The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 9, Issue 1, January- March, 2021
DIP: 18.01.122/20210901, DOI: 10.25215/0901.122
http://www.ijip.in

Research Paper

Relationship between optimism, resilience and learned helplessness in parents of children with neurodevelopmental disorders

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ABSTRACT

In recent times there has been an increase in the number of Child Development Centres and aid for children who have Neurodevelopmental Disorders. There is now more awareness about Learning Disabilities, Intellectual Disabilities, Autism Spectrum Disorder and Attention-Deficit/Hyperactivity Disorder (ADHD). Parents of children who have Neurodevelopmental Disorders reach out to various Child Development Centres (government institutions or private centres) to help their children in whatever way they can. Even though Child Development Centres provide a ray of hope to these parents, raising a child with special needs can be very financially and more importantly emotionally straining. There have been studies that indicate that parents of children with Neurodevelopmental Disorders are prone to have parental stress, anxiety and even depression. The present study aims at determining the relationship between Learned Helplessness, Optimism and Resilience (Parental Resilience) among parents of children having Neurodevelopmental Disorders. The data collection for this study was conducted through a non-probability purposive sampling technique to select 157 parents of children with Neurodevelopmental Disorders from several Child Development Centres in Hyderabad. The children were aged between 3 to 14 years. The following questionnaires were employed to collect the data: Learned Helplessness Questionnaire (Quinless & McDermott-Nelson, 1988), Life Orientation Test-Revised (Carver, C. S., (2013) and the Family Resilience Scale (revised) (Kaner & Bayrakli 2010). The results of the study revealed that parents who have children with Neurodevelopmental Disorders do experience higher levels Learned Helplessness and comparatively lower levels of Parental Resilience and Optimism.

Keywords: *Learned Helplessness, Optimism, Parental Resilience, Neurodevelopmental Disorder, Parents*

Neurodevelopmental Disorders are defined as a group of disorders in which the development of the central nervous system is disturbed. This can include developmental brain dysfunction, which can manifest as neuropsychiatric problems or impaired motor function, learning, language or non-verbal communication

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Received: January 14, 2021; Revision Received: March 16, 2021; Accepted: March 28, 2021

(Neurodevelopmental Disorders. (n.d.). The history of such disorders provides us with examples of alarming methods of treatment that 'clinicians' used to use, some methods of treatment included Trephination (used almost 7,000 years ago), bloodletting and purging (in the 1600s), isolation and asylums (in the 17th century), insulin coma therapy (in 1927), Metrazol therapy (in 1934) and lobotomy (during the 1950s). Fortunately, such barbaric methods of treatment are not employed in today's day and age and people across the world have become familiar with what Neurodevelopmental Disorders are and more importantly what are the causes of these disorders. Research and the setting up of Child Development Centers have both assisted in the treatment process of Neurodevelopmental Disorders.

Recent times have seen a considerable increase in the number of Child Development Centres catering to children with Neurodevelopmental Disorders. With regard to research, numerous research studies on Neurodevelopmental Disorders have also been published which have broadened our understanding of these disorders. For example, a research study published in 2001 by Philip J. Landrigan, Luca Lambertini, and Linda S. Birnbaum titled 'A research study to discover environmental causes of autism and Neurodevelopmental disabilities', shed light on the environmental causes of autism and as a result provided some clarity as to why autism and other Neurodevelopmental Disorders occur.

Research and Child Development Centres that specialise in Neurodevelopmental Disorders have helped, to reduce a lot of the ambiguity concerning these disorders. However, the increase in Child Development Centres cannot completely eliminate the fact that raising a child who has a Neurodevelopmental Disorder is extremely taxing. Parents of children having any Neurodevelopmental Disorder can experience emotional stress, physical strain and financial stress (Anderson et al., 2007).

