

Immersive Virtual Reality Exposure Therapy for Social Phobia among Management Students

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ABSTRACT

Purpose- Human's are social creatures. we interact into bond with friends, engage with coworkers, and interact up in relationships. Besides, we indeed interaction with other people but, for Students with social anxiety disorder(especially Stage Fear) may has an way to make them feel inferior which may results in stress and anxiety. It is this where virtual ideality therapy icon helps.

Research Methodology-Final Year Management Students with is principal diagnosis of social anxiety disorder(those who have stage fear) were identified randomly and were recruited from the class of 25 chosen as volunteer with an age gap of average 21(Age group 21-22). An explanatory research design was involved with participants assigned into and completed 8 sessions of manualized virtual ideality exposure therapy. Standardized self-report measures were collected and analyzed in pretreatment and post treatment, and diagnostic status was reassessed for it 3-month follow-up.

Findings - Our study results indicated that Virtual reality exposure therapy positively impact on MBA final year Students who have experienced Social anxiety(stage fear), drastically decreased over a period of time, confidentially

Conclusion- Virtual reality exposure therapy resulted in regaining the lost confidence among chosen students . Early detection and intervention is highly recommended to help them and with Immersive VR can play a major role in eradicating students with fear of public speaking which can be implemented at institute level which is simple, cost effective and drastically will improve their confidence level provided Institutional support guaranteed by becoming an Innovative solution of Current Research by using futuristic emerging Technology

Keywords- Virtual Reality ,exposure therapy, social phobia, cognitive behavioral therapy, Students

I. INTRODUCTION

People are inherently social. We band collectively in social corporations at work or in college, awe pair up

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in relationships and bond with friends over sports activities games. We even go out of our manner to enroll in on-line games or social media corporations itemed around is commonplace hobby. It's far this bonding they're deeply ingrained in our psyche and the connection that allows us to help others in times of trouble or reach out if we need assist. For folks who go through with social anxiety, even though, communal gatherings aren't approximately connecting with others. Instead, they're a supply of apprehension, fears of being judged, and pressure over having to have interaction with others. This is where digital truth remedy could make a huge distinction. Social phobia is one of the maximum not unusual mental illnesses worldwide. It is defined as persistent fear of one or greater social situations whilst the man or woman comes und Social anxiety is the concern of being judged and evaluated negatively through different people, leading to emotions of inadequacy, inferiority, itself-recognition, embarrassment, humiliation, and despair. If someone generally becomes (irrationally) aggravating in social situations, but appears higher while they may be alone, then social anxiety" may be the trouble.

Social anxiety disease i(formerly termed "social phobia") is a much greater common trouble than past estimates to accept as true with. Millions of people around the world and everywhere may be afflicted by this devastating and demanding situation each day, either from a specific social anxiety or from a more generalized social anxiety.

1.1 MEANING- PHOBIA

A phobia is a disabling and irrational worry of something that certainly poses very little real danger for the general public. "Phobia" itself is not a intellectual health prognosis. Instead, there are phobias like agoraphobia (fear of being in situations or places wherein break out is probably difficult or help no longer available); social phobia, also known as social tension sickness (worry of social or performance situations in which embarrassment may additionally arise); and particular phobias (fears of things along with an animal (eg., snakes, spiders), heights, storms, airplanes, blood-injection-damage, choking.) To be diagnosable the terror must intrude considerably with an man or woman's every day functioning, work/faculty, or social existence.

1.2 SOCIAL ANXIETY

Dealing with anxiety in college can be extraordinarily hard for college students that omit domestic, their excessive college habitual, or who're suffering to control all of the new obligation. Moving can be a disturbing experience for every person. Leaving home (in lots of cases for the first time) and getting into a new environment full of unknown stressors and a lack of social assist is complex, at first-class. Even the most assured high school scholar is in all likelihood to enjoy a dip in self-belief throughout the adjustment duration. For a scholar with anxiety, the transition can be overwhelming and one such students phobia which has become one of the most disastrous if not solved at an appropriate, it will take anyone life easily and making them weak and disable them not being original

