</p> <ul style="list-style-type: none">• Recurrent, involuntary, and intrusive memories. Note: Children older than six may express this symptom in repetitive play.• Traumatic nightmares. Note: Children may have frightening dreams without content related to the trauma(s).• Dissociative reactions (e.g., flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness. Note: Children may reenact the event in play.• Intense or prolonged distress after exposure to traumatic reminders.• Marked physiologic reactivity after exposure to trauma-related stimuli. <p>Criterion C: avoidance</p> <p>Persistent effortful avoidance of distressing trauma-related stimuli after the event: (one required)</p> <ul style="list-style-type: none">• Trauma-related thoughts or feelings.• Trauma-related external reminders (e.g., people, places, conversations, activities, objects, or situations). <p>Criterion D: negative alterations in cognitions and mood</p> <p>Negative alterations in cognitions and mood that began or worsened after the traumatic event: (two required)</p> <ul style="list-style-type: none">• Inability to recall key features of the traumatic event (usually dissociative amnesia; not due to head injury, alcohol, or drugs).• Persistent (and often distorted) negative beliefs and expectations about oneself or the world (e.g., "I am bad," "The world is completely dangerous").• Persistent distorted blame of self or others for causing the traumatic event or for resulting consequences.• Persistent negative trauma-related emotions (e.g., fear, horror, anger, guilt, or shame).• Markedly diminished interest in (pre-traumatic) significant activities.• Feeling alienated from others (e.g., detachment or estrangement).• Constricted affect: persistent inability to experience positive emotions. <p>Criterion E: alterations in arousal and reactivity</p> <p>Trauma-related alterations in arousal and reactivity that began or worsened after the traumatic event: (two required)</p> <ul style="list-style-type: none">• Irritable or aggressive behavior• Self-destructive or reckless behavior• Hypervigilance• Exaggerated startle response• Problems in concentration• Sleep disturbance

Table 1: The DSM-V (APA, 2013) the diagnostic criteria for PTSD.

- Flashbacks and Nightmares - You find yourself re-living the event, again and again. This can happen both as a 'flashback' in the day, and as nightmares when you are asleep. These can be so realistic that it feels as though you are living through the experience all over again. You see it in your mind, but may also feel the emotions and physical sensations of what happened: fear, sweating, smells, sounds, and pain. Ordinary things can also trigger off flashbacks, such as seeing a child's drawing.
- Avoidance and Numbing - It can be just too upsetting to re-live your experience over and over again. So you distract yourself. You keep your mind busy by losing yourself in a hobby, working very hard, or spending your time absorbed in crossword or jigsaw puzzles. You avoid places and people that remind you of the trauma, and try not to talk about it. You may deal with the pain of your feelings by trying to feel nothing at all - by becoming emotionally numb. You communicate less with other people, who then find it hard to live or work with you.
- Being 'On Guard' - You find that you stay alert all the time, as if you are looking out for danger. You can't relax. This is called 'hypervigilance'. You feel anxious and find it hard to sleep. Other people will notice that you are jumpy and irritable.
- Other symptoms such as emotional reactions to stress are often accompanied by: muscle aches and pains, diarrhoea, irregular heartbeats, headaches, feelings of panic and fear, depression, drinking too much alcohol, and using drugs (including painkillers).

Table 2: The three main types of symptom of PTSD (The Royal College of Psychiatrists, 2005).

something unrecognisable is wrong (maybe realising that they are not normal or do not learn normally, being called stupid, lazy etc.). There are two forms of PTSD, which Scott [13] suggest dyslexics suffer. The first is Type 1 (an acute, single-impact traumatic event) and Type 2 or complex PTSD (a series of traumatic events or prolonged exposure to a stress or stressor), both are listed in the DSM-IV [40].