Though our understanding of Neurodevelopmental Disorders has advanced leaps and bounds in theory, there is little to no doubt that in practice raising a child with special needs requires a lot of effort from the parents. It is no easy feat to raise a child who has difficulty in performing every day-to-day activity, and especially in a world that is increasingly becoming more competitive. There have been studies that show that parents of children with Neurodevelopmental Disorders can suffer from depression and anxiety. A study by M. B. Olsson and C.P. Hwang stated that parents who have intellectually disabled children are prone to feelings of depression (Olsson et al., 2008). To combat the anxiety and the high stress levels, it is important for an individual to possess Resilience and Optimism. The current study's purpose is to gain insight into the relationship between Optimism, Learned Helplessness and Resilience (Parental Resilience) in parents of children with Neurodevelopmental Disorders. The main purpose of this study is to look into whether Optimism and Resilience can decrease the levels of Learned Helplessness which is used as a screening tool for clinical depression. Optimism is defined as an emotional and psychological perspective on life. It is a positive frame of mind and means that a person takes the view of expecting the best outcome from any given situation. The most commonly used optimism concept is known as Dispositional Optimism which is the general tendency to expect more positive outcomes as opposed to expecting more negative outcomes. Optimism is a result of both a combination of environmental and genetic factors. Research studies have indicated many positive outcomes that are associated with optimism some of them include: better mental and physical health, motivation, performance and personal relationships (Conversano et al.,2010). In general, an optimistic person is better equipped to cope with the

stressors in his or her life. Those who have Dispositional Optimism are more prone to show more persistence and use an approach focused way of coping with short term and long-term stressors (Norem.,2013). Stressful events are an inevitable component of life and so they can't really be prevented or ignored, it is better to inculcate an apt learning mechanism to combat stress (Taylor et al., 2011). A person who has Dispositional Optimism will lean to a positive emotional focused coping mechanism (Strutton et al.,1993). Emotional approach coping which is a commonly used coping mechanism focuses on emotional expression and processing to adaptively manage a response to a stressor (Stanton et al.,2012). Instead of taking actions to change the stressor itself, the individual tries to control feelings using a variety of cognitive and behavioral tools, some of them include meditation and other relaxation techniques, prayer, positive reframing and wishful thinking (APA Dictionary of Psychology. (n.d.). Though problem solving coping mechanism is a much better coping mechanism in the long run, emotional focused coping mechanism has been proven to calm a person down and reduce anxiety especially when the cause of the stress isn't immediately identified by the individual or simply when the individual does not have any control over the stressor. Other types of optimism apart from Dispositional Optimism are: Unrealistic Optimism, Comparative Optimism, Situational Optimism, Strategic Optimism, Realistic Optimism and Optimism Bias. According to the research conducted in the field of Positive Psychology, people who are optimistic experience quite a few benefits, some of them include: experiencing less distress, adapting better to negative events, more conducive to problem solving coping, less use of denial and are more accepting of their situation. In addition, optimists also practice more health promoting behaviours and are also very productive in work environments. All the benefits of optimism indicate that those who are optimistic live a healthier and happier life and are able to cope with stressful events better than those who lack optimism (Solberg et al., 2006).

Research studies have indicated that there is a positive relationship between Optimism and Resilience. The occurrence of stressful events can either pull us down or motivate us to fight harder. Being hopeful and thinking positively about the outcomes of events isn't enough to combat life's stressors, however the ability to bounce back from difficult experiences can aid tremendously in overcoming these inevitable stressors. Resilience according to the American Psychological Association is defined as the "process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress – such as family and relationship problems, serious health problems or workplace and financial stressors". Resilience is best described as the phenomenon in which an individual bounces back from a stressful event. Resilience is a brilliant quality to have, however this quality is not rare and research has shown that people commonly demonstrate resilience. During natural disasters and terrorist attacks for example, people have demonstrated the ability to bounce back, and it is this innate quality of human beings that has kept us alive. The quality of bouncing back isn't an extraordinary characteristic; in fact, it is quite ordinary. Unlike certain traits, resilience isn't a trait that one has or doesn't have i.e., resilience can be learned and developed in anyone (Resiliency: You're Not Born with It, You Develop It. (2016, January 28). There are several factors that contribute effectively to resilience. One of the key factors that contributes to resilience is having a positive view of yourself and confidence in your abilities and strengths, therefore self-efficacy plays a major role in aiding in inculcating resilience (Hamill et al.,2003). Self-efficacy is the defined as an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments. Research has indicated that there is a positive relationship between having belief in oneself and positive thinking i.e., a positive relationship between self-efficacy and optimism (Rand

