

Exposure Therapy as an Intervention for Social Anxiety Disorder: A Case Study of a College Student

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Abstract

Social anxiety disorder or SAD is defined as intense fear or anxiety of one or more social situations where one might behave embarrassingly or be observed and be negatively evaluated by others. This clinical case study examines a 21-year-old college student, “Deasy”, who presents symptoms of SAD based on the DSM-5, including avoidance and excessive anxiety of social situations, difficulties in daily social functions, fear of being in crowds, and excessive anxiety to interact with others. The in vivo exposure therapy was given to the subject, she directly facing her feared situations to attack her anxiety toward five social situations. This therapy also included various relaxation exercises and mantra reciting exercises to help her feel more ready to confront her fears. During the exposure therapy, she gradually confronted fear-inducing social stimuli from the least to most feared. Nine sessions conducted for this case, including a pre-treatment session, five sessions of exposure, a wrap-up session, and a follow-up after two weeks. Deasy was given a pre-post assessment using the Social Phobia Inventory to see the differences in the anxiety level before and after the treatment. Results of the research show that the level of anxiety for every five feared-social situations is decreased, and the SPIN score goes from 49 or categorized as “severe” to 38, categorized as “moderate”. This result shows that exposure therapy, along with the relaxation exercise, was effective to decrease the level of social anxiety and reduce the symptoms of social anxiety.

Keywords: Exposure Therapy, Intervention, Social Anxiety Disorder

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Introduction

Social anxiety disorder is a type of intense, persistent, and unrealistic fear of social situations involving strangers (Kring, Johnson, Davison, & Neale, 2014). SAD is currently the third most prevalent mental disorder following substance use and depression (Yuniardi, 2019). Based on the DSM-V, this disorder is marked by an individual's anxiety or fear towards one or more social situations whereby an individual is exposed and is likely to be observed by other people (American Psychiatric Association, 2013). The DSM-V suggests that this disorder's main feature is fear or excessive worry in social environments that may elicit observations or negative evaluations from other people in the same environment (Spence & Rapee, 2016). As a consequence of focusing their attention to signs related to other people's negative evaluation, an individual with social anxiety disorder tends to avoid situations where they might receive evaluations by other people or be humiliated in public (Kampmann, Emmelkamp, & Morina, 2018). Situations that these individuals fear, among others, are public speaking, speaking in meetings, meeting new people, and speaking to authority figures (Kring et al., 2014).

Many SAD symptoms cause individual distress and also affect daily life (Dryman, Gardner, Weeks, & Heimberg, 2016). Individuals with SAD may also experience reductions in quality of life and various significant limitations or hindrances in many areas of living, including working and socializing (Wittchen, Fuetsch, Sonntag, Müller, & Liebowitz, 1999). Compared to people without SAD symptoms, individuals with SAD may also experience barriers in friendly relations and dating, barriers in social functioning, and tend to enjoy being single (Dryman et al., 2016). SAD also happened to many college students in Indonesia. This disorder can be a barrier for them to study. Individuals with SAD are easier to feel incapable when getting feedback. With this anxiety, a student may have no courage to do a presentation because they are afraid to be judged negatively. This anxiety also can be a barrier for them to speak up their opinion because they are worry to looked foolish. This anxiety even can lead college students to be dropped out because they don't do their task as they are worried too much with people's judgment about them.

Interventions given to individuals with SAD are usually aimed at minimizing symptoms that reduce an individual's quality of life (Dryman et al., 2016). Many forms of evidence-based psychological interventions are available to reduce social anxiety symptoms, such as cognitive therapy, social skills training, relaxation, and a combination of these therapies (Acarturk, Cuijpers, van Straten, & de Graaf, 2009). One intervention that is frequently applied and has shown to significantly reduce anxiety levels among individuals with social anxiety is exposure. Exposure is a technique that serves as a key component in various anxiety therapies (Olatunji, Cisler, & Deacon, 2010). It is an intervention that requires an individual to enter and withstand fear-inducing situations that trigger distress, whereby feared stimuli are confronted until anxiety levels subside (Rodebaugh, Holaway, & Heimberg, 2004; Kampmann et al., 2016). Such feared stimuli may be in the form of a moving object such as a balloon or insect; static objects such as knives and toilets; situational fears such as darkness; cognition such as sex; or physiological states such as a rapid heartbeat (Abramowitz, 2013).