PTSD is a widely researched aspect of psychology [41,42], and is categorised as the sudden and irrevocable perceptive change of the world from one that is safe and predictable to one that is dangerous and random. Individuals are as traumatised as if they had been in a major car crash. Behavioural effects of PTSD come from repetitive and intrusive thoughts and can be triggered by vision, sound and smell [23,43]. Yule, Bolton, Udwin, Boyle, O'Ryan and Nurrish [44] found only 25% of PTSD sufferers had recovered after five years, 33% after eight years and 59% warranted a lifetime diagnosis.

Perrin, Smith and Yule [45] note correlations between a sufferer with PTSD with concentration, memory and reading problems, it is unclear if the PTSD caused such difficulties or whether they were there before, a 'chicken and egg scenario'. Tsui [46] suggests that PTSD is related to academic performance and that the PTSD was the cause. Scott [13] argues it is not clear cut and that PTSD might be caused by the secondary effects of having dyslexia, a view Alexander-Passe supports.

Scott [13] offers a second theory, that of 'daily hassles', an opposite concept of PTSD, in that the stress of daily inconveniences are 'even more perilous in the stress lexicon than major life events'. As noted by Lu [47], Lazarus [48], Chamberlain and Zika [49] the risk of persistent hassles that are endlessly present in the sufferers life are a powerful predictor of psychological distress and has been likened to 'living permanently in a cloud of small, biting mosquitoes' [13]. Morgan and Klein [26] saw that even adults with minor dyslexic symptoms, are placed under greater stress from the constant effort needed to perform ordinary, daily tasks such as reading instructions to understanding conversations. To support such a concept, Winkley [50] asked dyslexics at junior school to rank the most stressful things in their environment? 12 of the 16 stressors mentioned are related to the experience of being dyslexic (getting lost, being left alone, being ridiculed in class, tests and examinations, breaking or losing things, being different, performing in public). Harrison [51] herself a dyslexic, suffered high levels of stress in her own life, in work with a group of PTSD sufferers noticed 'the similarities struck me; although I realise they are not as extreme for me. The social dysfunctionality also is, in them exaggerated, but nevertheless comparable to my own experiences and those I have known with other dyslexics'.

Gilroy [52] notes 'it is obvious that past experiences [of failure] leave a deep scar [33] and that many [adult] dyslexic students have a poor self-concept and suffer from low self-esteem'. Gilroy also details an interesting observation that in a spontaneous, undirected, general

conversation lasting 20 minutes between five adult dyslexic students, the following words and phrases were observed: hopeless at (seven times); useless at (five times); could never (three times); mess (twice); typical me (twice); never been any good at (twice). She points to 'typical' and 'never' suggesting deep-rooted poor self-image stretching back to childhood. Post-observation conversation noted four out of the five students 'often felt that they were thick'.

Scott [13] suggests that unrecognised and diagnosed dyslexic parents can find the horrors and trauma of their own childhood and resulting anger/teacher resentment can resurface when facing their child's teachers, especially when they perceive their child's difficulties are being ignored and such parents need to be careful as their educational helplessness can affect their children and their child's perception of school. Such learned helplessness can include the attitude to homework or towards teachers in general [15,17,53]. Such resurfacing of childhood school-related traumas can lead adult dyslexics to learned helplessness, depression, self-blame and self-harm [13].

Conclusion

Whilst the empirical evidence supports the concept that a negative school experience might trigger low self-esteem and that dyslexics experience not only short-term humiliation but medium-term humiliation from peers and teacher leading to trauma. Little is known about the long-term effects of this school-based trauma. Post-Traumatic Stress Disorder was introduced as a mean of understanding any long-term manifestations. This study will seek to locate and understand this possible correlation further (Dyslexia and Post-Traumatic Stress Disorder), and how related anxiety might be triggered in adults with developmental dyslexia.

Methodology

Sample

Participants were recruited three ways: (1) emails to UK dyslexia newsgroups, (2) adverts on dyslexic web-forums, (3) adverts on dyslexia associations' websites. Four dyslexic sample groups were requested (with/without depression, degree/non-degree educated), with dyslexic adults with depression being largest group replying.