1.3 PUBLIC SPEAKING – A PHOBIA

Most people beings are not born public speakers; they're trained to grow to be one. When they discover themselves in conditions where they become the focal point of attention as they should address an target market, they inexperience emotions like fear and anxiety, leading to nausea and excessive sweating. Most of them try to avoid situations wherein they should carry out or talk in public, however whilst unavoidable, such situations are persisted with the aid of distress. Public speaking anxiety is very common among both university college students and the overall populace. Humans with public anxiety often keep away from anxiety-producing social or performance conditions, however whilst unavoidable, these situations are endured with feeling of intense anxiety and distress. Students with social anxiety(Fear of public Speaking) worry inconstantly that they'll embarrass themselves in social settings or that they're always being watched and judged for even the smallest actions. Often, they realize they might be making is bigger ideal out if is situation than is warranted, but they can't help how they feel or change their emotional reactions

According to a 2011 country wide survey, more than 62 percentage of students of with intellectual health troubles who withdrew from university did is because of those problems. Tension disorders are a few of the most general intellectual fitness troubles green by way of college students today

1.4 VIRTUAL REALITY EXPOSURE THERAPY FOR SOCIAL ANXIETY- THEORTCAL FRAMEWORK

Virtual reality as a medium for exposure therapy in the remedy of social anxiety became utilized in a non-public-exercise setting for two distinct guides of character remedy: But irrespective of how to cool something is, irrespective of how attractive it'd appear, it can simplest be effective if humans will preserve the use of it. This is a typical venture in digital mental health, in which there may be a need for a balancing act among how enticing, effective and green a product is and that's wherein Virtual Reality becomes mist visible

Researchers have experimented with public anxiety situations inside a preliminary take a look at, three medical case studies and a validation look at on 2 hundred topics. virtual reality platform fulfilled healing exposure necessities for social phobia. Moreover, we were in a position to expose that digital fact publicity has additional advantages inclusive of the opportunity to enhance scientific assessment with embedded tracking tools. Our experiments with physiological measurements and eye monitoring era all through immersion led to the validation of systems for goal and dependable assessment of patients' safety behaviors.

The observation of such phobic reactions has showed the simulation impact and can provide therapists with

superior pathological progression tracking. At some point of our experiments, we've got additionally been able to take a look at that subjects' reactions all through immersion have been a lot stimulated by way of their insensitivity to fearful stimuli that their cognitive reactions had been overloaded' by way of the arousal of hysteria and feelings. This has allowed is to recall that the feel of presence become greater importantly associated with the subjective effect of the content material than to the technological process. Cognitive and behavioral therapies treatments medicines are emphatically established on the prologue to nervousness affecting upgrades.

II. LITERATURE REVIEW

1. Nan Zeng , Zachary Pope , Jung Eun Lee and Zan Gao(2018) express as their findings favor VR exercise in alleviating anxiety and depression symptomology. However, existing evidence is insufficient to support the advantages of VR exercise as a standalone treatment over traditional therapy in the alleviation of anxiety and depression given the paucity of studies, small sample sizes, and lack of high-quality research designs. Future studies may build upon these limitations to discern the optimal manner by which to employ VR exercise in clinical settings.

2. Maria Abdullah and Zubair Ahmed Shaikh(2018) explains by conducting pre and post VR based test among candidates fearing phobia and It is concluded from the results that VR exposure therapy is more effective than real exposure therapy and also the post test for VR exposure therapy were significantly better than post real exposure results. This system provides cost effective solution for rehabilitation environment.

3. Antonin Troendle(2014) informs Cognitive behavioral therapy supported by virtual reality (VR) technology has become an increasing field of research in the treatment anxiety disorders. The exposure of individuals to anxiety-provoking virtual stimuli induces reduction of fear behavior. Significant decreases of pathological fear have been found in studies on agoraphobia with and without panic disorder, specific phobias, social phobia, and post-traumatic stress disorder.

4. Page L. Anderson and Matthew Price(2013) explains, Virtual reality exposure therapy is effective for treating social fears, and improvement is maintained for 1 year. Virtual reality exposure therapy is equally effective as exposure group therapy; further research with a larger sample is needed, however, to better control and statistically test differences between the treatments

5. Anderson, P. L., Price, M., Edwards, S. M., Obasaju, M. A., Schmertz, S. K., Zimand, E., & Calamaras, M. R. (2013) states that Virtual reality exposure therapy is effective for treating social fears, and improvement is maintained for 1 year. Virtual reality exposure therapy is equally effective as exposure group therapy; further research with a larger sample is needed, however, it better control and statistically test differences between the treatments.