Exposure begins with creating a hierarchy or ranking of fear-inducing situations that individuals usually avoid, with the last hierarchy (most anxiety-provoking situation) marking the last exposure (Rodebaugh et al., 2004). Exposure techniques require individuals are left to withstand anxiety-inducing social situations for certain amounts of time, with an aim to habituate the individual to the situation, therefore reducing the individual's anxiety levels. This exposure intervention can be delivered in two ways, the first being in vivo, and the second being imaginary exposure. For in vivo exposure, individuals directly deal with anxiety-inducing situations and are given the opportunity to confront actual feared stimuli, whereas imaginary exposure requires individuals to visualize feared situations (Olatunji et al., 2010). A study conducted by Bouchard et al. (2017) for clients with SAD demonstrated no differences in the effectiveness between the two exposure techniques. Both are adequately effective in lowering SAD symptoms, when assessed with behavioral measures and measures related to fear of social situations, fear of negative evaluations, and depressive mood.

Pilling et al. (in Chesham, Malouff, & Schutte, 2018) also asserted that CBT is usually a first-line therapy for individuals with social anxiety, consisting of exposure, cognitive restructuring, social skills training, and relaxation training. However, exposure is usually the key method for the treatment of social anxiety itself. Other than this, exposure therapy is considered equally as effective as other cognitive therapies or CBT for individuals with SAD (Kampmann, Emmelkamp, & Morina, 2019). Considering the structure and elements of this method as well as its sound evidence-base, the exposure technique is considered appropriate for Deasy's case.

As case studies on the use and effectiveness of exposure for social anxiety disorders in Indonesia is limited, this study's objective was to provide an account on the mechanisms of change of a client who has suffered from a longstanding disorder. A qualitative description of the sessions is provided, with data collected from the counselor's session notes, assessment results, and supervision notes.

Case Introduction: Deasy

The subject in this research is "Deasy", a 21-years-old female. She is of Sundanese ethnicity and resides in Bogor, West Java, and currently a student at a university in Depok, West Java. Prior to consulting, Deasy experienced weight loss, loss of appetite, and loss of interest in various activities. After further assessment, Deasy revealed anxiety in dealing with daily social situations, in which she experienced tremors, loss of words, a rapid heartbeat, and difficulty breathing. She experienced these symptoms across various situations, such as in classrooms and public areas, primarily ones that are novel for her. In the classroom, she had no courage in expressing her opinion in large forums, was nervous when she had to present in front of the class, and worried that she might receive poor judgment from other people. At campus, she did not have many friends and felt anxious when she has to meet new people in her environment. Outside the campus, Deasy also felt anxious if she had to communicate with other people, such as passing by a group of people. Deasy also felt uncomfortable to begin communicating with other people in public, such as shopping centers, stations, and other public spaces. Deasy always assumed that other people around her, especially by new people in her environment, view her as a 'weird' person.

The design of this research is a pre-post single-subject design. Prior to the intervention, Deasy was assessed for a proper diagnosis and to justify that the intervention would be appropriate in addressing her symptoms. The diagnostic assessment consisted of a clinical interview with a DSM-5 basis, the Social Phobia Inventory (SPIN), and projection tests that showed indications of social anxiety disorder. Based on the DSM-5-based clinical interview, her condition met all the diagnostic criteria. As a tool that measures the severity of social phobia or Social Anxiety Disorder (SAD) (Antony, Coons, McCabe, Ashbaugh, & Swinson, 2006), the counselor's diagnosis was substantiated after the SPIN test generated results – a score of 49 was classified as a severe disorder. The entailing aspects were fear of authoritative figures, fear of criticism, avoidance of activities in which Deasy would be the center of attention, avoidance of speech, avoidance of criticism, fear of performing in activities that draw people's attention, and fear of looking "foolish" in front of others. The changes of anxiety are monitored before the session, during the session (anxiety level being self-measured twice for each specific social situations, before and after the session), and after the treatment (Table 3). The changes The intervention was preceded with an informed consent signed by Deasy. In planning and executing the intervention, Deasy's safety and well-being were reassured. The intervention was supervised by the co-author, a certified clinical psychologist, Adhityawarman Menaldi, M.Psi., Psikolog.