et al., 2017). If individuals are optimistic, then their ability to bounce back will also increase. Other than self-efficacy, another important factor that contributes to resilience is having a supportive and loving family. Strong and long-lasting relationships create love and trust which in turn provides the required encouragement and reassurance to help boost resilience. Collectivism which has been described as a cultural syndrome has been linked to the building of strong relationships and prosocial behavior (Chadda et al.,2013). People who live in a collectivistic society are interdependent on each other. People in a collective society adopt a less self-centered approach of living in comparison to the western world. Indians, Chinese, Japanese and a lot of Asian communities are a part of the collectivistic society, making their interpersonal relationships strong and hence making them more resilient as compared to people in an individualistic society (Cherry, K. (n.d.). Understanding Collectivist Cultures). As discussed above optimistic people focus on positive emotional approaches in order to cope with stressful situations, and since resilience also requires an individual to be aware of their emotional reactions; there is a definite positive correlation between these two variables as resilience is highly dependent on optimism. While resilience and optimism help in combating and overcoming stressors, the feeling of helplessness occurs when one encounters stressful events for a long period of time. Learned helplessness described by Martin Seligman (1965) is a mental state in which "an organism is repeatedly subjected to an aversive stimulus that it cannot escape. Eventually, the organism will stop trying to avoid the stimulus and behave as if it is utterly helpless to change the situation. Even when opportunities to escape are presented, this learned helplessness will prevent any action" (Learned Helplessness: Seligman's Theory of Depression, 2018).

Martin Seligman first discovered this mental state while experimenting with dogs by giving them electric shocks. Seligman noticed that the dogs didn't try to escape the shocks if they had been conditioned to believe that they couldn't escape. The same feeling of learned helplessness can be attributed to human beings through Seligman's theory of depression (McLeod., 1970). In order to understand the theory of depression that Seligman proposes, it is important to look at the two kinds of helplessness that Seligman proposed: Universal Helplessness and the other is Personal Helplessness. Universal helplessness is a sense of helplessness in which the subject believes nothing can be done about the situation she or he is in. The individual believes no one can alleviate the pain or discomfort. On the other hand, personal helplessness is a far more personal sense of helplessness; the subject may believe others could find a solution or avoid the pain or discomfort, but he believes that he, personally, is not capable of finding a solution (Abramson et al., 1978). Both universal as well as a personal sense of helplessness can lead to depression; however, the quality of depression is different. A feeling of universal helplessness leads a person to attribute the cause of his/her depression to external factors; whereas an individual suffering from personal helplessness is more likely to internalize the reasons for his/her depression. Low self-esteem is a common occurrence in people who experience personal helplessness and also tend to have a more impactful emotional deficit. According to Seligman's theory of depression there are two additional factors that add to a difference in the quality of depression. Those factors are: generality (global vs. specific) and stability (chronic vs. transient) (Learned Helplessness: Seligman's Theory of Depression, 2018).

A person suffering from global helplessness experiences negative impacts in several areas of life and not in only one area. These individuals are highly prone to experience severe depression than those who have a more specific feeling of helplessness. Individuals who suffer from helplessness for longer periods of time tend to experience the effects of

depression than those who have experienced helplessness for shorter periods of time. This model of depression by Seligman provides crucial implications for depression; depression due to helplessness will take place when: (a) highly desired outcomes are believed to be improbable and/or (b) highly aversive outcomes are believed probable, and (c) the individual has no expectation that anything she does will change the outcome, depression results (Learned Helplessness: Seligman's Theory of Depression, 2018). These three implications indicate that in the presence of helplessness depression can occur. The quality of depression will differ based on the factors that were discussed above i.e., generality and stability of the helplessness, and any impact on self-esteem is dependent on how the individual explains or attributes their experience (internally or externally). Seligman identified through his proposed theory of depression that chronic helplessness was one factor that led an individual to experience depression. Interestingly Seligman also managed to propose the Theory of Learned Optimism, which is the polar opposite and an antidote to the Theory of Learned Helplessness. Seligman proposed that people could learn to be optimistic through Resilience Training (Reivich et al,. 1970). Through Seligman's theories of: Learned Helplessness, Depression and Optimism; there appears to be an apparent relationship between the variables of Learned Helplessness, Optimism and Resilience. Research also indicates this to be true. A study of whether optimism predicts resilience in repatriated prisoners of war was conducted by Francine Segovia, Jeffrey L. Moore, Steven E. Linnville, Robert E. Hoyt and Robert E. Hain in 2012 (Francine et al., 2012). The sample of the study comprised of the longest detained American prisoners of war those who were held in Vietnam in the 1960s and 1970s. A logistic regression analysis using resilience, defined as never receiving any psychiatric diagnosis over a 37 year follow up period. Six variables were tested, and the one variable that was the strongest was optimism. Akshay Malik published a paper titled "Efficacy, Hope, Optimism and Resilience at Workplace"- Organizational behavior in 2010. The paper attempted to define positive organizational behavior and outline the role of self-efficacy, hope, optimism and resilience in maintaining positive behavior in an organization. The focus of the paper was directed towards giving practical suggestions for creating a workplace that is conducive to being confident, hopeful, optimistic, resilient and promotes a sense of well-being. Stuart Collins's research study on "Social workers, resilience, positive emotions and optimism" published in 2008 attempted to study the effect of optimism on resilience in social workers, to see if positive thinking would help them cope with life's stressors. Tali Heiman studied in 2002 the variables of Resilience, Coping and Future expectations in Parents of children with disabilities. Thirty-two parents were interviewed, the questions examined various aspects of family ecology domains: parents' responses to the child's diagnosis; patterns of adjustment; family support and services used by parents; and parents' feelings and future expectations. Though it was found that most parents had to make changes in their social life and expressed high levels of frustration and dissatisfaction, many try to maintain their routine life. The majority expressed the need for a strong belief in the child and in the child's future, an optimistic outlook, and a realistic view and acceptance of the disability. The study highlighted the importance of social resources and support, and the need for effective programs of intervention (Heiman, Tali., 2002. Parents of Children with Disabilities). Through research studies one can clearly observe a positive relationship between Optimism and Resilience. There is however a negative correlation between Learned Helplessness, Resilience and Optimism. A study titled "From Helplessness to Optimism: The Role of Resilience in Treating and Preventing Depression in Youth" by Karen Reivich, Jane E. Gillham, Tara M. Chaplin and Martin E. P. Seligman in 2012 attempted to prove that depression or anxiety could be reduced by resilience and thereby aid children to cope in difficult situations that they will face in adulthood. Learned Helplessness has been positively