Participants were required to provide evidence of: (1) a formal diagnosis of developmental dyslexia (e.g. educational psychologist/specialist teacher reports), (2) depression (e.g. a clinical depression diagnosis or at least one course of physician/GP prescribed antidepressants). Whilst it should be noted, mild depression is common in society, only severe cases tend to be referred for clinical diagnosis.

The mean age of dyslexia diagnosis data indicated that non-depressives tended to be diagnosed earlier, however in both groups they were mainly diagnosed post-school and after leaving university (Table 3-5).

All participants who responded to the above recruitment paths were interviewed subject to their ability to provide evidence to their developmental dyslexia diagnosis.

Apparatus

An investigative semi-structured interview script was used with N=24 items (Table 6). Interviews lasted between an hour and three hours.

	N	Mean age (years)	Standard Deviation
All	29	40.56	12.67
Depression diagnosis	22	42.32	13.0
No depression diagnosis	7	35.14	10.89
Depressed - females	15	38.8	11.71
Depressed - males	7	49.86	11.32
Non-depressed - females	3	18.0	1.63
Non-depressed - males	4	43.5	6.54
Depressed - dyslexia diagnosis	22	28.09	11.83
Non-depressed dyslexia diagnosis	7	22.28	14.77

Table 3: Sample data: Size, mean age and standard deviations.

Depressed	Age	Diagnosed age of Dyslexia	Gender-male	Gender-female	Degree-educated	Non-degree educated	Depressed at school
Adrian	45	32	X		X		
Brian	70	35	X		X		X
Jasper	59	45	X		X		
Norman	40	33	X		X		X
Anita	47	45		X	X		
Emma	36	25		X	X		X
Maureen	34	27		X	X		
Rachel	40	32		X	X		X
Shelley	61	50		X	X		X
Susan	27	20		X	X		X
Trixie	58	11		X	X		X
George	54	40	X			X	
Ronnie	33	15	X			X	X
Samuel	48	19	X			X	
Andrea	41	39		X		X	
Karen	56	40		X		X	
Kirsty	23	16		X		X	X
Lara	25	20		X		X	X
Milly	37	7		X		X	
Natasha	40	25		X		X	
Norma	29	23		X		X	X
Phoebe	28	19		X		X	X

Table 4: Sample data: Depressed participants.

Non-depressed	Age	Diagnosed age of Dyslexia	Gender-male	Gender-female	Degree-educated	Non-degree educated	Depressed at school
Zara	26	8		X	X		
Harry	52	45	X			X	
Jordan	34	33	X			X	
Malcolm	46	36	X			X	
Peter	42	8	X			X	
Izzy	24	5		X		X	
Jean	22	21		X		X	

Table 5: Sample data: Non-depressed participants.

Please describe how you are feeling today? (Are you taking any depression medication at present?)
 Please describe your life/yourself? (I need to create a description of you e.g. age, education, job, character, personality etc.)
 Do you enjoy life?
 Please describe your childhood? Was it happy? (E.g. with your family)
 Do you have any siblings? Do you think you were treated fairly/unfairly to your siblings?
 Please describe your time at school? Was it enjoyable?
 Did you ever get frustrated from your learning difficulties?
 What does dyslexia mean to you?
 Is dyslexia something positive or negative?
 How does dyslexia affect your daily life?
 What classic dyslexia symptoms to you have?
 Do you think your hobbies help you? Giving you self-confidence?
 Do you ever blame your dyslexia for things?
 Do you/have you ever resented your teachers at school for not seeing your difficulties?
 Do you ever feel rejected? Please explain?
 How does failing or getting things wrong affect you?
 Do you ever say why me? Why am I dyslexic?
 Do/Did you self-harm? Why? What are the triggers?
 Have you ever thought about or tried to commit suicide? Why? What were the triggers?
 Do you think dyslexia and depression are correlated (linked)?
 Did you ever truant/run away from home?
 How do you feel going into schools now, what triggers any negative emotions?
 Do you enjoy being you? Please explain?
 Would you call yourself a successful dyslexic?

Table 6: Book interview script N=24 items.

