College of Basic Education Research Journal

www.berj.mosuljournals.com

Effect of post-amputation stress disorder on psychological adjustment in patients with type 1 diabetes (A field study of two cases at the public hospital institution "Hamadou Hussein" - Sidi Ali-Mostaganem) – Algeria

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Article Information

Article history:
Received: May 4,2025
Reviewer: June 25,2025
Accepted: June 25,2025
Available online

Keywords:
Post-amputation – strass disordes – Psychological adjustment – type I diabetes.

Correspondence:

Abstract

Aim of this research is to identify effect of post-amputation stress disorder on psychological adjustment of a patient with type 1 diabetes, and to identify effect of physical health and gender (male-female) on psychological adjustment of a diabetic patient with post-amputation trauma disorder. Research sample consisted of two cases, a male and a female, and we collected data on research variables using:
Davidson's Post-Traumatic Stress Scale, translated by "Abdulaziz Thabet" - Psychological adjustment scale by Dr. Zainab Choucair 2003, These two scales were chosen because they are applicable in Arab environment, whose characteristics are consistent with that of Algerian society. They are codified and subject to validity and consistency. Results led to : Amputees with type 1 diabetes suffer from post-traumatic stress disorder. Post-traumatic stress disorder affects psychological adjustment of patients with type 1 diabetes. Physical health affects psychological adjustment of a type 1 diabetic patient with post-traumatic stress disorder.

ISSN: 1992 – 7452

Introduction:

Humans, like other living organisms, undergo numerous changes throughout their life journey, encountering situations that may involve undesirable experiences. It is well-known that an individual constitutes a holistic unit of mind and body. General health is not merely the absence of disease but also encompasses the individual's comfort, physical and mental pleasure, and social well-being. This underscores the interdependent relationship between the body and the mind. The mental comfort experienced by a healthy individual contributes to psychological, social, and good performance adaptation and harmony.

The physical and psychological aspects cannot be separated, and any change in the physical condition of an individual can affect their mental state, which is crucial in human life, whether the impact is negative or positive. The body is susceptible to physical risks and diseases that hinder psychological balance, especially in the case of chronic illnesses like diabetes. Complications of such diseases can lead to medically necessitated amputations due to infections resulting from the aggravation of the individual's organic condition. Amputation of any organ is a shocking and impactful event from the physical perspective, as it brings about changes in the body structure. Physical appearance holds significant importance for individuals.

In the case of diabetic patients, especially type 1, amputation has negative repercussions on the mental and physical health of the amputee. The responses vary from one individual to another, leading to a sense of deficiency and non-acceptance of the loss. This impedes the individual's effectiveness in life, personal harmony, and social adaptation. Mental health is closely related to the sense of tranquility, security, psychological comfort, and pleasure derived from an individual's capacities and potential. It is also a comprehensive expression of an individual's ability to achieve psychological and social harmony.

From this perspective, we aim to understand the extent of the impact of post-amputation stress disorder on the psychological harmony of type 1 diabetic patients. Additionally, we seek to examine the influence of physical health on psychological harmony in individuals affected by type 1 diabetes.

The Problematic:

Diabetes is unquestionably considered the disease of the twenty-first century. The World Health Organization declared diabetes a global epidemic in 2008. According to the organization's statistics in 2012, the worldwide number of diabetes patients reached 346 million, with 70% of them residing in developing countries. It is expected that this number will double by 2030. International Diabetes Federation statistics for 2013 reported 382 million diabetes patients, with 175 million unaware of their condition. Half of these patients fall within the age group of 40-59 years, an active and productive category responsible for societal functions. The significance of diabetes lies not only in being a chronic physical condition but also in its impact on the individual's psychological life. Patients with diabetes must make numerous lifestyle adjustments, especially regarding habitual activities and dietary habits. In many cases, diabetes poses a risk that exacerbates serious complications such as strokes, vision loss, kidney failure, blood clots, diabetic neuropathy, and diabetic foot injuries, potentially leading to premature death or amputation.

Amputation, considered a therapeutic intervention on the patient's body, results in physical mobility impairment. The amputee experiences this loss as a distressing and shock-inducing event, leading to a state of weakness after amputation. This weakness manifests as frightening thoughts and memories, commonly known as Post-Traumatic Stress Disorder (PTSD), defined as "a disorder in which the affected person suffers from a violent, harmful, and painful shock, causing disability, great fear, horror, and avoidance of stimuli associated with this painful incident." Symptoms of PTSD affect the individual's behavior, thoughts, and personal life, impacting their sense of good health, companionship, social life, and happy family life, thereby disrupting the individual's internal balance or affecting their psychological harmony.

From previous studies addressing similar variables, locally, Maimouna's study (2017) titled "Post-Amputation Trauma Disorder in Diabetic Patients" aimed to clarify the psychological impact of amputation on diabetic patients. The results revealed that amputation, regardless of the patient's gender or type and duration of amputation, affects the psychological and relational condition of the patient to varying degrees. It leads to disturbances in thinking, behavior, and emotional states. In another local study (Sufi, 2016) titled "Psychological

Resilience and its Relationship to Psychological Harmony in Diabetic Patients," the aim was to identify the level of psychological harmony and psychological resilience and determine the relationship between them in type 1 and type 2 diabetes patients. The results showed that the level of psychological harmony in diabetic patients is high, and the level of psychological resilience is average. There is a statistically significant positive relationship between psychological resilience and psychological harmony. There is a relationship between psychological resilience and its three dimensions (commitment, control, challenge) with psychological harmony and its dimensions (adaptation and beliefs about the disease). However, there is no relationship between psychological resilience and its three dimensions (commitment, adaptation, challenge) with psychological harmony and its dimensions (diabetes pressure, guilt feelings, cooperation, alienation, tolerance for ambiguity).