6. Claudia Repetto & Giuseppe Riva(2011) says, A virtual reality system is a combination of technological devices that allows users to create, explore and interact with 3D environments. In recent years, virtual reality has been increasingly employed in the treatment of anxiety disorders, since it offers the opportunity to carry out exposure-based programs that bypass the limitations that occur during both in vivo exposure and imaginal exposure. The introduction of a new therapeutic approach called interreality has brought

us one step further towards e-health. If virtual worlds are considered as 'closed' experiences, separated from thoughts and emotions experienced by the patient in the real life, internality, conversely, is an advanced technological tool whose main novelty is the creation of a hybrid, closed-loop, empowering experience bridging both the physical and virtual worlds.

7. Thomas D. Parsons, Albert A. Rizzo(2007) explains Virtual reality exposure therapy (VRET) is an increasingly common treatment for anxiety and specific phobias. Lacking is a quantitative meta-analysis that enhances understanding of the variability and clinical significance of anxiety reduction outcomes after VRET. Searches of electronic databases yielded 52 studies, and of these, 21 studies (300 subjects) met inclusion criteria. Although meta-analysis revealed large declines in anxiety symptoms following VRET, moderator analyses were limited due to inconsistent reporting in the VRET literature. This highlights the need for future research studies that report uniform and detailed information regarding presence, immersion, anxiety and/or phobia duration, and demographics

8. Gutiérrez-Maldonado, José & Magallón-Neri, Ernesto & Rus-Calafell, Mar & Peñaloza, Claudia. (2009) School phobia is characterized by fear to diverse events associated to school such as being beaten by a classmate, bullied or criticized in front of the class, having to speak in public, doing exams, getting undressed to practice sports, etc. and can frequently cause young children to a chronic school refusal leading to significant asocial and academic difficulties. in older children and adolescents, the risk of a low school performance and an early school dropout is increased. diverse techniques of graded and non-graded exposure have been used in the treatment of this problem. in vivo exposure alone or preceded by imagery exposure is the treatment more infrequently applied

9. Herbelin, Bruno. (2005) says that Cognitive and behavioral therapies are strongly based on the exposure to anxiety provoking stimuli. Virtual reality seems to be appropriate for such exposures as it allows for on-demand reproduction of reality. The idea has been validated for the treatment of various phobias but is more delicate in the case of social phobia; whereas the sense of presence provoked by the immersion in a virtual environment supports the emergence of fears linked to a location, we had to verify that we can reproduce social phobia related anxiety-provoking stimuli by simulating virtual humans.

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III. RESEARCH METHODOLOGY

This research presents a controlled experiments performed in collaboration among students who had fear of public speaking and improve the use of Immersive virtual reality in social phobia. The aim of our study was to estimate the prevalence of social phobia (Fear of public Speaking)among selected Final Year MBA students(Age group 21-22) and also to detect social phobia risk factors and to determine its negative impact on psychological health.

3.1 Sampling Design

1. Sampling Research Design- Explanatory
2. Sample Size – 25 students
3. Sample Instruments- Structured Questionnaire(Pre and Post validation)
4. Sampling Universe- Students (Age group 21-22)
5. Sample Population- MBA Final year Students
6. Sampling Method- Non-Probability
7. Sample Technique - Convenience Sampling

3.2 Objective

1. To understand factor responsible for students having social phobia
2. To analyze pre and post Student experience with VR
3. To design new Theoretical Model in understanding does immersive VR can be used effectively to eradicate social Phobia among students
4. To study various educational applications of Virtual Reality for Management Institutes

IV. DATA ANALYSIS

Designing the Method

- Researchers have adopted exploratory research method
- Based upon faculty identification in classroom and selected 14 students(Age group 21-22) with a principal diagnosis of social anxiety disorder who identified public speaking as their primary were elected or he immersive Virtual Reality Exposure Therapy as #bfearfree Initiative to enhance students Social Phobia
- All students were given VR headset to experience
- Students completed 15 sessions with an average of 20 Mins/day of manualized virtual reality exposure therapy, exposure group therapy at their own place.
- In order to provide accurate results in facing fear, researcher used various VR public fear apps

solutions supporting different immersion setups and enabling realistic simulations of inhabited virtual environments.