The Interview process, confidentiality, informed consent and personal disclosure

All participants were sent details of the study before the interview, and all verbally confirmed participation before the start of each recorded interview. Participants were also advised that they could avoid any questions that were too emotional to answer and to halt the interview and their participation in the study without reason; fortunately, no participants took this option. As avoidance was noted in several interviews, further investigative questions were required.

Confidentiality was assured at several points: (1) in the original study advert; (2) in email confirmation/requests for basic details (name, age, education etc.); (3) at the start of each interview, (4) advising participants that pseudonyms names would be used.

Each participant was also reassured that they would receive a copy of their transcript which they would have the opportunity to check and modify. As the interviews concerned participants disclosing emotionally painful or frustrating events it was felt best that interviewer (Alexander-Passe) also disclosed, where required, that he was diagnosed dyslexic at fourteen years old and understood and had experienced many of the difficulties at school that they may have encountered.

Analysis

Each interview was recorded on audio tape, transcribed, spell-checked with minimal grammar changes; lastly a check was made for readability. The transcript was then emailed to each volunteer for them to check and amend if required, with the opportunity for them to add additional notes or post interview revelations, as interviews

can commonly trigger post-interview thoughts. Interviews were then subjected to IPA analysis.

Interpretative Phenomenological Analysis (IPA)

IPA is a relatively recent analysis model but has its historical origins with the phenomenology and Husserl [54] aiming to return to studying living things. This refers to “to return to the things themselves is to return to that world which precedes knowledge, of which knowledge always speaks” [55]. Husserl was very interested in the life-world, comprises of the objects around us as we perceive them and our experience of our self, body and relationships.

Whilst there are many forms of phenomenology in use (Idiographic, Eidetic, and Transcendental), IPA using Idiographic ideals is used in this study. Smith developed Interpretative Phenomenological Analysis [56,57] to analyse elements of the reflected personal experience - the subjective experience of the social world. Giorgi [58] argues that phenomenology avoids the reductionist tendencies of other research methodologies, and uses the researcher’s assumptions/divergent links to inform new insights from the data, rather than forcing data to fit pre-defined categories. Such intuition in the researcher allows ‘outside the box’ thinking. The researcher is an interpretative element to understand themes and body language, compared to Discourse Analysis [59] which relies on precise analysis of the words used.

IPA has been used in many research studies [60-64]. IPA is suitable for this sample due to: (1) Being ‘social model of disability’ and inclusion friendly, aiding understanding in special need samples; (2) Allowing flexibility and the ability for themes from initial participants to inform an investigative interview script; and (3) Dyslexic friendly as it does not rely solely on discourse.

Analysis methodology used in this study

This study predominately uses IPA methodology for analysis of data; however the results from the transformations (themes) were then used to create quantitative data, thus mixing qualitative and quantitative methodologies. Nineteen main themes were identified from transformations in the third stage of IPA and two-hundred feelings or aspects were identified for these nineteen themes, displayed in quantitative percentages. The quantitative data was then used to create tables along with interview evidence in the form of quotes (from mean units from the second IPA stage) are used to form each argument/topic for the results.

Results: Profiles

Profile results from this study are drawn from Table 7.

Overall 65.4% of the sample suffered from PTSD (school avoidance) symptoms in relation to re-entering school and 53.8% experienced anxiety with many feeling powerless like a child (46.3%) in this environment. In detail the PTSD (school avoidance) was triggered by smell (23%), small chairs (15.4%) and child drawn pictures on classroom walls (7.7%).

It was found that males experienced higher levels of PTSD (school avoidance) than females (63.6% to 55.6), along with anxiety (54.5% to 44.4%), likewise this was seen in much higher levels of smell triggers (36.4% to 11.1%, small chairs (18.2% to 11.1%) and pictures on walls (18.2% to 0%). However more females felt powerless like a child in schools (50% to 27.3%).

Higher levels of PTSD (school avoidance) were seen in the depressed to the non-depressed group (63.6% to 42.9%), along with higher anxiety (50% to 42.9%) and feeling powerless like a child (45.5% to 28.6%).