Regarding foreign studies, an American study by Paule (2011) titled "The Marital Relationship and Psychosocial Adaptation and Glycemic Control of Individuals With Diabetes" aimed to reveal the relationship between psychological and social harmony, marital relationships, and the impact on the sugar levels of diabetic patients. The study sample consisted of 78 married adult insulin-treated diabetes patients, both type 1 and type 2, randomly selected. Various scales were used, such as the Personal and Social Harmony Scale and its relationship to spouses, the Quality of Life scale, and a medical scale to determine sugar control levels in patients. The results showed a positive correlation between marital satisfaction and the level of personal and social harmony and also between marital satisfaction and quality of life. As marital satisfaction increased, it positively reflected on the level of personal and social harmony for the patient and their quality of life. However, according to the study's results, there was no clear relationship between marital harmony and sugar control levels in diabetic patients in the overall sample.

Based on the above, we formulated the problem statement for our research as follows:

Does post-amputation trauma disorder affect the psychological harmony of type 1 diabetic patients?

Does physical health affect psychological harmony in type 1 diabetic patients suffering from post-amputation trauma disorder?

Study Hypotheses:

Post-amputation trauma disorder affects the psychological harmony of type 1 diabetic patients.

Physical health affects psychological harmony in type 1 diabetic patients suffering from post-amputation trauma disorder.

Study goals:

Investigate the impact of post-amputation trauma disorder on the psychological harmony of type 1 diabetic patients.

Determine the extent of the effect of physical health on the psychological harmony of diabetic amputees suffering from post-amputation trauma disorder.

Diagnose the symptoms of post-amputation trauma disorder in diabetic patients.

Procedural Concepts:

1. Post-Amputation Trauma Disorder: It is an emotional-psychological condition experienced by an individual after losing one or both upper or lower extremities or parts thereof, as a result of diseases or accidents. Psychological symptoms (physical, behavioral, and cognitive) associated with this amputation emerge and persist for a period exceeding one month and less than six months.

2. Amputation: It is the process of cutting off an organ or limb from the body, depending on the damage and requirements necessitated by complications of a disease or an accident, with therapeutic objectives.

3. Psychological Harmony: It is an ongoing dynamic process in which an amputee strives to satisfy their physical, psychological, and social needs, aiming to achieve satisfaction with oneself and others. This process aims to establish a more harmonious relationship between the individual and oneself, as well as between the individual and others.

4. Type 1 Diabetic Patient: This refers to an individual affected by diabetes who relies on insulin for treatment due to a deficiency or absence of insulin secretion. Insulin is produced by beta cells in the pancreas. Therefore, individuals with type 1 diabetes require daily insulin treatment along with a balanced dietary program. Patients with type 1 diabetes do not respond to treatment solely through diet and oral medications.

5. Concept of Post-Traumatic Stress Disorder (PTSD): The Fifth Statistical Manual (DSM-5) defines post-traumatic stress disorder as: "A psychological disorder resulting from direct or indirect exposure to a specific trauma or shock, such as natural disasters, wars, rape, or terrorist acts" (American Psychiatric Association, 2013, p. 271).

6. Concept of Amputation: Amputation involves the cutting and removal of a limb or any part thereof, whether through surgical intervention or as a result of accidents and trauma.

Factors Influencing Psychological and Social Adjustment in Amputation Cases:

The stage of adjustment comes as the final phase of the adaptation battle that individuals undergo to maintain psychological and social balance and achieve a state of reintegration by fostering positive self-esteem, self-concept, self-respect, and attempting to adopt positive attitudes towards oneself, others, and the disability itself. What also significantly affects the adaptation and psychological harmony in amputees is the interplay of other elements influencing the achievement of either positive or negative self-perception. This includes the impact of the development of what is known as self-stigma and social stigma, i.e., the individual's perception of oneself and society's view of them.

(Joan E. Edelstein et al., 2006:68) emphasized that this stigma contributes to confusion, feelings of shame, excessive sensitivity, or disgust. The presence of depression, low levels of harmony, and a decreased value of life were also highlighted. Self-stigma may persist for extended periods after amputation due to its association with the individuals' body image.

In terms of age, identity and social acceptance are crucial issues for young people or those of younger age. For women, bodily integrity matters, while men are concerned with not losing their function. Amputation can have significant dramatic effects on the ability of individuals who were engaged in substantial activities before amputation, especially when linked to the essence of their identity and self-esteem. This can lead to depression and various problems.

A clinical observation study of four amputation cases (Bruce Rybarczyk et al., 2004:944) indicated that amputees, in their psychological adaptation experiences, overcome and control the psychological changes that occur after amputation, referred to as post-amputation depression. They manage changes

in body image, sensations, phantom limb pain, and alterations in social support.