linked to depression, a study on patients referred to a psychiatric hospital was conducted. It was observed that "fixed behavior and thought patterns" (Learned Helplessness) of these patients are imprinted and evoked by depression (Seligman et al., 1974). While learned helplessness boosts the feeling of depression, the opposite could be said about optimism. In a study titled "Building optimism and preventing depressive symptoms in children" by Gillham, J. E., Reivich, K. J., and Shatté Andrew, studied the interventions that may foster optimism and build resilience to depression in children and adolescents (Gillham,. et al 2001).

From the above research studies conducted, it is quite evident that Optimism, Resilience and Learned Helplessness are variables that are positively and negatively correlated. There appears to be an evident positive correlation between Optimism and Resilience and an apparent negative correlation between the variables of Optimism and Resilience with the variable of Learned Helplessness.

Sample

The sample consisted of 157 parents of children with four types of Neurodevelopmental Disorders, namely: Attention deficit/ hyperactivity disorder (ADHD), Autism spectrum disorder (ASD), Intellectual disability (ID) and Specific learning disorders (SLD). It was made sure that each group contained a minimum of 30 parents; 42 questionnaires were collected from parents who have intellectually disabled children, 47 questionnaires were collected from parents who have autistic children, 32 questionnaires were collected from parents who have children with ADHD and 36 questionnaires were collected from parents who have children with specific learning disorders.

Instruments

1. Informed Consent Form

Participants were given an Informed Consent form that briefed them about the study. It was made sure to take each participant's consent before they were given the questionnaires to fill in. The form included the researcher's Email ID in-case the participant had any questions after he or she had submitted the questionnaires.

2. Demographic Data sheet

Participants were asked to respond to items inquiring about their educational qualification, occupational qualification, age, gender, ethnicity, religion, family type, family size, physical health status, the type and severity of the disorder that their child has, the age at which the child's disorder was diagnosed and the age at which the child enrolled into a child development centre.

3. Learned Helplessness Scale (LHS) by Quinless and Nelson

The Learned Helplessness scale by Quinless, F. W., & Nelson is a 20-item scale to assess learned helplessness. Each response for each of the 20 items was rated on a 4-point Likert scale ranging from strongly agree (1) to strongly disagree (4). The range of possible scores is from 20 (low learned helplessness) to 80 (high learned helplessness). The higher the score on the scale, the greater the degree of learned helplessness in the respondent.

The scale was first seen in a Nursing Research Journal. A standardized alpha reliability coefficient of .85 was obtained for a sample of 241 healthy adults. There was a positive correlation between the LHS scores and Beck's Hopelessness Scale (HS) scores (r = .252)

and a negative correlation between the LHS scores and Rosenberg's Self-Esteem Scale (SES) scores (r = -.622). These correlations were in the direction postulated by various theorists. A Varimax-rotated factor analysis of the LHS data yielded five factors. Three of these factors tapped content relevant to the attributional styles of learned helplessness. Clinical data were also obtained on samples of oncology, haemodialysis, and spinal cord patients. Because the alpha reliability coefficients of the LHS and the Pearson product moment correlation coefficients between the LHS and the HS and the LHS and the SES were in the same direction, the instrument is believed to have adequate internal consistency (W. Quinless et al.,1998).