Whilst both degree and non-degree educated participants had the same level of PTSD (63.6%), those with a degree felt anxiety was triggered by school (63.6% to 36.4%), but non-degree educated participants felt powerless in school environments (54.5% to 36.4%). The triggers of smell, small chair and pictures were also higher amongst degree educated dyslexics.

Depressed males were more likely to suffer from PTSD (school avoidance) than females (71.4% to 60%) and likewise school triggered more anxiety in males (57.1% to 46.7%), however interestingly females by far felt powerless in school environments (60% to 14.3%), this may be due to them having to face school as mothers but fathers had more opportunity to avoid such situations.

Results and Discussion: Interview Evidence

Do adult dyslexics still resent their childhood teachers ?

Yes. Do you feel anger towards them? Yes. (Jean).

Generally I don't resent my old teachers, and yes it would be so nice to go back to the teacher who said I wouldn't have a career and show them I now have an HND diploma, but I don't feel there is a need to do that. I don't bare grudges against them. (Milly).

	All %	All males %	All Females %	All Depressed %	Non-Depressed %	Depressed with degree %	Depressed without degree %	Depressed males %	Depressed females %	Non-Depressed males %	Non-Depressed Females %
	N=29	N=11	N=18	N=22	N=7	N=11	N=11	N=7	N=15	N=4	N=3
I resent my old teachers	88.50%	81.80%	77.80%	77.30%	85.70%	63.60%	90.90%	85.70%	73.30%	75.00%	100.00%
I am angry towards my old teachers	65.40%	45.50%	66.70%	54.50%	71.40%	45.50%	63.60%	42.90%	60.00%	50.00%	100.00%
I suffer from PTSD symptoms (avoidance of school as an adult etc.)	65.40%	63.60%	55.60%	63.60%	42.90%	63.60%	63.60%	71.40%	60.00%	50.00%	33.30%
Smells at school trigger my PTSD	23.10%	36.40%	11.10%	22.70%	14.30%	27.30%	18.20%	42.90%	13.30%	25.00%	0.00%
Pictures/paintings trigger my PTSD	7.70%	18.20%	0.00%	9.10%	0.00%	18.20%	0.00%	28.60%	0.00%	0.00%	0.00%
Small chairs trigger my PTSD	15.40%	18.20%	11.10%	13.60%	14.30%	27.30%	0.00%	14.30%	13.30%	25.00%	0.00%
Returning to school triggers my anxiety	53.80%	54.50%	44.40%	50.00%	42.90%	63.60%	36.40%	57.10%	46.70%	50.00%	33.30%
I feel like a child when I go into schools	46.20%	27.30%	50.00%	45.50%	28.60%	36.40%	54.50%	14.30%	60.00%	50.00%	0.00%

Table 7: Post-Traumatic Stress Disorder.

At the secondary school, there was a constant emphasis on my weaknesses, so you become very aware of that. **Have you ever resented your teachers for not recognising your problems growing up?** Yes. **Do you feel anger towards them?** I probably do, it was sort of talked about at different stages, but it was not picked up in primary school until I reached secondary school in Scotland, but that came to nothing as it wasn't followed up [with action]. (Norman).

I have...I felt resentment and hatred towards my teachers for a number of reasons; whether it is for the specific reason of not seeing my difficulties, I do not know. It was the easiest thing to do nothing and that is what they did. (Peter).

Yes. I think possibly, the only negative bit is, if I have achieved so much without the help, what the 'hell' could I have achieved with the help. I think that's sad, the anger, the frustration, the lost opportunity and the unnecessary pain and humiliation I went through, wasn't actually necessary. (Shelley).

I feel very angry, because of what I had done, I was a senior staff nurse before I even 'came out of the closet' officially and told people, but I never had it formally assessed at 15 years old and nobody properly knew what it was. I screened positive when I was 15 years old, and they turned round and said that I had poor visual and hearing memory, but refused to label me because it was deemed to be inappropriate, it was in 1976, labelling wasn't the done thing. (Anita).