Method and Procedures:

Study Approach: In our research, we adopted a clinical approach to closely examine cases and simultaneously delve into the psychological, emotional, relational, cognitive, and behavioral aspects of the individuals. This was achieved through the utilization of clinical techniques, including case studies, interviews, clinical observation, and psychological scales.

Study Limits:

A. Spatial Limits: The study was conducted at the Internal Medicine Department of "Hamadou Hacine" Hospital in the municipality of Sidi Ali, Mostaganem Province, precisely where the survey study took place.

B. Temporal Limits: The study spanned from May 14 to June 15, 2023.

C. Study Sample: After conducting several interviews with cases, two cases were purposefully selected based on three variables:

- Type of Diabetes: The sample was exclusively chosen based on Type 1 diabetes.
- Amputation: Two cases with the same amputation were selected to ensure study balance and variable control.
- Post-Amputation Stress Disorder: Data for the selected cases regarding research variables were obtained using Davidson's Post-Traumatic Stress Disorder Scale, translated by Abdulaziz Thabet.

Primary Study Tools:

Case Study: It is a data collection tool that falls within the clinical approach in psychology. It aids specialists and researchers in the field of psychology in obtaining the maximum amount of information about a particular case.

Clinical Observation: Clinical observation refers to the process where the researcher collects information about a phenomenon based on their perceptions and senses.

Clinical Interview: The interview is considered one of the fundamental tools for collecting information and data about the phenomenon under study. It is one of the simplest and most commonly used methods in various social research.

Davidson's Post-Traumatic Stress Disorder Scale: This is an evaluative tool developed by Jonathan R.T. Davidson and colleagues in 1997 in its original English version as the "Davidson Trauma Scale." It was crafted based on various traumatic experiences. Its objective is to measure the impact of traumatic experiences in terms of diagnosis, assessing the extent of recall, avoidance, or arousal. Dr. Abdulaziz Thabet translated and standardized it for the Arabic environment. The scale consists of 17 items, each measuring a different aspect of the impact of traumatic experiences.

Scale Description:

The Davidson Scale comprises 17 items, each measuring a different aspect of the individual's traumatic experiences. It is structured around three main dimensions, which are the retrieval of traumatic experiences, avoidance of traumatic experiences, and hyperarousal. These items are distributed as follows:

Dimensions	Number of dimension	Total
Retrieval of Traumatic Experience	**17-4-3-2-1**	**05**
Avoidance of Traumatic Experience	**11-10-9-8-7-6-5**	**07**
Hyperarousal	**16-15-14-13-12**	**05**

Scoring Key:

The total score on the scale is calculated by summing up the scores obtained from responding to the items. The process is as follows:

Evaluation	Drip
Never	0
Scarcely	1
Sometimes	2
Mostly	3

Always	4

Severity of Post-Traumatic Stress Disorder (PTSD) Evaluation:

The degree of post-traumatic stress disorder resulting from the traumatic experience is assessed according to the following categories:

The categories based on the scores are as follows	Degree
From 00 to 17	No shok
From 18 to 34	Mild shok
From 35 to 51	Moderate shok
From 52 to 68	Severe shok

Validity and Reliability of the Scale:

Several previous studies have addressed the issue of stability and validity of the scale as follows:

Internal Consistency: The Cronbach's alpha coefficient was used to assess the internal consistency of the scale in a study involving (241) patients taken from a group of rape victims and a study of victims of Hurricane Andrew. The alpha coefficient was (0.09). Another study, comparing (215) ambulance drivers to employees in Gaza, used Cronbach's alpha, resulting in a coefficient of (0.78), and the split-half reliability was (0.61).

Concurrent Validity: The scale's validity was studied by comparing it to a scale measuring psychological disorders resulting from traumatic events for clinicians. A sample of (120) individuals from the group of rape victims and studies on victims of Hurricane Andrew and war veterans was taken. The results showed that (67) of these individuals were diagnosed with post-traumatic stress disorder (PTSD), with an average score of (+62/-38) on the Davidson Trauma Scale. In contrast, the average score for the Davidson Trauma Scale for those who did not exhibit symptoms of PTSD (62 individuals) was (+15.5/-138), with a t-test value of (9.37) at a statistical significance level of 0.01.

Test-Retest Reliability:

This scale was applied to a group of individuals who underwent examination in various clinical centers. The test was repeated after two weeks, resulting in a correlation coefficient of (0.86) and a statistically significant value of (0.001).

In a study by Abu Leila and Thabet, the scale was selected for a sample of ambulance drivers, consisting of (20) drivers. The test was repeated after two weeks, yielding a correlation coefficient of (0.86) and a statistically significant value of (0.001).

