



THERAPY WITH FIDGET: EFFICACY OF FIDGET SPINNER AS A THERAPEUTIC TOOL FOR YOUNG ADULTS WITH ANXIETY

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This paper reports on the research carried out through an experimental method. It focuses on determining the efficacy of fidget spinner as a therapeutic tool for young adults with anxiety. Fidgets were introduced as stress releasing instruments, though no scientific evidence has been found yet. With technology increasing every day, if a home tool like a fidget spinner evidently succeeds to reduce anxiety, it can also be used in professional settings. To check the efficacy of fidget spinner, a 15-day intervention on a sample size of 30 young adults has been briefly discussed in the paper. The results obtained mostly show a positive effect of using fidget spinner on the levels of anxiety of the participants. Hence, convenient and affordable tools like fidget spinners can be used to benefit ourselves in the comfort of our homes.

Index Terms - Anxiety, fidget spinner, therapeutic tool, ADHD

I. INTRODUCTION

Anxiety during adolescence is very common. Experts believe that the square measure of anxiety is caused by a combination of both biological and environmental factors, similar to polygenic disease. Changing friends, moving, getting into relationships or losing a parent can trigger the onset of anxiety disorder. These disorders are treatable medical conditions that have an effect on one in eight children (Anxiety Disorders Association of America). According to Erik Erikson, in his psychosocial stages of development, young adults need to form intimate, loving relationships with other people. During this stage, the major conflict centers on forming intimate, loving relationships with other people. As a result, there is a certain complexity faced due to which young adults can lead to anxiety, loneliness and sometimes depression because unsuccessful completion of this stage.

Fidgeting on the other hand, includes wiggling with one's fingers, adornments, hair, pen or individual articles. It is a reaction to tension or dullness restless wiggling occurs because of the body having raised degrees of stress hormones, that set up our muscles for quick real effort (Karlesky & Isbister, 2013). Research at the University of Hertfordshire in 2005 by Karen Pine, found that fidgeting improved execution in memory tests and this could be because of it bringing down the measure of cortisol, a pressure emission that meddles with learning. Researchers have conjectured that fidgeting is a method for dealing with stress the body utilizes to advance normal energizer discharge, empowering the psyche to concentrate on undertakings. As explained by Roland Rotz and Sarah D. Wright in their book *Fidget to Focus*, fidgeting can help avoid distractions caused by boredom.

The first prototype of the Fidget Spinner was created by Catherine Hettinger from Florida back in the year 1993. She invented it as a communication method to interact with her daughter, who is disabled. Later, she even patented the design in the year 1997 and tried to sell the device as therapeutic device for children suffering from ADHD (attention deficit hyperactivity disorder), anxiety and autism. These spinners are tiny ceiling fans in the hand, having a spinning ring in the middle which is held by the thumb and rotated within the hand. These gained popularity as it claimed to increase attention and concentration and also act as a stress reducing agent. While fidget spinners are a new phenomenon, existing therapy toys (e.g. sensory putty, stress balls) have been used by occupational therapists for similar reasons, with comparably little research supporting these claims.

II. RATIONALE

Nevertheless, some retailers have made claims that the fidget spinner has health benefits such as reducing stress, post-traumatic stress disorder (PTSD), depression and attention deficit hyperactivity disorder (ADHD) (Lee, 2017). There appears to be no empirical research on the fidget spinner that support any specific security statements. There appears to be a dearth in finding out

the benefits or adverse effects of using fidget spinners. It needs to be scientifically addressed if Fidget Spinners can be used in the therapeutic settings.

The relationship between elevated rates of activity in ADHD is pervasive, as the disorder is associated with increased movement and fidgeting (Corkum, Tannock, & Moldofsky, 1998; Rapport, 2009). Very few studies have been done on fidget spinners that include the effect on motor skills of fidget spinners in children with ADHD. Few other papers have also been written focusing on the drawbacks of using a fidget spinner, such as ingestion by children of these spinners. Fidget spinners have been used to alleviate ADHD and relieve stress. I want to link it to the component of anxiety because there has been no clear study on the impact of fidget spinners on anxiety. Anxiety is growing among children in society, and it gets overlooked particularly in India. Anxiety increases when children feel they have no control over things, making them feel insecure. Fidgeting due to anxiety is a real problem. It is a strong indicator that children are not getting enough movement throughout the day. I need to find if a small toy can actually help to reduce anxiety in children.