Yeh, but I kind of understand that at the time it wasn't known as much, probably I wasn't severe enough for them to notice and also because I hid them as well. I feel resentful but at the same time, I can't feel completely resentful because I did hide a lot of stuff. I normally hid in the back of the class room and managed to not hand in any homework, because they thought I was stupid, you know it just wasn't important for me to hand in homework [to be marked]. Yeh, I did lose books [on purpose as a cover]. (Norma).

The interview evidence above is quite clear that many dyslexics resent their teachers for not seeing their dyslexia, they ask 'what could I have been with diagnosis and help' and also resent teachers for lack of professionalism. Teachers are viewed as having a lot to answer for. But was it the teachers fault? Wholly their fault? Several dyslexics in the UK have sued their local educational authorities for the failing of their 'duty of care' in educating them, and many have been paid out a lot of money. Yes there are incompetent teachers, and are rarely are struck off the teaching register. Normally they are given a shining reference and told to move onto another school.

So are dyslexics right to be angry and resentful towards teachers who missed their diagnosis. Yes and no. Yes their teachers missed it, but each year another set of teachers also missed it, so in total it may be 30 teachers missed their learning difficulties, so one could argue incompetence on a grand scale? What is actually wrong is the teaching system at school and teacher training? The current system could be viewed as a 'band-aid' approach. Teachers and schools fire-fight SEN as they do not have the budgets to put in place precautionary measures. The UK government has now reintroduced 'baseline assessments' for all pupils entering primary school, so academic progress can be tracked and early interventions introduced [65].

What might trigger PTSD in dyslexics when re-entering school again?

The smell of the school, I hate it, the small chairs, and the paintings in the corridors. No disrespect to the artists, but it reminds me of being outside the headmaster's office, in trouble again. (Adrian).

I felt strange going in there, especially when one of my old teachers came up to me and talked to me as he remembered me. I remember thinking 'you stand there being so nice to me after the traumas that you are participated in'. **Did you feel belittled by them? Inferior?** I am having an attack now just thinking about it! I did not feel belittled as an adult, but I did as a child. I felt very angry towards them and I am very much of the thought that one should not be two faced. **Did the smell or layout trigger things for you?** When I walked in there, I felt tense and I sort of panicked as I began to look around for people who would know me. I began to get flashbacks to my time at the school and the traumas, being told off and being belittled. (Anita).

What would trigger things is if I heard a teacher shouting, or 'balling' at children. I stand there and my initial reaction is to tense up, freeze and then I kind of want to go into that classroom and hit the teacher and say 'leave them alone and what do you think you are doing!' (Emma).

It is just that when you walk through the doors you feel like a different person, you kind of feel like that again [a small child]. You forget that you are twenty-three-years old and have done all these things. You think that you are twelve or thirteen again and you have to face a school where no one likes you. **The smell doesn't trigger things?** It can. You get the sense of being there again. **Noise of the children?** Its everything, you just feel you are back there drowning again. (Kirsty).

I hated working with teachers because I feel that they were judging me and I am stupid, I think because my teaching is so specialist I know more than they do, so they can't criticise me for something that I'm actually the expert for. I always feel I'm in detention as I need to wait outside the headmasters office and I've been doing this for the last 4yrs [teaching in schools] and I'm still scared of the head teacher, in all the schools I work in. (Lara).

Smell. Layout of chair? Anything really. When I go to my daughter's primary school, it is the smell, the chair layout, chair scraping, and noise from the kids. (Malcolm).

With your child, how do you feel going into schools? I had transferred the fear of dyslexia onto my son, yeh he had also been listening to my mum or dad about stuff. Going back into school, for my son, brings back feelings of my time there. He tells me off for some of things I say, as it does trigger off my anxiety about being at school and the way teachers are, but he, my son, generally gets on with his teachers, he builds up good relationships with them, but I was withdrawn [at school] doing that. (Maureen).