H. Psychological Compatibility Scale by Dr. Zainab Mahmoud Shaqeer (2003): This scale was designed by Zainab Shaqeer (2003) and comprises four main dimensions:

- Personal and Emotional Compatibility (the author considered combining these two dimensions due to their strong correlation).
- Health and Physical Compatibility
- Family Compatibility
- Social Compatibility After standardizing the scale, (20) items were developed for each sub-dimension, resulting in a total of (80) items distributed across the four main dimensions, as illustrated in the following table:

Axes of the Scales	Scale Items		Total Score
	Positive Items	Negative Items	
Personal and Emotional Compatibility	From 1 to 14	From 15 to 20	20
Health and Physical Compatibilirt	From 21 to 28	From 29 to 40	20
Family Compatibility	From 41 to 55	From 56 to 60	20
Social Compatibility	From 61 to 74	From 75 to 80	20
Total Number of Items	51	29	80

Psychometric Properties of the Scale:

1. **Validity:**

Construct Validity: The internal consistencies for the four dimensions included in the scale were calculated, along with the correlations between the four dimensions and the overall score of the scale. This was done on the sample to which the scale was applied, and the following table illustrates these results :

Dimensions	Personal Compatibility	Health Compatibility	Family Compatibility	Social Compatibility	Psychological Compatibility
Personal Compatibility	/	0.64	0.67	0.81	0.78
Health Compatibility	/	/	0.69	0.82	0.85
Family Compatibility	/	/	/	0.93	0.76
Social Compatibility	/	/	/	/	0.88

And through the results of the table, it is evident that all correlation coefficients for the four dimensions are positively significant, as well as the correlations between the four dimensions and the overall score of the scale.

Scale Reliability: Test-Retest Method: The scale was administered to a sample of (200) individuals (100 males / 100 females) twice consecutively, with a two-week interval between the two administrations. The results revealed the following:

Dimensions Scale	The Sample	Correlation Coefficient	Significance level
Personal Compatibility	200	0.67	0.01
Health Compatibility	200	0.79	//
Family Compatibility	200	0.73	//
Social Compatibility	200	0.83	//

From the table, we observe that all correlation coefficients are high, ranging between (0.67/0.83). These coefficients reflect clear stability for the tool.

Split-Half Reliability: Zainab Mahmoud Shaqeer used Spearman-Brown equation for split-half reliability between individual and paired items for a sample of 200 participants (equally divided between males and females). The reliability coefficients, using the split-half method, are evident in the following table:

Dimensions Scale	The Sample	Correlation Coefficient	Significance level
Personal Compatibility	200	0.58	0.01
Health Compatibility	200	0.65	//
Family Compatibility	200	0.73	//
Social Compatibility	200	0.78	//
Psychological Compatibility	200	0.87	//

From the table, it is evident that all reliability coefficients are significant at the 0.01 level, and they all show an increase in reliability.

Cronbach's Alpha Method: Cronbach's alpha coefficient was calculated using the alpha equation for a random sample consisting of 200 participants, equally divided between males and females. The results are illustrated in Table (07):

Dimensions Scale	The Sample	Correlation Coefficient	Significance level
Personal Compatibility	200	0.72	0.01
Health Compatibility	200	0.53	//
Family Compatibility	200	0.16	//
Social Compatibility	200	0.59	//
Psychological Compatibility	200	0.64	//

From the table, it is clear that the reliability coefficients for all dimensions, as well as the overall score, are positive and significant at the 0.01 level. This confirms the effectiveness of using the scale in scientific fields.

Study Results:

1- Presentation of the First Case: (Umm H.) A widow in her sixties, of average height, fair-skinned with hazel eyes. She presents a very coordinated appearance in terms of clothing colors and cleanliness. She discontinued her education at the third grade to assist her mother with household chores, as she was the eldest daughter among her sisters. She works as a custom mattress seamstress at her home. She has seven children, four of whom (2 boys, 2 girls) are her biological children, while the other three (2 boys, 1 girl) are the children of her deceased husband. Her husband passed away 25 years ago when she was in her sixth month of pregnancy. She currently lives with her youngest son and his wife in a rural area, while her other children are all married and reside in distant locations.

Her economic circumstances are very difficult as she relies on sewing and making some traditional foods, with weak demand. Her son does not assist her as he is unemployed, making her financially responsible for household expenses.

She was diagnosed with Type 1 diabetes in 1998 while pregnant. Today she relies on insulin injections five times a day (taking doses at 8:00 AM, 12:00 PM, 8:00 PM, and 12:00 AM).

Summary of the Analysis of the First Case Study (Conclusion):

Through the conducted clinical interview with the first case (Umm H.), we concluded that she has experienced psychological pressures in her life, stemming from her childhood. This is attributed to the harsh treatment by her father, restricting her freedom, and subjecting her to verbal and physical abuse. She received minimal attention, except in matters related to giving orders. Additionally, we found that the case still suffers from symptoms of

trauma, confirmed by the Davidson scale. The results indicated that she is experiencing severe trauma, with high scores of 18 for re-experiencing the trauma, 25 for avoidance, 18 for hyperarousal, and a total score of 61 on the scale. Initially, dealing with her was challenging due to her resistance and reservation. She tended to suppress her emotions and demonstrated a tendency towards silence. Therefore, we intensified the interviews to establish a trusting relationship with the patient.

After several interviews, the patient began to respond, but she heavily relied on defense mechanisms, especially "Repression," using it to forget details related to the amputation process. The case suffers from post-amputation stress symptoms, evident in morning interviews where signs of fatigue, irritation, and lack of concentration were noticeable. She often requested repetition due to disrupted sleep patterns, sleeping only two to three hours maximum due to heightened alertness, being easily awakened by even a slight noise. She struggled to enter sleep, plagued by thoughts about the fate of her remaining foot, still at risk of amputation at another level. The doctor had given her an opportunity before the second amputation, contributing to her heightened post-traumatic stress arousal.