- Researcher has used Leibowitz Social Anxiety Scale assessing the way that social phobia plays a role in your life across a variety of situations at pretreatment in understanding their true nature of having fear and compared result with post treatment by distributing questionnaire
- Data was collected and analyzed during the academic year 2018-9, inclusive of Pre and Post evaluated questionnaire

1. To analyze pre and post Student experience with VR

Test Results(Pre and Post)

Pre-Test	Gap	Post Test
Students fear before experimentation Average was 4	15 days follow up and process measures were collected during treatment.	Students fear After Experimentation Average was 7 which indicates a positive note on the impact of utilizing VR as a mode of overcoming student's social phobia

1. According to Leibowitz Social Anxiety Scale, majority students possessing LSAS Score of 65-80 Moderate Social Phobia which needs quick fix in addressing their Phobia
2. Students believe audience size play major role in having fear
3. The study reveals negative side of a students who has Social Phobia and Students said.
4. On a Scale pf 10(1-Highest, 10-Least) by exposing themselves with VR Exposure Therapy and the results are tabulated above

From the data analysis it is evident that student who have exposed themselves in revealing their insecurity in expressing phobia reflects their strength to recover from and evidence shows that with a gap of 15 days of getting exposure therapy with the aid of virtual reality, students of 2nd year MBA students have felt confidence in revoking themselves and proving getting exposed to early Virtual Reality will relinquish their phobia and solve positively

2. Students perception of fear?

Table-2 Table depicts students perception of having fear

I No	Questions	No of students
	Does the audience size play a role in your public speaking performance?	23
	Do you have fear of public speaking?	22
	Do you think that fear of public speaking makes u Pessimistic about your future?	21
	Do you think that this fear is due to lack of confidence?	19
	I get easily discouraged when my faculty treats me unconfident and it makes me feel threatened in classroom?	16

From the above analysis it is evident to notice that, 23 students have agreed that they get fear while speaking on stage with a factor to understand is their sheer size does matter for them not to open up themselves and hide them behind followed by accepting the fact of having a fear of public speaking and he least were nothing to do with faculty in charge who abuses students and treat them ill when given any opportunity to speak in class and students easily get distracted by not being themselves

3. Factors responsible for students to have Social Phobia?

Table-3, Table major reason for students to have Social Phobia

Reasons to fear of Public Speaking	Ranking
1. Fear of embarrassment	2
2. Fear of humiliation (failure)	1
3. Fear of being seen while feeling afraid	4
4. Fear of being judged	5
5. Fear of appearing to be not confident	3
6. Strict College environment	6

Fear of humiliation (failure) as top Ranking followed by Fear of being embarrassment and students having afraid of Strict College environment given least priority

Test Results

VR therapy doesn't appear to be any better or worse than traditional CBT for social anxiety, but of course it may well more impractical for students in particular. These results suggest that this form of therapy can be delivered in a controlled and simulated environment. At 15-days follow-up, students showed significant improvement from pretreatment on all measures. None of the participants reported any significant sense of sickness through use of VR therapy.

However, Students expressed minimum 3 months is needed until using VR will surely transform themselves into high octane energy booster. The prevalence of social phobia among students is high. Risk factors are modifiable. In this context, increasing the awareness about social phobia among students is crucial.

VR applications in MBA

Since Virtual Reality is going places at the same time, it is eager to facilitate numerous applications across various industries and Sector. From being used in creating immersive gaming experience, virtual reality stores, real-estate virtual walkthroughs to data visualization and cross-geographic people interaction tools – VR opens a whole new demographic of business possibilities that have been until now, unimaginable.

It is an opportunity like never seen before and this has made Virtual Reality one of the most sought-after technologies globally and here we showcase how VR can make an effective difference to MBA and beyond

Sl No	Fields	Applications
1	Academics	• Marketing, HR + Finance
		• Highlight Specific Programs
		• Educational VR App
		• Industrial Visits

2	Marketing	• VR Tour-Campus ((360 Degree VR)
		• Alumni Relations
		• Admissions
		• Campus Housing/ Hostel- Residential Life
3	Human Behavior	• Increases Confidence
		• Morale Booster
		• Remove Phobia (Stage Fear)
4	Training	• Soft Skill industry specific Training
		• Mock Interviews
		• Group Discussion
		• Overall Personality Development