4. Life Orientation Test – Revised by Carver, C. S.

The Life Orientation Test Revised (LOT-R) is a 10-item measure of optimism versus pessimism. Of the 10 items, 3 items measure optimism, 3 items measure pessimism, and 4 items serve as fillers. Respondents rate each item on a 4-point scale: 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree. Responses to "scored" items are to be coded so that high values imply optimism.

Hirsch, Jameson K, Britton, Peter C Conner and Kenneth R examined internal consistency and test-retest reliability of a measure of dispositional optimism, the Life Orientation Test-Revised, in 121 opiate-dependent patients seeking methadone treatment. Internal consistency was adequate at baseline (alpha = 0.69) and follow-up (alpha = 0.72). Test-retest reliability was good (ICC = 0.72), varying across gender, race, ethnicity, education, employment and income (ICC Range = 0.24-0.85). Criterion validity was strong; the LOT-R was significantly negatively correlated with hopelessness (r = - 0.65, p less than 0.001) and depression (r = -0.60, p less than 0.001). The Life Orientation test has good reliability and validity and can be used across all ages, races and genders (Hirsch et al., 2009).

5. Family Resilience scale by Hatice Bayraklı and Sema Kaner

The Family resilience scale by Hatice Bayraklı and Sema Kaner is a Turkish scale that is used to assess resilience in parents. It consists of 34 questions and is rated on a 5 point Likert scale. The Family resilience scale does not have cut off scores that can be assessed as high or low resilience. The maximum score is 170. Any score close to 170 is indicative of high resilience.

To develop this scale the following method was used: The subjects of the study consist of parents of 524 children (105 parents of children with disability and 419 parents of children with no- disability). 318 participants were mothers and 206 were fathers. Mean of parents' chronological age was 38.86 (SD: 7.45) ranging from 20 to 63. Eighty-seven resilience items were written based on the literature. Kaner and Bayraklı's Mother Resilience Scale and Gürgan's Resiliency Scale have made important contributions to FRS. In addition to some items taken from these two scales, new items were also written. The items were administrated to the parents. Respondents were asked to rate their level of resilience by using 5-point Likert-type rating scale (defines me very well=5, never defines me=1. Correlations between the scores of FRS and Parental Self-Efficacy Scale and Rosenbaum's Learned Resourcefulness Scale were (0.18-0.50, $p<0.001$) and (0.45-0.58, $p<0.001$) respectively revealed high validity. Divergent validity coefficients between FRS and Beck Depression Inventory were significantly negative (-0.18 and -0.36, $p<0.0001$). The Cronbach alphas, Spearman-Brown split half and test-retest coefficients were 0.54-0.91, 0.53-0.87 and 0.33-0.80 respectively, revealed a good reliability. Overall results have

indicated that FRS is a reliable and valid assessment instrument that can be used to assess parents' perceptions of resilience (Sema et al.,2010).

6. Translation of Family Resilience Scale into English

The Family Resilience Scale was translated into English from Turkish by a Turkish native speaker who was fluent in English. Then, the translation of the questionnaire was sent to Professor Hatice Bayraklı via email. Both the original version of the questionnaire and the back translation into English were cross checked. Only after Professor Hatice Bayraklı approved of the English version of the scale, was it given to the participants of this study.

Procedure

The researcher used the questionnaire method and a structured interview method to collect data. The researcher approached different Child Development Centres and only after permission was granted, subsequently approached the parents of child who have Neurodevelopmental Disorders. Two age groups of children were taken, one ranged from 3 years to 8 years and the other from 9 years to 14 years. Care was taken to approach parents who have children belonging to these two age groups only. The mean age of the parents was 35.75 years. The sample was taken within the city of Hyderabad and the sampling method used was Purposive sampling. Respondents were informed that participation was voluntary and that the information provided by them in the questionnaire will be highly confidential. The participants were requested to answer the questions with complete honesty. They were also informed that there was no definite time limit to finish the questionnaires. Care was taken to gently familiarize the parents as to what the study was about. Different Child Development Centres had different rules and regulations when it came to approaching the parents; care was therefore taken to follow the instructions given by the management of different Child Development Centres while collecting data. Two demographic data sheets were handed to the parents, one that pertained to them and the other consisted of a few questions regarding their child.