In addition to suffering from the phantom limb phenomenon, she behaved as if her finger was still present, attempting to crack it, which became one of her habits. When standing, she does not act cautiously, exposing herself to a lot of pain. This caused frustration and led to her reacting by withdrawing into herself and experiencing intense sadness. However, she tried to alleviate this through the defense mechanism of "denial," always denying that she stood without feeling. To reinforce this, she used "rationalization," convincing herself that she wanted to use the bed rail or any tool.

We observed that the case strongly employs defense mechanisms, especially "avoidance." She would change the subject when discussing the reason for the amputation or the cause of her diabetes, always giving inconsistent answers and pretending not to understand, despite speaking to her at a level she comprehends. In addition to avoidance, she also uses "repression" and "displacement." She would not answer any questions about the day of her surgery or anything related to that day. Despite knowing each member of the internal medicine department individually due to frequent hospital visits, she

does not remember the day of her surgery or even the nurses on that day. She says, "I don't remember very well; that day is not important. What matters is the morning before the block, they were wearing white and I didn't see their faces."

We noticed that she often speaks with her eyes tightly closed, explaining her avoidance and subconscious refusal to recall the traumatic experience of amputation. After the interview, she would sometimes blame the doctors, nurses, or her children. This reflects the defense mechanism of "displacement" and is considered a symptom of post-traumatic stress, falling under the category of "avoidance symptoms."

However, after several interviews, the case (Umm H.) experienced a health setback at night. Similar to her usual behavior, we found her waiting for the session, but this time she recalled distorted scenes from the day of her surgery. She exhibited motor symptoms such as hand tremors. Immediately after greeting her, she began to talk about the content of her nightmares, which she actually experienced, saying, "Images came to me like the tape passing in front of my eyes, the day they cut off my finger. It's here between my eyes when they cut it and put it on the side, it hurt a lot, my finger." Notably, she showed signs of trembling and a shocked expression, then started crying. Here, we observe a symptom of post-traumatic stress, namely "re-experiencing," where these nightmares serve as a cathartic channel used to cope with ongoing stress.

The case (Umm H.) is experiencing a clear moral conflict. At times, she expresses acceptance of the amputation, claiming she is healthy, saying, "Thank God, it's in the past, and nothing more." However, quickly, she reacts emotionally, talking about her illness, stating, "I have no luck; everything happened to me since my childhood, and I am still suffering."

What we noticed in the case (Umm H.) is that this traumatic experience (amputation) directly affected her body image, physical appearance, and social relationships. This significantly impacted her health and psychological harmony. Therefore, we applied Zainab Mahmoud Shaqeer's Psychosocial Harmony Scale to confirm the impact of post-amputation stress on

psychosocial harmony. As expected, she obtained negative results with a score of (41), indicating a low level of psychosocial harmony. The case experiences clear psychosocial disharmony, feeling physically weak and in need of others, especially after not expecting help from anyone, as she said: "I fell, and no one cares. Health is difficult." Beyond the amputation itself as a disability depriving her of enjoying good health, she faces additional symptoms such as constant headaches and temperature fluctuations post-surgery, accompanied by tremors in her hands and difficulty concentrating. These factors contribute to her anxiety about the future, particularly as a seamstress who relies on precision in her hands and needs energy for confectionery work, which serves as a source of income for her and her family.

Furthermore, she suffers from poor personal harmony as the shock of amputation has had a psychological impact on her. We find that the case (Umm H.) is experiencing a prominent narcissistic wound, where she lost confidence in herself as a beautiful and complete woman. Her perception of her physical image and body layout has changed. When asked about her foot, she often touches her thigh and sighs. Here, we observe that, subconsciously, she feels betrayed by her body. Notably, the case maintains a well-coordinated choice of colors in her clothes, changes her attire daily, and stands out for her personal cleanliness. Additionally, she frequently uses a mirror placed in her own drawer. She consistently describes herself as someone who was once very beautiful. This explains her narcissistic wound as a woman.

We also observed that the case employs the mechanism of "isolation." When the nurse cleans her wound, she initially reacts with sadness, but quickly changes her expression to a smile while closing her eyes. This reflects the case's rejection of reality. She always requests the nurse, after finishing the cleaning, not to take away the cover used, to conceal her foot when visitors come. She dislikes visits due to her tension about questions regarding her amputated finger, especially from family members. According to the case, she didn't used to be like this, but recently, she has started avoiding people and doesn't enjoy talking much. She stated that in the future, she won't attend events or family gatherings because she feels embarrassed. Therefore, we can see that amputation has affected her social harmony, making her

uncomfortable with social interactions. She now avoids speaking and any contact with others. It was noticeable that she frequently complained about the other patients in the room, expressing annoyance and a reluctance to engage with them, referring to them as bothersome. This can be attributed to the poor psychological harmony caused by amputation.