I live next door to a school, so it's the sound probably, all the kids running about. I think it is funny I live next to something I hate more than anything. When I have been into schools, the smells, the sort of plasticine, chalk smell, that sort of stuff. We had meetings in a small classroom there, the small chairs and especially all the stuff pinned into the wall also evoked things into me. **What did that trigger?** It triggered not particularly pleasant memories. I think things like my work was never pinned to the wall and my stuff was never put up into the corridor and stuff like that. **So feeling that your work was not worthy enough/not good enough for presentation?** Yes. (Norman).

I found it quite difficult [going into my child's school] it actually reminded me of being back at school as a child, I didn't do it on many occasions, yeh in their school life it was only twice, with two kids going through school I only went in two or three times, that's it. I think a lot of it [the triggers to fear/emotion] was the smells, how it was set out. When you go through the doors it just sets off the memories of when I was at school. (Samuel).

Discussion

The advantages of using a reflective study such as this one, was the ability to ask adults about their childhoods and any long-term reactions. PTSD (school avoidance as an adult) is one such expression of reactions and denotes emotional responses to once feared stimulus which resulted in a deep trauma. In this study, school and returning to school for ones child's education is the feared stimulus and suggests that such a fear is the long-term manifestation of trauma from their own time at school; trauma delivered by the bullying of teachers and peers in mainstream education setting.

Smell is one of the main input senses in humans and is a powerful source of data to the human brain, in this study it was a main stimulus. The smell of school can vary from the strong sickly floor cleaner used, plastercine and to the aroma of lunch that can drift through open-plan schools. Interview evidence suggests this triggered anxiety and caused apprehension.

The second emotive stimulus was seeing small school chair. From the interview data one understands that the vision of a small chair in school triggers not only feelings of being small, but inferiority feelings and being victimised by others especially teachers. Being small, weak and vulnerable, describes how many dyslexics view school, especially primary school. They were vulnerable to humiliation along with being powerless or helpless to change the factor to advocate for themselves.

The third stimulus was the sight of pictures and paintings on walls. Evidence suggests that pictures on the walls of the classroom and hallways of the school triggers PTSD reactions of inferiority and public comparison with peers. Malcolm noted in his interview that his teachers faked his work and didn't displays the real work as it was rubbish in their eyes and would have reflected badly on the school. Others like Norman noted that pictures triggered PTSD because their work was never worthy of display.

Evidence suggests that many dyslexics go into child mode whenever they are around teachers, as one noted *'it was as if the last twenty years had never happened'*, they transformed back to a small child even though they were a degree-educated adult. Even Lara who teaches in schools, feels a little girl again, withdrawn and in detention whenever she needs to sit outside the headmaster's office before meetings. Rachel notes she has these same belittling feelings with doctors and another medical staff, a feeling of not being worthy and that others are more intelligent than she is.

Conclusion

This paper began with a literature review looking at: What is Dyslexia, Dyslexia and Self-esteem, Dyslexia and School-based trauma, Post-Traumatic Stress Disorder, Dyslexia and PTSD.

The wide empirical review looked at various aspects of the childhood experiences of dyslexics, which focused on negative school experiences (humiliation and bullying by teachers and peers) resulting in low self-esteem and other emotional manifestations from school-based trauma. Strong empirical evidence supports the concept that developmental dyslexics experience at school creates scars that can have life-long effects, however these life-long effects are rarely investigated.

Post-Traumatic Stress Disorder was introduced as a means to understand the life-long effects of this school-based trauma, relating to 10 years or more in mandatory education, of continual failure and lack of differentiated learning. It was also noted that the scars could affect the adult dyslexic, as they return to the feared stimulus in regard to their role as a parent, resulting in helplessness.

This paper reported on a qualitative study of N=29 adults with developmental dyslexia, N=22 (75.86%) diagnosed depression and N=7 (24.14%) controls. Interpretative Phenomenological Analysis (IPA) was used as a means to understand the data and to locate themes held within.

Overall 65.4% of the sample suffered from PTSD (school avoidance) symptoms in relation to re-entering school as parents, resulting in anxiety with many feeling powerless like a child, triggered by smell, small chairs, and child drawn pictures on classroom walls.