III. REVIEW OF LITERATURE

There do not seem to be any scientific studies that justify any specific health claims about the fidget spinner. While a new way to fidget is not necessarily a bad thing, some are concerned that the fidget spinner may be a more obvious and thus distracting way to fidget. It's one thing to spin your pen, but another thing to have a mini-ceiling fan in your hands. (Lee, 2017). Fidgeting, defined as the generation of small movements through nervousness or impatience, is one of cardinal characteristic of ADHD. This controversy stems from the fact that fidget spinners are being currently marketed as devices that may help in increasing focus and attention, as well as general stress relievers. As such, studies relative to fidgeting with objects like stress balls and doodling have emerged, further demonstrating the positive effect of fidgeting on both attention and concentration (Cohen, Bravi, & Minciocchi, 2018). As some of the fidget spinners have ball bearings that can be dangerous for small children to play with, the Consumer Product Safety Risk Management System's injury and potential injury database recorded 13 cases of fidget spinner ingestion. This directed to assumption that kids with genuine conduct or mental difficulties and findings might be at more danger of accidental ingestion than those kids without a fundamental developmental disorder.

Initially fidget spinners were introduced to calm people with anxiety, stress, autism and were mostly focused people with ADHD. With the rapid increase in the popularity of fidget spinners in 2017, many children and teenagers began using them in school, and some schools also reported that students were trading and selling the spinner toy. Although most toys are routinely banned from school settings, many schools still allow fidget spinners for students with sensory issues. As indicated by Scott Kollins, PhD, a clinical therapist and educator at Duke College, the purpose behind the prevalence of fidget spinners is on the grounds that guardians want to believe that there is a basic gadget to help their child focus (Dawis, 2017). In spite of the fact that instructors yield that a few understudies may profit by utilizing them in the study hall, others keep up that fidget spinners are frequently misused and work as a type of amusement as opposed to a treatment gadget (Scotti, 2017). A classroom intervention study resulted that fidget spinners negatively influence young children with ADHD's attentional functioning. Along these lines, the clinical ramifications are clear in that instructors, doctors, and psychological wellness experts ought not advocate for the utilization of fidget spinners in the study hall setting (Graziano, Garcia, & Landis, 2018).

The benefits and adverse effects of fidget spinners haven't been measured scientifically to an extent where these can be used in a therapeutic setting. Another study was done which concluded certain benefits and adverse effects of using a fidget spinner which included improved attention in ADHD children and also a choking hazard for young children (Schecter, Shah, Fruitman & Milanaik, 2017).

IV. THEORITICAL FRAMEWORK

Uneasiness in the day today life is significantly increasing, particularly in the lives of young children as it influences their psychological, physical and social prosperity. Anxiety has been an integral part of the human personality. It most frequently utilized to portray an unpleasant state or condition which is characterized by subjective sentiments of pressure, trepidation and worry, by actuation or excitement of automatic nervous system (Spielberger, 1966). For illustration, in both anxiety and ADHD, the person might have trouble concentrating or relaxing. For treatment purpose, short-term CBT interventions help people to change their thinking patterns in order to positively influence their behaviour. Practicing methods, such as stress balls, dynamic muscle unwinding, visualization, and deep-breathing can offer assistance to treat stress and anxiety by abating the heart rate, lessening muscle pressure, and boosting concentration and disposition. Jewellery or pens have been an effective tool for people who fidget, to see what effect fidget spinners create in young adults with anxiety would be the primary focus of this research.

As per Erik Erikson's theory of psychosocial stages of development (1950s), an individual's development is influenced by biological, psychological and social factors throughout the lifespan. The process of development has been explained through eight stages, in which each stage is defined by two opposing psychological tendencies – one positive and one negative e.g. stage one, the infancy period: trust versus mistrust (secure environment provided by the caregiver increases a sense of trust which will be carried to their other relationships). Similarly, the sixth stage of development includes the young adulthood period which has been termed under intimacy versus isolation. During this stage, young adults feel the need to form intimate, loving relationships with other people by getting married or developing significant relationships. The major conflict centres on forming such committed bonds because these can be a source of affection in young adulthood through which a person may find emotional benefits. According to Erikson, successful completion of this stage may result in happy relationships; develop a sense of commitment and safety. Though sometimes, certain amount of complexity is faced by young adults that can lead to anxiety, poor relationships, isolation and long-term feelings of loneliness because of unsuccessful completion of this stage. They can begin to feel insecure or confused about relationships and how they fit into building a connection. Success at this phase leads to feeling secure in making fulfilling relationships. Failure during this phase on the other hand leads to loneliness and poor romantic relationships. Hence, this particular age group can be a direct target for conducting the experiment and expecting genuine results.