Presenting the results for the first case:

- **Displaying the results of the Davidson Trauma Scale for the case (Sh, H):**

1. **Calculating the first index:**
   Recovery from traumatic experience (1, 2, 3, 4, 17): 3 + 4 + 4 + 3 + 4 = 18
2. **Calculating the second index:**
   Avoidance of traumatic experience (5, 6, 7, 8, 9, 10, 11): 4 + 4 + 3 + 4 + 4 + 4 + 2 = 25
3. **Calculating the third index: Arousal:**
   (12, 13, 14, 15, 16): 4 + 4 + 3 + 4 + 3 = 18

By applying the Davidson Trauma Scale for post-traumatic stress, the case (Sh, H) obtained a total of 61 points, falling within the correction scale of 51 to 68. This indicates that the case (Sh, H) suffers from severe post-traumatic stress indicators, with symptoms of avoidance scoring 25 points, and both recovery from traumatic experience and arousal symptoms scoring 18 points each.

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- **Presenting the results of the "Zainab Mahmoud Shaqeer 2003 Psychosocial Harmony Scale":**

The first case (Sh, H) obtained the following scores for each axis:

- Axis 1 (Personal/Emotional Harmony) = 9/20
- Axis 2 (Health Harmony) = 7/20
- Axis 3 (Family Harmony) = 13/20
- Axis 4 (Social Harmony) = 12/20

By applying the "Zainab Mahmoud Shaqeer 2003 Psychosocial Harmony Scale," the case scored a total of 41 points, indicating a low level of psychosocial harmony. The highest score was in the Family Harmony dimension compared to the other dimensions, followed directly by the Social Harmony dimension, and then the Personal/Emotional Harmony dimension. The lowest score was in the Health Harmony dimension compared to the scores of the aforementioned dimensions.

Haut du formulaire

Case 2 Presentation:

(B, A) is a man in his mid-fifties, of average height, with dark skin and brown eyes. He has a disheveled appearance, and his clothes consistently have food stains. He left school in the third grade due to academic struggles and a rebellious nature, leading to conflicts with the school environment.

(B, A) works as a painter, has two children, and resides in the municipality of Sidi Ali in the state of Mostaganem. His wife assigns him household responsibilities. (B, A) has been suffering from type 1 diabetes for five years and relies on insulin with four doses per day. Currently, he is staying at the hospital due to the amputation of one of his toes.

Summary of the Analysis of Case 2 (Conclusion):

Through the conducted clinical interview with the second case (B, A), it can be concluded that he experienced an unstable childhood due to frequent changes in residence, disrupting his life and potentially contributing to his academic struggles. Despite facing deprivation in his early years, the case found a coping mechanism through the compensatory strategy of working multiple jobs simultaneously to make up for what he lacked.

Moreover, (B, A) exhibits symptoms of post-traumatic stress as evidenced by the Davidson scale results, indicating a high level of trauma. The scores were 15 for re-experiencing, 27 for avoidance, and 16 for hyperarousal, with an overall score of 58. Identifying these symptoms was relatively straightforward

due to the case's cooperative nature and interest in the topic, making it easier to diagnose.

The case (B, A) also experienced improvements during the sessions, showing patience and eagerness to share details that could aid in diagnosis. He exhibited sudden mood changes, difficulty sleeping, nightmares, and challenges in concentration, which are indicative of post-traumatic stress symptoms. Additionally, he demonstrated defense mechanisms such as displacement and aggression to cope with the internal pressure caused by the amputation trauma.

These symptoms fall under the hyperarousal dimension. The case also showed clear signs of avoidance, such as requesting a change of place in the hospital room and avoiding topics related to his amputation. (B, A) currently struggles to find joy in life, particularly in activities that used to bring him happiness, like listening to music. He also faces challenges in envisioning his future, leading to feelings of helplessness and a loss of self-confidence, often expressed through tears when discussing his future.

The case employs the defense mechanisms of "repression" and "resistance" to alleviate the tension experienced during the amputation procedure. As he was under local anesthesia and witnessed the entire operation without any barrier between him and his amputated foot, the case was left in shock. However, when recounting the details of the surgery, he often presents a distorted sequence, sometimes laughing hysterically while describing pain.

When discussing the amputation process, the case exhibited the defense mechanism of "reaction formation," suppressing feelings of sadness and pain and expressing joy instead. The case finds relief by using the defense mechanism of "rationalization," providing plausible reasons for his behavior, such as expressing happiness despite the amputation. He justifies it by saying, "I am very weak since they cut my leg like a chicken leg. Prosthetics cause pain to my body," attempting to preserve his self-confidence.

These symptoms have affected the case's psychological well-being, evident in the low score of 45 on the Zainab Mahmoud Shuqair Psychological Compatibility Scale. Notably, the case withdrew familial investments,

especially toward his siblings, feeling diminished and unimportant compared to their past opinions of him. Following the amputation, the case perceives a change and does not prefer frequent communication with family members.

Moreover, the case's personal compatibility is significantly impacted, experiencing deep psychological frustration, negative emotional states, mood swings, difficulty getting out of bed, loss of self-confidence, annoyance, and dissatisfaction with life. The case no longer feels happiness, exhibits sudden mood changes, and struggles with a lack of passion and future aspirations. Whenever the future is mentioned, the case experiences emotional breakdowns, expressing a loss of hope in achieving his dreams due to the challenges of his current work.

Furthermore, the case's health compatibility is affected, employing the "somatization" mechanism to alleviate psychological pain. This is manifested through constant headaches, eating disorders, and occasional difficulty in articulating speech.