Session	Activity
Pre-Treatment	<ul style="list-style-type: none"> - Initial counseling session. - Motivational interviewing.
Session 1	<ul style="list-style-type: none"> - Preparation session. - Set five situations for exposure session with the subject. - Preparing the subject with safety net and various relaxation techniques, such as diaphragm-breathing and progressive muscle relaxation therapy (PMR). - Pre-treatment assessment.
Session 2 – 6	<ul style="list-style-type: none"> - In vivo exposure sessions toward five situations. - Self-assessment to measure subject's level of anxiety in each situation, before and after treatment.
Wrap-Up Session	<ul style="list-style-type: none"> - Post-treatment assessment. - Having a discussion with the subject of her lesson-learned during sessions. - Making a “what-to-do” list to help the subject decide what to do if her anxiety level increases again in the future. - Termination session.
Follow-Up Session	This session is conducted after two weeks of termination. The subject would be asked about her progress and how she deals with her anxiety by herself.

Table 1. Session Plan

The Intervention: Exposure

The intervention given to Deasy was exposure, a therapeutic technique in behavior modification. During exposure, Deasy is directly confronted with a real-life situation that was a source of her anxiety, until Deasy eventually was habituated to the situation and could invalidate her anxiety. The anxiety-inducing situation was paired with a relaxation technique trained in prior sessions. In early exposure stages, Deasy was required to list 5 social situations she usually becomes anxious over, then asked to rank each situation, ranking from most to least manageable sources of anxiety. From the list's ranks, Deasy would then deal with each situation starting from the easiest to the hardest situation. The exposure intervention was given for seven sessions that included a wrap-up session to self-rate the anxiety level and its reductions in each social situation.

Pretreatment Process

Before the intervention with exposure therapy began, an initial counseling session was provided to raise and strengthen Deasy's motivation to change for six sessions. During these initial six sessions, Deasy was also given a CBT approach by discussing

thought recording and learning to counter negative thoughts that Deasy had in various social anxiety-inducing situations. She was also given relaxation training through progressive muscle relaxation and diaphragm breathing relaxation that can immediately be applied when her anxiety appears. The counselor also attempted to provide an in vivo systematic desensitization intervention, but with no success as imagining anxiety-inducing social situations overwhelmed her.

Session I

In this first session, Deasy exercised diaphragm-breathing relaxation that could be immediately applied each time by physical reactions occur, such as shaking and feeling weak in each social situation she encountered. This session also included preparation by creating a mantra that Deasy could recite to reinforce herself. The mantra was “it is alright; people could be wrong.” Deasy then created a list of social situations that were sources of her anxiety and ranked them, starting from most to least manageable. From each situation, she was asked to make an anxiety scale and the targeted reductions in each scale. Together with the counselor a ‘safety net’ was established – things Deasy could do as a code to the counselor that a situation was becoming too overwhelming for her to deal with, so that the counselor can approach her and terminate the exposure (Table 3).

The following is a list of situations Deasy’s anxiety is rooted in, ranked from most to least manageable, including her anxiety ratings within a 10-point scale:

Situations	Scale of Anxiety	
	Pre Treatment	Target Post Treatment
Push a pedestrian crossing button at Universitas Indonesia (UI) station	6	0
Asking a location to a stranger	6	4
Sit alone in the cafeteria	8	1
Get on and off the yellow bus alone at UI bus stop	8	2
Presentation	10	4

Table 2. Scale of Anxiety for Five Feared-Situations

Safety Net
Draw deep breaths 8 times and exhale 10 times
Look towards the counselor
Call the counselor to be approached

Table 3. Safety Net

Session II

In the second session, the exposure exercise started from the most manageable situation with an anxiety rating of 6, which was pressing a pedestrian crossing button in front of the UI station. For this situation, Deasy aimed at reducing her anxiety to 0. Prior to the exposure, Deasy was asked to think of the possible events that might happen when she pushes the button, as a justification point on whether the possible

events actually happened or not. Deasy began the session with a breathing exercise and progressive relaxation to compose her self.

Following this, the counselor accompanied Deasy to push the crossing button. Deasy was asked to pay attention to her surroundings and justify whether everyone around her was staring at her when she pushes the button. At first, Deasy declined to push the button, and the counselor gave her time to calm down. Deasy exercised relaxation and repeated the mantra as a reinforcement. This session took 2 attempts at pushing the button; the first attempt with the counselor by her side, and the second attempt with the counselor standing half a meter away from Deasy. After the second attempt, Deasy felt overwhelmed and the session was terminated.