RESULTS

Table No. 1: Correlation between Learned Helplessness (LH) and Optimism (OP) in all four groups of Neurodevelopmental Disorders [Learning Disabilities (SLD), Intellectual Disabilities (ID), Autism Spectrum Disorder (ASD) and Attention- Deficit/Hyperactivity Disorder (ADHD)]

	Optimism			
Learned Helplessness	ADHD	ASD	ID	SLD
	-.51**	-.71**	-.73**	-.57**

****p**< 0.01

As seen in Table No. 1 there is a significant negative correlation between the variables of Optimism and Learned Helplessness in the four groups of Neurodevelopmental Disorders. It can be observed that for ADHD the correlation is -.51, for ASD it is -.71, for ID it is -.73 and for SLD it is -.57. The strongest correlation observed in the Table above is for ID.

Table No. 2: Correlation between Learned Helplessness, Parental Resilience and Optimism of Neurodevelopmental Disorders.

	Parental Resilience			
	ADHD	ASD	ID	SLD
Learned Helplessness	-.49**	-.54**	-.83**	-.76**
Optimism	.67**	.71**	.73**	.45**

As seen in Table No. 2 there is a significant negative correlation between the variables of Parental Resilience and Learned Helplessness in the four groups of Neurodevelopmental Disorders. It can be observed that for ADHD the correlation is -.49, for ASD it is -.54, for ID it is -.83 and for SLD it is -.76. The strongest correlation observed in the Table above is for ID.

We also see in Table No. 2 that there is a significant positive correlation between the variables of Parental Resilience and Optimism in the four groups of Neurodevelopmental Disorders. It can be observed that for ADHD the correlation is .67, for ASD it is .71, for ID it is .73 and for SLD it is .45. The strongest correlation observed in the Table above is for ID.

Figure No. 1: Correlation between the variables of Optimism, Parental Resilience and Learned Helplessness

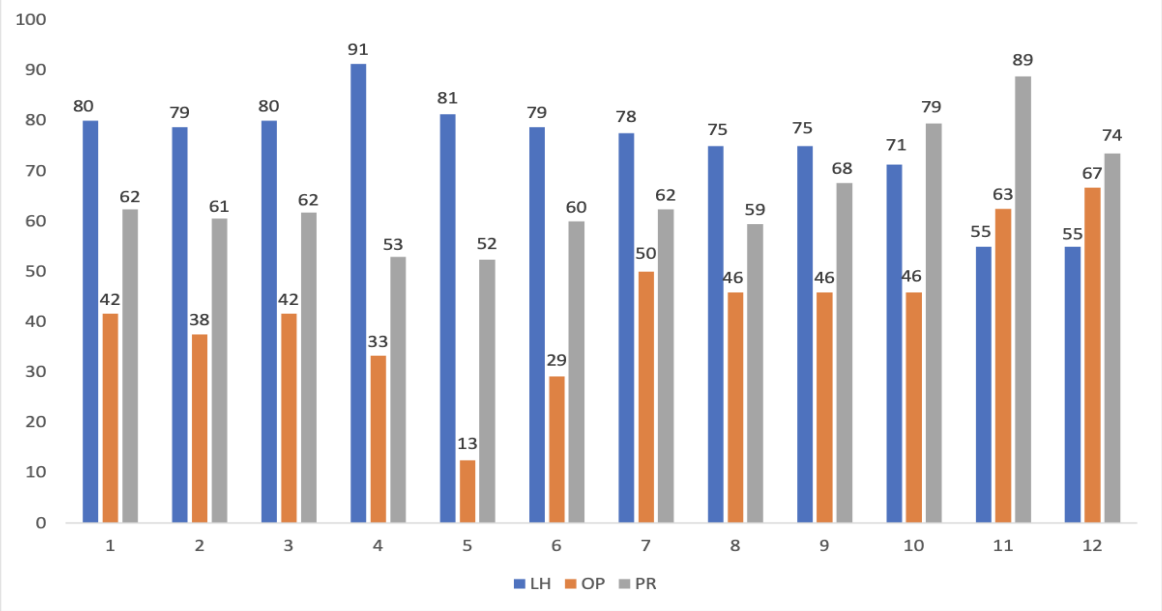

Figure No. 1 displays the relationship between the three variables of Learned Helplessness (LH), Optimism (OP) and Parental Resilience (PR) in parents who have children with Intellectual disabilities. It can clearly be seen that when Learned Helplessness is high, the variables of Optimism and Resilience are intern negatively affected. Conversely it can also be observed that a high level of Parental Resilience positively affects the level of Optimism the individual experiences.