Presentation of the results for the second case :

Display of the results of the Davidson Trauma Scale for case (B, A)

- **Calculation of the first index:**
- Re-experiencing the traumatic event (1, 2, 3, 4, 17) 3 + 1 + 3 + 4 + 4 = 15
- **Calculation of the second index:**

Avoidance of the traumatic event (5, 6, 7, 8, 9, 10, 11) 4 + 4 + 4 + 4 + 4 + 3 + 4 = 27

- **Calculation of the third index: Arousal:**

(12, 13, 14, 15, 16) 4 + 4 + 3 + 4 + 1 = 16 Through the application of the Davidson Trauma Scale, case (B, A) obtained a total of 58 points. This places the case within the correction scale ranging from 51 to 68. This suggests that case (B, A) is experiencing severe indications of post-traumatic stress, with 27 points indicating symptoms of avoidance, 16 points indicating arousal symptoms, and 15 points for re-experiencing the trauma.

The first case (B, A) obtained the following scores for each axis in the "Psychological Compatibility of Dr. Zeinab Mahmoud Shukeir 2003" scale:

- Axis 1 (Personal/Emotional Compatibility) = 11/20
- Axis 2 (Health Compatibility) = 13/20
- Axis 3 (Family Compatibility) = 9/20
- Axis 4 (Social Compatibility) = 12/20

Through the application of the "Psychological Compatibility Scale for Zeinab Mahmoud Shaqeer 2003," the case obtains a score of (45), indicating a low level of psychological compatibility. She scores highest in the health dimension compared to other dimensions, followed closely by the social compatibility dimension. After that, the personal/emotional compatibility dimension has a lower score, and the family compatibility dimension has the lowest score compared to the previously mentioned dimensions.

Discussion of Hypotheses:

1- Discussion of the Main Hypothesis:

The hypothesis states that "Post-amputation trauma affects the psychological compatibility of patients with diabetes (type 1)."

The researcher studied two cases of amputees with type 1 diabetes who exhibited symptoms of post-traumatic stress disorder to test the validity of the general hypothesis. After confirming through interviews, observation, and the "Davidson Trauma Scale" test to verify the sample variable, as well as the "Psychological Compatibility Scale for Dr. Zeinab Mahmoud Shaqeer 2003" test, the researcher found that both cases suffered from poor psychological compatibility due to amputation, as evidenced by symptoms such as loss of self-confidence, withdrawal from social and familial investments, sleep and appetite disturbances, anger outbursts, aggressive behavior, heightened emotional reactivity, overall life dissatisfaction, and decreased self-esteem. Phantom limb pain was also noted.

This is indicated by the results of a study (Nuray et al, 2020, p. 1665) where it was found that individuals with post-traumatic lower limb amputation changed their emotions and behaviors after amputation, their body image and self-esteem were negatively affected, their families and the society

differentiated themselves, they had negative feelings about their future, and they needed mental support to develop coping skills.
In the results of another study of (Alessa et al, 2022, p. 1) showed there is a significant positive correlation between psychological adjustment total and satisfaction with prosthesis with PCS and MCS dimension of QOL. Considering the QOL, PCS mean score was significantly higher among prosthetics users than among non-users (68.2 ± 15.5 vs. 59.9 ± 12.8, respectively; P=.001). Also, the MCS score was significantly higher among prosthetics users than among non-users (59.5 ± 12.4 vs. 55.5 ± 13.0, respectively; P=.001). A total of 15.1% of caregivers experienced a high burden, while 23.3% had a mild to moderate burden, but 61.6% had no or little burden.

2- Discussion of the Subsidiary Hypothesis:

The first subsidiary hypothesis posits that physical health affects the psychological compatibility of type 1 diabetes patients experiencing post-amputation trauma.

Indeed, physical health does impact the psychological compatibility of type 1 diabetes amputees. Through our study of the research sample, we observed physical and psychological symptoms that manifested at the emotional and behavioral levels of the patients, such as headaches, temperature fluctuations, heart palpitations, hand tremors, sweating, and many other physical symptoms that were reflected in episodes of anger or self-isolation. The Psychological Compatibility Scale for Dr. Zeinab Mahmoud Shaqeer, particularly in the health dimension, indicated that both cases had weak points indicative of poor health compatibility.

Through our observations during interviews, we identified that the reason for poor health compatibility lies in the physical changes after amputation, which require the body to exert greater effort compared to pre-amputation. This aspect creates a psychological conflict for the cases due to the sudden change and their sense of helplessness in the face of this transformation, impacting their self-esteem. This aligns with the perspective of radical behaviorists like Watson and Skinner (1993), who suggested that poor compatibility arises from an individual's sense of incapacity and forming a negative self-concept.

And this is corroborated by Rothaban and others (1992), as they attributed physical changes and the individual's confrontation with demands exceeding their capacity to result in poor compatibility. According to Hamed Zahrani (1988), defects or physical alterations lead to the individual's psychological incompatibility.

Therefore, we can conclude that post-traumatic stress affects health compatibility directly. This is supported by Jazar (2001), who stated that any bodily change forms a negative self-concept for the patient, reflecting their inability to harmonize with the external world and causing a sense of psychological instability.

This is what was indicated by a study (McDonald, 2014, p. 1424) indicated that, in univariate analyses, depression, physical quality of life and body image disturbance were all poorer in the amputee group. These differences remained for body image disturbance (P = 0.005), but were no longer significant for depression or physical quality of life in multivariate analyses controlling for important demographic and medical variables.