After this session ended, a short evaluation was done and Deasy was asked to evaluate her anxiety on a scale after both attempts. After the first attempt, her anxiety was reduced to 5 and at the second attempt, reduced to 4. Deasy expressed how she did not tremble as much during the second attempt after she observed her surroundings, there were only 1 or 2 people looking at her, and they did not say anything to confirm that Deasy appeared “weird”.

Session III

In the third session, exposure for the next most manageable situation was done, which was asking a location to a stranger. Communicating with other people was also a social situation that hindered and provoked Deasy’s anxiety – for this situation, her anxiety over being judged as “foolish” for asking questions. She was also worried that she might not ask clearly and cause a person to misunderstand. Prior to the exposure, Deasy was asked to recite the mantra, exercise progressive relaxation, and think of what she could do if her fears do occur. The exposure was then done gradually. First, the counselor accompanied Deasy to approach a security guard to ask about a building’s location and observe the person’s reaction. After seeing that the response of the person she inquired was acceptable and that Deasy was fine after she had asked, her anxiety rating was reduced to 2.

In the next attempt, Deasy was asked to approach two people who were sitting together to ask for a location. Deasy was anxious at first, with her palms starting to sweat, and was hesitant as she thought one of them seemed to not want to be bothered. However, after Deasy drew deep breaths and recited the mantra repeatedly, she then made the inquiry. After succeeding, Deasy expressed that her anxiety rating further reduced to 1.

The final step for this session was to approach a few people who were gathering to also ask for a location. For this stage, the counselor stood next from a one-meter distance from her. Deasy ‘blanked out’ for a moment before she made the inquiry and became anxious for hesitating to ask. The counselor observed Deasy’s facial expression turn into a panic state, however, she took a deep breath and repeated her inquiry. In this stage, Deasy demonstrated progress and did not give the counselor any code for help despite briefly having difficulty inquiring. Following this, an evaluation was done and Deasy asserted that her anxiety rating increased to 2, but her body did not react with a tremble, she had the courage to look a person in the eye when speaking, and was no longer sweating.

Session IV

In the fourth session, Deasy was faced with the next moderately manageable situation, which was sitting in the cafeteria alone. Deasy rated her anxiety scale at 8 as she felt very uneasy when other people looked at her. Sitting in the cafeteria alone was a strange thing for her and she felt that other people would also see her as 'weird', in fear of looking stiff or confused. The session took 2 attempts. The counselor sat with Deasy in the first attempt and asked Deasy to observe her surroundings, to justify whether everyone around her was in fact look toward Deasy's table. The first attempt took 10 minutes. The counselor instructed Deasy to sit still, to just observe her surroundings.

At first, Deasy appeared very anxious. She kept on playing with the ring on her finger and looked downwards without observing her surroundings. The counselor then instructed Deasy to take a deep breath and recite the mantra to reinforce herself. After Deasy appeared calmer, she was able to look at her surroundings. The first attempt ended after Deasy told the counselor she wished to stop. An evaluation was done, and Deasy stated how her concerns were invalid, seeing that every person in the cafeteria was preoccupied. After this attempt, Deasy's anxiety rating dropped to 6.

A second attempt was done with the counselor observing Deasy from a 2-meter distance. Deasy appeared uneasy, with her feet tapping the floor, and continuously fidgeting with her ring. She also appeared to observe her surroundings and then observed the greenery beside the cafeteria. After 10 minutes, the counselor approached Deasy for an evaluation. From this evaluation, Deasy expressed that after the counselor left her to sit alone, her body trembled, palms were wet from sweat, and felt like crying. She then drew a deep breath and focused on reciting the mantra. After calming down, she looked around, and when she saw two people looking towards her, she trembled again, then distracted her view to the greenery next to the cafeteria. This was discussed with the counselor. After discussing the alternative conditions as to what people could be thinking when they look towards her, she concluded that it is possible they may just be looking around as well, just like she was, and it did not infer negative thoughts about her. After the evaluation, Deasy rated that her anxiety was reduced to 4.