V. RESEARCH METHODOLOGY

5.1. Design

This study is based on quantitative research with an experimental design to scientifically test the effects of fidget spinner on anxiety. There are two variables in this study: the independent variable as the fidget spinning and the dependent variable as the level of anxiety. The relationship between these variables was tested by conducting a paired t-test. A pre-test was conducted before the intervention to measure the levels of anxiety in the participants, followed by a post-test conducted after the intervention for 15 days.

5.2. Sample

During the pandemic, a group of 30 adults were selected through convenient and voluntary sampling. All the participants belonged to North Kashmir and the languages known included: Urdu, English and Hindi. The group was split in half, with one being the experimental group and the other being the control group. Equal number of males and females were part of both the groups. The age range kept for the sample purpose was 18 – 25 years of age (supported by Erikson's theory). Few of the participants were students, while the rest of the participants had regular jobs. Due to the pandemic, certain protocols had to be followed, so proper instructions and precautions were to be taken while experimenting.

5.3. Tools

Studies have focussed on anxiety disorders of university students, some areas of their manifest anxiety, like academic anxiety, job anxiety, death anxiety and so on. One of the most common scales is State-Trait Anxiety Inventory (STAI) as it's the most widely used cross-cultural anxiety measure. It comprises separate self-report scales for measuring state and trait anxiety. The S-Anxiety scale (STAI Form Y-1) consists of twenty statements that evaluate how respondents feel "right now, at this moment." The T-Anxiety scale (STAI Form Y-2) consists of twenty statements that assess how people generally feel. In this research, we are interested in the state anxiety of the participants. Anxiety state (S – Anxiety) here refers to an emotional state which exists at a given moment in time and at a particular level of intensity. While as, Trait anxiety (T - Anxiety) refers to differences between people in the tendency to perceive stressful situation as dangerous or threatening and to respond to such situations with elevations in the intensity of their state anxiety.

The essential qualities evaluated by the STAI S-Anxiety scale are feelings of apprehension, tension, nervousness, and worry. In addition to assessing how people feel "right now," the STAI S-Anxiety scale may also be used to evaluate how they felt at a particular time. By the standardization of Form Y, the S-Anxiety scale was administered in this research. In responding to the STAI S-Anxiety scale, examinees blacken the number on the standard test form to the right of each item-statement that best describes the intensity of their feelings: (1) not at all; (2) somewhat; (3) moderately so; (4) very much so. Each STAI item is given a weighted score of 1 to 4. A rating of 4 indicates the presence of a high level of anxiety for ten S-Anxiety items. A high rating indicates the absence of anxiety for the remaining ten S-Anxiety items. The scoring weights for the anxiety-present items are the same as the blackened numbers on the test form. The scoring weights for the anxiety-absent items are reversed, i.e., responses marked 1, 2, 3, or 4 are scored 4, 3, 2, or 1, respectively. Scores for the S-Anxiety scale can vary from a minimum of 20 to a maximum of 80.

5.4. Procedure

The study was conducted in North Kashmir, India. The participants included had an age between 18 – 25. The group consisted of both males & females. Due to COVID-19 pandemic, certain safety measures such as social distancing was implemented. The participants were informed about the purpose of the research and were free to be the part of the research on voluntary basis. Every participant was treated equally irrespective of their differences in gender, ethnicity or language. It was taken care that no participant was harmed because of the study whether mentally or physically. The participants were administered with S – anxiety scale. Before using the fidget spinner as an intervention, a pre-test was administered to check the anxiety level of the participants using the S – anxiety scale. After the initial assessment, the fidget spinner was provided to each participant for using it to a maximum time of 15 minutes every day. The fidget spinner was taken back from each participant after 15 minutes of usage in order to avoid any dependency. The participants were made to use the spinner for 15 days. The total time spent on fidgeting was recorded to be 3 hours and 45 minutes. The intervention took place in the presence of the researcher to control any possible extraneous variables. After using the fidget spinner for 15 days as an intervention, a post-test using the same scale was done on the participants. The intervention was designed to focus on what changes occur in the anxiety levels of the participants after using fidget spinners. To determine the efficacy of fidget spinners as a therapeutic tool against anxiety in young adults was the main objective of conducting this intervention. Fidget spinners were introduced as a tool to reduce anxiety with no proper evidence of them proving to be a therapeutic tool. This intervention had a primary focus on anxiety unlike the experiments done previously by researchers which focused mostly on ADHD and choking due to ingesting fidget spinners by children. This particular intervention on the other hand, can act as fundamental research for relating the efficacy of fidget spinner as a therapeutic tool in relevance to anxiety specifically (for the reason they were introduced in the market).