The results of another study (Nuray et al, 2017, p. 6) showed that of the study is to address what kind of a nursing care needs to be provided by identifying psychosocial problems occurring in patients undergoing.

Conclusion:

Through the study, encompassing both theoretical and practical aspects, we have found that post-amputation trauma affects the psychological compatibility of type 1 diabetes patients. The physical changes experienced by the patients manifest in psychological symptoms, including withdrawal from familial and social investments, sleep disturbances, increased alertness, appetite disorders, depressive symptoms, frustration, diminished self-esteem, loss of self-confidence, sudden anger outbursts, mood swings, memory problems, phantom limb pain, anxiety, and tension.

Consequently, the impact of amputation trauma introduces the patient to a range of psychological disorders, influencing the emotional and relational aspects of the individual. Thus, the shock of amputation transforms the patient

from a psychologically balanced and ordinary individual to someone perpetually constrained by fear of the future and psychological turmoil. This alteration affects their psychological compatibility on personal/emotional, health, familial, and social levels. The study results, coupled with clinical observations, affirm that post-amputation trauma compromises the psychological compatibility of type 1 diabetes amputees, impeding both their personal and social lives.

Recommendation :

1. Clinical Interventions: Implement targeted clinical interventions that focus on addressing post-amputation stress disorder in patients with type 1 diabetes. These interventions should include psychological counseling, cognitive-behavioral therapy, and support groups to help patients cope with the emotional and psychological challenges associated with amputation.

2. Integrated Care Approach: Advocate for an integrated care approach that involves collaboration between mental health professionals, diabetes care providers, and rehabilitation specialists. This collaborative effort can enhance the overall well-being of patients by addressing both physical and psychological aspects of their condition.

3. Education and Awareness: Develop educational programs and awareness campaigns for healthcare providers, patients, and their families to increase understanding of the psychological impact of amputation on individuals with type 1 diabetes. This includes training healthcare professionals to identify early signs of post-amputation stress disorder and providing resources for effective intervention.

4. Patient and Family Support: Establish comprehensive support programs for patients and their families, including peer support networks and educational resources. Encourage open communication and involve family members in the patient's care to create a strong support system that can positively impact the patient's psychological adjustment.

5. Research Initiatives: Encourage and support research initiatives that explore the effectiveness of different psychological interventions for patients with type 1 diabetes who have undergone amputation. This can contribute valuable insights into evidence-based practices and innovative approaches to improve psychological adjustment outcomes.

6. Incorporate Mental Health Screening: Integrate routine mental health screenings into the standard care protocol for patients with type 1 diabetes, particularly those who have undergone amputation. Early detection of psychological distress can facilitate timely intervention and support.

7. Promote Holistic Wellness: Emphasize the importance of holistic wellness by addressing not only the physical and psychological aspects but also considering the social, cultural, and spiritual dimensions of patients' lives. Implement wellness programs that encompass various aspects of life to promote a more comprehensive approach to patient care.

8. Policy Advocacy: Advocate for policies that prioritize mental health support for individuals with chronic conditions like type 1 diabetes, especially those who have experienced amputation. This may include insurance coverage for mental health services and increased accessibility to psychological support resources.

References :

- Alessa M, Alkhalaf HA, Alwabari SS, Alwabari NJ, Alkhalaf H, Alwayel Z, Almoaibed F. The Psychosocial Impact of Lower Limb Amputation on Patients and Caregivers. Cureus. 2022 Nov 8;14(11):e31248. https://doi.org/10.7759/cureus.31248 PMID: 36505108; PMCID: PMC9731396.

- American Psychiatric Association,Dignostic and statistical manual of mentel disorder, Washington, Dc: American psychiatric publishing, (2013).

- McDonald S, Sharpe L, Blaszczynski A. The psychosocial impact associated with diabetes-related amputation. Diabet Med. 2014 Nov;31(11):1424-30. https://doi.org/10.1111/dme.12474 . Epub 2014 May 24. PMID: 24766143.

- Mounir Lotfi, Diabetes, Disease and Medicine, 2nd edition, Dar Al-Badr for Publishing and Distribution, (2015).

- Şimsek N, Küçük Öztürk G, Nahya Z. Psychosocial Problems and Care of Patients with Amputation. EJMI. 2017; 1(1): 6-9. https://doi.org/10.14744/ejmi.2017.22931

- Şimsek N, Öztürk GK, Nahya ZN. The Mental Health of Individuals With Post-Traumatic Lower Limb Amputation: A Qualitative Study. J Patient Exp. 2020 Dec;7(6):1665-1670. Epub 2020 Jun 9. PMID: 33457628; PMCID: PMC7786697. https://doi.org/10.1177/2374373520932451

- Zahida Abu Aisha, Atisir Abdullah, Post-Traumatic Stress Disorder (Theories, Symptoms, Treatment), 1st edition, Amman: Dar Wael for Publishing and Distribution, (2012).

- Zahran Hamed Abdel Salam, Mental Health and Psychotherapy, 3rd edition, Egypt, Cairo, Dar Alam al-Kutub for Printing, Publishing and Distribution, (2001)
- Zahran Hamed, Mental Health and Psychotherapy, 3rd edition, Cairo: Alam al-Kutub, (1997).