Session V

In the fifth session, the exposure was confronting Deasy's anxiety over getting on and off the yellow bus at a bus stop near campus grounds with only her (no other passenger) getting on or off. She was anxious over the thought of other people seeing her as 'weird' for getting on and off the yellow bus alone. Similar to previous sessions, Deasy exercised progressive relaxation to ease down and relax during the exposure. Her anxiety rating for this situation was at 8. This session took two attempts, in which a specific timeframe was selected whereby not many students were using the bus on campus.

In the first attempt, the counselor accompanied Deasy to get on the bus from one of the bus stops, to get off at the next two stops. In this first attempt, Deasy only looked downwards during the ride, and repeatedly asked the counselor, "Do we look weird for doing this?" In this first attempt, Deasy reported that her anxiety did not reduce at

all. Prior to the second attempt, the counselor instructed Deasy to take a deep breath, exercise relaxation, and continuously recite the mantra. After Deasy felt more prepared, she and the counselor got back on the bus. This time, the counselor asked her to observe her surroundings and prove whether there was anybody paying attention to her while she got on the bus. After two bus stops, Deasy and the counselor got off the bus and made an evaluation. Deasy reported that her anxiety was unjustified, as nobody appeared to observe Deasy while she got on or off the bus. Following this, Deasy was asked to give her anxiety scale a rating, which had dropped to 6.

The exposure ended with a reflection from her experience in completing this fifth session. Beyond the session setting, apparently Deasy tried to get on the campus bus by herself, then made a report to the counselor and rated her anxiety lowered to 4 during this self-attempt. According to Deasy, getting on the bus alone was not a threat that needs to be avoided, although her trembling bodily reacting still occurred while getting on or off the bus.

Session VI

The exposure for this session was Deasy confronting a situation that provoked the strongest anxiety, which was presented in front of strangers. Deasy briefly wished to back out and not do the presentation, although she had prepared the materials for over a week. Deasy was also momentarily unable to be contacted by the counselor. However, she eventually showed up for the session and discussed her anxiety with the counselor. Throughout the session before presenting, Deasy cried and expressed how unprepared she was. She was concerned about being judged poorly by the audience. She was also worried that the way she presents will make the audience misunderstand or consider her 'foolish', or that her speech would be unclear and thus confuse her audience. However, after discussing her anxiety with the counselor and a motivational interview, Deasy eventually agreed to carry out this last exposure.

Before the exposure, Deasy was instructed to exercise diaphragm-breathing relaxation and progressive muscle relaxation continued with rehearsing her presentation material in front of the counselor. When Deasy was ready, the counselor asked a colleague who was pre-arranged as an audience to pay attention and listen to Deasy's presentation, which lasted for approximately 5 minutes.

Throughout the presentation, Deasy exhibited many signs of progress. She no longer played with the ring on her finger as she usually does and did not look at the counselor when she misspoke during the presentation. When she did misspeak, Deasy was able to smile to the viewers, took a moment to breathe, and repeat her presentation. After the presentation, Deasy took the initiative to ask for feedback from the audience without the counselor's instruction.

After feedbacks were given and the audience exited the room, an evaluation was made. Deasy stated how she felt proud of herself for overcoming her greatest anxiety-inducing obstacle. Following this, the counselor asked Deasy to rate her anxiety scale, and it was lowered to 4, meeting the targeted anxiety scale reduction.

Wrap-Up Session

An evaluation of all five exposure sessions was made. This session also discussed the things Deasy could have done if her anxiety re-emerges beyond the treatment setting. In this session, Deasy's anxiety-provoking beliefs were identified, which were, "I am not good, I am wrong, I am stupid". Of these beliefs, the session also discussed new beliefs and a new belief was generated - "I am stronger than I think", which will be applied after the end of the session. The counselor also asked Deasy to reflect on all completed sessions and the progress she has experienced.

Follow-Up Session

Follow-up was done two months after the intervention. Deasy kept communicating with the counselor for up to two months after the intervention was completed. Based on the follow-up record, Deasy reported that she was already able to manage her anxiety in asking for information to strangers without fear of judgment. The follow-up also indicated that Deasy occasionally still feels anxious when she has to deal with other people. However, Deasy was more aware of the signs of her anxiety's emergence and attempts to manage them by reciting her mantras. For two months after the intervention, Deasy still exercised breathing techniques that she deemed was effective in helping her anxiety.