Table No. 3: Mean, standard deviation and t value of Learned Helplessness, Parent Resilience and Optimism based on age for parents and children.

	Parents			**Children**		
	25-35 Mean (SD)	**35-45 Mean (SD)**	***t***	**3-8 Mean (SD)**	**9-14 Mean (SD)**	***t***
Learned Helplessness	121.02 (23.54)	114.39 (24.08)	1.73	13.14 (3.87)	14.13 (3.82)	1.57
Parental Resilience	50.15 (10.96)	52.66 (9.30)	1.52	52.14 (10.47)	50.00 (9.98)	1.28
Optimism	13.98 (3.83)	13.00 (3.88)	1.57	116.80 (23.53)	119.91 (24.59)	0.79

Table No. 3 shows that there is no significant difference between both age groups for parents (25-35 and 35-45) and children (3-8 and 9-14) with regard to the variables of Learned Helplessness, Parental Resilience and Optimism. This indicates that Optimism, Parental Resilience and Learned Helplessness are almost identical, therefore it can be said that parents no matter what age experience similar levels of Learned Helplessness when it comes to coping with their child's disability.

Table No. 4: Mean, standard deviation and t value of Learned Helplessness, Parent Resilience and Optimism based on gender for Intellectual Disability and Specific Learning Disorder.

	Intellectual Disabilities			**Specific Learning Disorder**		
	Males Mean (SD)	**Females Mean (SD)**	***t***	**Males Mean (SD)**	**Females Mean (SD)**	***t***
Learned Helplessness	53.05 (8.03)	62.13 (7.41)	**3.80****	48.35 (11.70)	51.04 (9.28)	0.76
Parental Resilience	14.10 (3.19)	9.34 (3.15)	**4.83****	14.71 (2.86)	12.27 (3.05)	**2.39***
Optimism	123.73 (20.08)	103.91 (13.68)	**3.79****	121.00 (28.34)	121.54 (26.07)	0.05

***p**<0.01, ****p**<0.05

Table No. 4 shows that there is a significant difference between both genders with regard to the variables of Learned Helplessness, Parental Resilience and Optimism in parents who have children with Intellectual Disabilities (*p<0.01). There is also a significant difference between both genders with regard to the variables Parental Resilience in parents who have children with Specific Learning Disorder (**p<0.05).

Table No. 5: Mean, standard deviation and t value of Learned Helplessness, Parent Resilience and Optimism based on gender for ADHD and ASD

	Intellectual Disabilities			**Specific Learning Disorder**		
	Males Mean (SD)	**Females Mean (SD)**	***t***	**Males Mean (SD)**	**Females Mean (SD)**	***t***
Learned Helplessness	47.16 (10.55)	49.65 (11.88)	0.59	46.85 (9.37)	48.74 (7.03)	0.78
Parental Resilience	125.83 (22.27)	110.75 (31.29)	1.45	15.00 (3.53)	14.56 (2.69)	0.48
Optimism	15.91 (2.93)	14.20 (5.12)	1.05	119.70 (24.00)	122.51 (19.93)	0.43

Table No. 5 above shows that there is no significant difference between the age groups of children and its effect on decreasing or increasing the variables of learned helplessness, optimism and parental resilience. Parents who have older children experience the same feeling of learned helplessness as those who have younger children. This shows that whether the child is 3 years old or 14 years old, the parent doesn't learn to cope with the feeling of helplessness no matter how long or short the time period is. Time therefore doesn't help parents to cope with the feeling of Learned Helplessness.

Table No. 6: Showing mean, standard deviation and F value of Learned Helplessness, Parent Resilience and Optimism based the mild, moderate and severe degrees of Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD) Intellectual Disabilities (ID) and Specific Learning Disorder (SLD).

	ADHD, ASD, ID and SLD.			
	Mild Degree Mean (SD)	**Moderate Degree, Mean (SD)**	**Severe Degree Mean (SD)**	**F**
Learned Helplessness	49.56 (10.78)	551.68 (10.14)	52.81 (10.20)	0.79
Parental Resilience	118.85 (25.10)	117.26 (24.43)	121.25 (18.09)	0.21
Optimism	14.00 (3.90)	13.46 (3.81)	12.94 (4.31)	0.48

Table No. 6 shows that there is no significant difference in the variables of Learned Helplessness, Parental Resilience and Optimism in parents with respect to the severity of the disorder the child has. This is indicative of the fact that whether the child experiences a milder form or a more severe form of a disorder, there is no significant increase or decrease in the levels of Learned Helplessness experienced by the parent.