Table No-4 VR applications in Educational Institutes

Top MBA colleges working who are interested

1. MIT Management Sloan School
2. Swiss Business School
3. Stanford Graduate School of Business
4. Stockholm School of Economics
5. SP Jain School Global Management
6. Ted Rogers School of Management
7. Audencia Nantees School of Management
8. Rady School Of Management

V. WORKING THEROTICAL FRAMEWORK MODEL FOR EXPOSURE THERAPY BY VIRTUAL REALITY

VR progression in utilizing its full potential in education is still infancy and I have followed my own model in understanding how effectively can transform these into actual (refer fig 1). This Model is an self-initiative from an author and tried in explaining how with simple

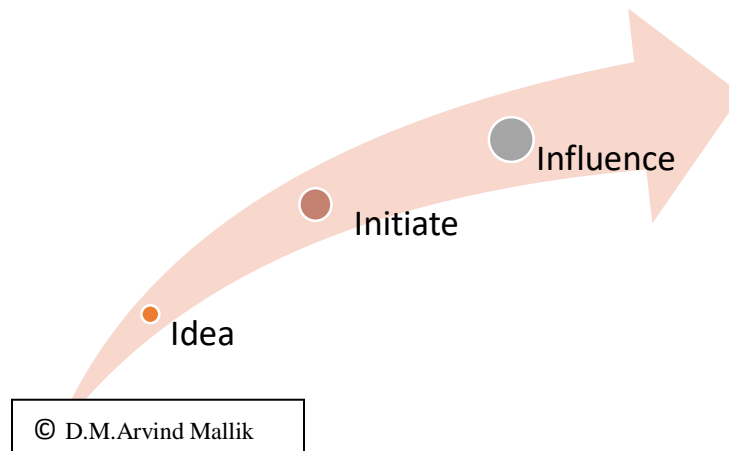


Fig-1 3i Theortical Model for Immersive Virtual Reality in eradicating Social Phobia designed by D.M.Arvind Mallik

a) **Idea**-No longer are user experiences confined to the realm of an observer; they have taken a turn for the lucid as he/she is transported into a completely different world where interaction with programmed iobjects are possible just like in reality. The ramifications of such a technology are endless. It can change the way we learn about our world and even the way we live in it.

b) **Initiate**- the development of information technology has progressed in leaps and bounds. The advancement of programming techniques, rapid productivity growth of semiconductor chips, the development of ispecial means of information transmission, as well as feedback devices (head-mounted istereoscopic idisplays, gloves and suits that have embedded sensors that transmit information to a computer about a user's imovements) – the culmination of these advancements have yielded a momentous technology in the shape of virtual ireality.

c) **Influnence**-As research has shown, students remember 20% of what they hear, 30% of what they seeiand up to 90% of whatthey do or simulate. Virtual reality yields the latter scenario impeccably; istudents ican interact with the virtual environment in person and manipulate the various objects within it. This supports "learning iby doing" and also results in creativity by constructionism.

VI. CHALLENGES

The academicians' tryst with new age teaching through technology, though very enthusiastic, is still bogged down by challenges. While he says his students enjoy the experience, I find it difficult to reconcile his methods with the larger system that is still stuck in the domain of textbook knowledge and the value of grades.

1. Creating good content(Customized)
2. Visionary Management Board
3. Faculty Initiation
4. Appreciation on Implementing Ground Breaking Ideas

VII. CONCLUSION

These results are more promising than an earlier randomized control trial for Social Anxiety Disorder that removed the cognitive component from each active arm to test the effect of the exposure alone. Virtual reality exposure therapy is effective for treating social fears, and improvement can be initiated at the beginning of MBA program and can be maintained for one year, a 12-month follow-up may eventually lead to a significant improvement from pretreatment on all measures and more active treatments on any process or outcome measure at any time, nor differences on achieving partial or full immersion as Virtual reality exposure therapy is equally effective as exposure group therapy; further research with a larger sample is needed, however, to better control and statistically test differences between the treatments

VIII. FUTURE WORK

We can enable more immersive Students experiences, along with adding more levels to the current phobia to understand how it works .Different physiological parameters with the panel of medical professionals may be involved. VR-HMI based application can be used to treatment various other anxiety disorders which revolve around students in classroom. With increase in students confident level, it may be suggested to upturn number of students participants in the future to obtain highly accurate results

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