VI. RESULTS

6.1 Results of Paired Sample Statistics (Experimental group)

Table 6.1: Paired Sample Statistics

		M	N	SD	SE
Pair 1	Pre test	48.47	15	10.796	2.788
	Post test	39.33	15	11.293	2.916

6.2 Results of Paired Sample Statistics (Control group)

Table 6.2: Paired Sample Statistics

		M	N	SD	SE
Pair 1	Pre test	40.87	15	9.920	2.561
	Post test	45.20	15	9.894	2.555

6.3 Results of Paired Sample Differences (Experimental group)

Table 6.3: Paired Sample Differences

95% interval difference									
		M	SD	SE	Lower	Upper	T	df	p
Pair 1	Pretest - Posttest	9.13	10.64	2.74	3.24	15.02	3.32	14	0.005

6.4 Results of Paired Sample Differences (Control group)

Table 6.4: Paired Sample Differences

95% interval difference									
		M	SD	SE	Lower	Upper	T	df	p
Pair 1	Pretest - Posttest	4.33	4.337	1.12	6.73	1.93	3.87	14	0.002

The results were achieved using SPSS Statistics software. The mean for both the pre and posttests in both the groups itself suggest that there is a significant difference in both the results attained. The p-value was found to be 0.005 for the experimental group and 0.002 for the control group which is less than .05, hence suggesting that the data is significant i.e., the data wasn't obtained by chance and that the null hypothesis can be rejected. In the paired samples test, the t-value was calculated to be 3.32 for the experimental group and 3.87 for the control group. Hence, a reduction of anxiety level was observed in 11 participants out of the total 15 participants in the experimental group. Two of the participants showed no change in their anxiety levels and the rest of the two showed an increased anxiety level. However, there is a significant change in the reduction of anxiety levels in the experimental group against the control group as no reduction in the anxiety level was seen in the control group. Thus, the results mostly prove that using a fidget spinner will help reduce anxiety in adults with a significant amount of difference.

VII. DISCUSSION

The primary focus of this experiment was to determine how will using fidget spinners affect the levels of anxiety in young adults. With the framework of Erikson's Intimacy v/s Isolation in young adults, the concept of anxiety serves as a bottom-line for this research. This stage points out the struggle young adults have as they try to develop intimate, loving relationships (Syed & McLean, 2017). As adults in this stage strive to create emotional bonds, the failure to do so results in isolation i.e. avoiding intimacy (Holland, 2019). Hence, self-destructive cycles (not opening to others) may lead the person to have an outlet for feelings of stress, sadness, anxiety or even depression. Emotional fluctuations are often the most common cause for anxiety (Cisler., Olatunji., Feldner., & Forsyth, 2010). The benefits and adverse effects of fidget spinners haven't been measured scientifically to an extent where these can be used in a therapeutic setting. To cover the gap in this field of research, this study can be helpful for planning future interventions using fidget spinners. The particular age group of young adults in this experiment makes it easier for us to apply the fidget spinner intervention in terms of monitoring the levels of anxiety. Moreover, as the research was conducted during pandemic, a minimal level of general anxiety can be assumed to be present in the participants which may have also affected the results.

VIII. LIMITATION

Fidgeting makes an emotional connection to an object, which to a few degrees can serve as a substitution to having a genuine human accessible. Enthusiastic associations are a fundamental human require, which individuals in portion can fulfil with a favourite cover, ball, toy or cloth. Being exposed to the same tool everyday might become boredom for children, hence resulting in withdrawal from the study. It may or may not lead to dependency as well. This study was done on 10 participants in order to follow the protective protocols during the pandemic. The study may not be generalised for a larger group of population. Though it can act as a foundation for researchers who wish to conduct similar experiments using fidget spinners on a different target population. Keeping this experiment in consideration, timer-based spinners can be created as a therapeutic tool which successfully reduces anxiety and also doesn't create any dependency.

IX. CONCLUSION

Technology is taking over the world and people are getting busier every day. Even for taking care of the health, many people find it hard to take out time from their busy schedules. Finding a resource which can be both helpful and convenient is the ultimate goal of a person these days. These spinners can be used as a therapeutic tool in a particular setup under professional or parental supervision. This experimental model can be further used for extensive research by R&D (Research and Development) companies in order to understand the fundamental working process of using fidget spinners. These finding can further be supported by corporate investors in order to assist or guide the entrepreneurs in the hope that new innovations will result in benefits. Various companies that create educational toys can play their role by creating awareness through ads, making the customers mindful of the therapeutic properties of fidget spinners. This research intervention can act as a base for future intervention studies catering a larger group of population. Hence, a therapeutic tool like a fidget spinner or stress ball, which is affordable to buy and conveniently usable at the comfort of your home is something that people with anxiety issues can easily take benefit from.

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