DISCUSSION

The present study's aim was to study whether parents who have children with Neurodevelopmental Disorders, experience learned helplessness and whether those who have higher levels of Optimism and Resilience have lower levels of Learned Helplessness compared to those who don't have high levels of Optimism and Resilience.

As seen in the analysis of the results through Pearson's Product Moment Correlation, there is a negative correlation between Learned Helplessness and Optimism as well as between Learned Helplessness and Parental Resilience. The results of Pearson's Product Moment Correlation also indicate that there is a positive correlation between Optimism and Parental Resilience. This relationship between the variables of Optimism, Learned Helplessness and Parental Resilience is clearly indicated in all four categories of Neurodevelopmental Disorders (ADHD, SLD, ID and ASD).

From empirical data of the present study, it can be seen there is a clear indication of higher levels of Learned Helplessness lowering the levels of Optimism and Parental Resilience. However, the variables of Optimism and Parental Resilience are dependent on each other, there is a symbiotic relationship between the two variables. If an individual has a high level of Optimism, he or she will also experience a higher level of Resilience in comparison to a person who does not have a high level of Optimism.

With regard to differences in the age and gender of parents, there was no significant difference in the extent to which Learned Helplessness is experienced. The t test analysis results showed that there was no significant difference in the levels of Learned Helplessness, Parental Resilience and Optimism with regard to the gender of the parent whose child had Attention Deficit/ Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD) and Specific Learning Disorders (SLD). However, there was a significant difference in the levels of Learned Helplessness and Parental Resilience in parents of Intellectually Disabled Children (ID). There was also a significant difference in the Levels of Parental Resilience in parents of children with Specific Learning Disorders.

The t test analysis results showed that there was no significant difference in the levels of Learned Helplessness, Parental Resilience and Optimism with regard to the age of the parent whose child had Attention Deficit/ Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), Specific Learning Disorders (SLD) and Intellectual Disabilities (ID). Similarly, as shown by the t test analysis the age group of the child also did not have an effect on the levels of Learned Helplessness, Parental Resilience and Optimism experienced by the parent. Therefore, the gender of the parent and the age of both the child and the parent, did not affect the levels of Optimism, Learned Helplessness and Parental Resilience experienced by the parents of children with Neurodevelopmental Disorders.

One way ANOVA was also used to analyse whether the severity of the disorder that the child had, would have an effect on the levels of Optimism, Learned Helplessness and Parental Resilience that the parent experienced. The results of One-way ANOVA concluded that the severity of the disorder has no apparent effect on the levels of Optimism, Learned Helplessness and Parental Resilience experienced by the parent.

This study reveals that though there is a relationship between the variables of Learned Helplessness, Optimism and Parental Resilience, the levels of Learned Helplessness, Optimism and Parental Resilience experienced by the parent are not dependent on the age of the parent, age of the child and gender of the parent.

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Acknowledgement

I would like to extend my gratitude to my supervisor Ms. Geetha Sunkarapalli from St Francis College for Women, who guided me during my research for the present study. I would like to sincerely thank Professor Hatice Bayrakli for helping me tremendously during my research for the present study. It was a pleasure translating a Turkish scale (Family Resilience Scale) into English and hopefully this newly translated English version of Family Resilience Scale will be of use to other researchers. I would also like to sincerely thank my classmate Merve Aydin for helping me to translate the scale into English. I would also like to extend my gratitude to Associate Professor Mohammed Sajeed from Shadan Institute of management studies who assisted me in translating three questionnaires into Telegu so that the parents who didn't understand English were able to participate in this study. I am also grateful to the Psychology department of St Francis College for Women and also all my classmates who have given me endless support while conducting the research. I would also like to sincerely thank all the participants who gave me their valuable inputs and time for my study. Last but not the least I would like to extend my gratitude to my parents as without their encouragement and support I wouldn't have been able to conduct this study successfully.

Conflict of Interest

The author declared no conflict of interest.

How to cite this article: Katrak B.K. & Sunkarapalli G. (2021). Relationship between optimism, resilience and learned helplessness in parents of children with neurodevelopmental disorders. *International Journal of Indian Psychology*, *9*(1), 1165-1180. DIP:18.01.122/20210901, DOI:10.25215/0901.122