Result

For a case of social anxiety disorder, the exposure intervention appeared to be effective in reducing Deasy's anxiety level toward daily social situations. Based on the wrap-up session that also included a discussion on Deasy's efforts beyond the clinical setting, it was reported that Deasy had the courage to push a pedestrian crossing button in front of a station, ask a security guard for directions, and make a phone call to a government official. Of five situations, her anxiety level for sitting in a cafeteria and doing a presentation was reduced to the expected level. Based on the SPIN-INA test, the result shows that the score of anxiety was decreased from "severe anxiety" (40-50) to "moderate anxiety" (30-40) after the treatment as seen in Table 4.

The decrease level of anxiety in exposure therapy can be explained with emotional processing theory (EPT). This theory explained that when an individual confronts a feared stimulus during exposure, it will activate a fear structure. During exposure sessions, the activation of the fear structure will be integrated with information that is incompatible with it, resulting in the development of a new non-feared structure as a replacement, and fear reduction which represents a change in cognitions (Abramowitz, 2013). For Deasy's case, this model of learning also happened. Deasy was habituated with her feared stimuli, which was a basis for corrective learning (Abramowitz, 2013). When she was exposed to her feared stimuli, she activated her fear structure, and this process integrated with information which very different from her previous beliefs, and this process developed a new non-feared structure of her feared social situations. Decreasing of Deasy's anxiety level was in line with the EPT model since she found that her feared stimuli were not that dangerous, she changed her cognitions, so her fear toward those situations was reduced.

Psychological Measure	Pre-treatment Scores	Post-treatment Scores
Self Measure about Situations		Scale of Anxiety
1. Pushing the pedestrian crossing at UI Station	6	2
2. Asking a location to a stranger	6	4
3. Sitting alone in the cafeteria	8	2
4. Getting on and off the yellow bus at UI bus stop alone	8	4
5. Doing a presentation	10	4
SPIN-INA Score	49	38

Table 4. Pre-treatment Scores and Post-treatment Scores

In Deasy’s case, her lack of disclosure toward her closest environment regarding the issues she has in dealing with social situations may have served as a complicating factor that affected the intervention’s outcomes. Deasy’s lack of disclosure may have also caused her surroundings to not help Deasy develop. Her closest environment was her family in particular. The minimum awareness of her own condition may have also caused her to further avoid social situations. Deasy also reported that her family was unaware of her avoidance from the environment, including her extended family, as she was concerned about being seen as ‘weird’ or would receive negative judgments from her family. This in fact caused her family to reprimand Deasy when she declined to attend a large family gathering. This type of criticism could have exacerbated Deasy’s anxiety and further reinforce her self-blame in various situations.

Conclusion

Exposures for anxiety disorders are known to help reduce an individual’s anxiety levels in dealing with trigger situations, and this case was reported strategically for its clarity and simplicity in justifying the efficacy of exposure therapy and the rapidity of treatment. Specifically, for Deasy’s social anxiety disorder, the intervention using exposure was considered effective in helping Deasy lower her anxiety. It was known that her anxiety manifested because of her avoidance of such situations, therefore she was unable to directly experience or justify whether the situation was safe for her. This finding is in line with previous research findings that exposure therapy, even in a one-session of in vivo exposure, also proven significantly to reduce social anxiety. (Knutsson, Nilsson, Eriksson, & Jarild, 2020; Scheurich, Beidel, & Vanryckeghem, 2019). Through exposure, individuals with SAD may become habituated to a social situation and learned to justify the irrationality of their fears. Through exposure, clients may also learn through exposure to the steps they can take when their fears do occur. Especially for this case, exposure therapy was combined with relaxation techniques and a safety net planner. Observations toward Deasy during the session, safety net planner, and relaxation exercises helped to prepare herself to encounter the exposure session, because when the subjects are learned how to relax, for example relax their muscles deeply, they learn to banish thoughts, feelings, and bodily sensations of anxiety (Conrad & Roth, 2007). Although this kind of therapy has to be adjusted differently to each client, exposure therapy is worth applying, especially in a school or college contexts like Deasy’s case. Besides, it is widely accepted that case

studies cannot be generalized because this case is very specific. The intervention given to the subject was a very specific custom-made adjusted to Deasy's condition. Therefore, further research using this method and procedure needed to be applied to similar demographics or symptomatology to strengthen the result of this research.

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