It was found that males experienced higher levels of PTSD (school avoidance) than females (63.6% to 55.6), along with anxiety (54.5% to 44.4%), likewise this was seen in much higher levels of smell triggers (36.4% to 11.1%, small chairs (18.2% to 11.1%) and pictures on walls (18.2% to 0%). However more females felt powerless like a child in schools (50% to 27.3%).

Interestingly, both degree and non-degree educated participants had the same level of PTSD (63.6%), those with a degree felt a greater anxiety was triggered by school (63.6% to 36.4%), but non-degree educated participants felt more powerless in school environments (54.5% to 36.4%). Therefore the triggers of smell, small chairs and pictures were also higher amongst degree educated dyslexics.

Qualitative data were introduced to the paper to exemplify the experiences encountered, looking at: Do adult dyslexics still resent their childhood teachers? What might trigger PTSD in dyslexics when re-entering school again?

The resentment and anger from their childhoods were found to manifest into physical and emotional reactions when re-entering school as an adult, now as a parent. A majority in this study suffered from PTSD (Post-Traumatic Stress Disorder) as they exhibited reactions to their childhood trauma triggered environment.

In many cases this came when re-entering school to meet teachers for their own child's education. PTSD relies on human senses to trigger anxiety and other reactions, and in this study smell was the strongest stimulus, followed by seeing small classroom chairs, then lastly seeing small pictures, which set off reactions of either anxiety or feelings of being a small helpless child again. PTSD from school should not be underestimated, as the school is where most dyslexics experienced traumas day after day, year after year, being forced to go there by their parents and by law. Normally PTSD is caused from short-term abuse or effects of a battlefield, but in the case of dyslexics, it is the result on 10 years of legally enforced mandatory education. The embarrassment and humiliation in the classroom by peers and authoritative figures such as teachers are strong experiences, which stay with people for the rest of their lives. Overall, males experienced the highest frequencies of PTSD with smell followed by small chairs and small pictures equally their triggers to their anxiety.

Higher PTSD was also found in depressive males with smell being the main stimuli, compared to non-depressive males. Overall females tended to only have problems with authoritative figures, especially teachers and felt a 'small and helpless' child again waiting outside the headmaster's offices for meetings.

The longevity of such emotions, even after many years of desensitization, can be exemplified by one dyslexic special needs teacher who still has problems waiting outside the headmaster's office for meetings, after being a teacher for many years in many schools.

How should dyslexics cope with PTSD relating to their child's education?

What should adult dyslexics do to cope with their PTSD regarding

school? Malcolm had a terrible time at school and cried when talking to his dyslexic children's teachers, especially in their primary school where he felt helpless to get the help they so badly needed. However surprisingly in their secondary school he has taken a more pro-active approach. His two eldest sons are at a newly-established secondary school and he volunteers as a parent governor. This way he was able to make changes and feel useful and energised into making the changes required for all SEN students to achieve their potential.

He has been a governor there for many years and now has been promoted to a non-parent governor, as the school themselves value his abilities and contribution. As a dyslexic who has struggled in life, in his career, and was unable to go to college or university, this was a real achievement and he has managed to see his children's schooling in a positive light - he has dealt with his PTSD in a positive and proactive way.

The moral of this is to combat your PTSD to go back into school and be proactive to make changes, especially when it affects your child's education. Parents can help out in classrooms, join the PTA (parents/teachers association), or be a governor. Most schools will welcome proactive parents more than ones that continuously moan to them about what they are not doing. So dyslexics should be proactive to affect change in their child's education, this way they will overcome their own helplessness.

Limitations

Whilst N=29 participants took part in the study, N=22 were diagnosed as depression and N=7 had no depression diagnosis. The Alexander-Passe took the viewpoint that the vast majority of the participants (N=29) suffered one or more depressive symptoms, and that the study would not label any quotes as from a depressive and others from a non-depressive, as this would be misleading and lead the reader to make assumptions.

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