

Statistical Predictive Value of Negative Psychological Outcomes after Trauma Resulting from Dissociation of the Iraqi Population

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Abstract: This paper aims to know negative psychological outcomes after trauma resulting from the dissociation of the Iraqi population. Demographic information and data were collected from different hospitals in Iraq at a period of 8 months (2-4-2021 to 20-11-2021), where 90 patients were collected to know the psychological and neurological changes generated as a result of the trauma resulting from the dissociation of the Iraqi population. The design of this study was based on examining neuropsychiatric disorders on special scales to know the negative impact of Persistent Dissociation. The demographic data extracted on IBM SOFT SPSS 25 was analyzed. The results which found 90 patients collected distributed to (36 females - 54 males) with a mean + SD (30.2756+3.54855), Patients were also assessed on the PTSD scale, and the most severe post-traumatic assessment was found in patients with trauma type (Nonmotorized collision) at Mean±SD (27.2±7.5), The prevalence of depression was found in Motor vehicle collision patients at mean ±SD (23.5714±7.72424). We concluded that Dissociation related to the altered activity in certain areas of the brain and greatly affected the psychological and neurological state of patients.

Keywords: Dissociation, collision, neurological, assessment, PTSD, BDI, BMI, psychological.

INTRODUCTION

Persistent dissociation can help a person adapt to the effects of trauma by providing psychological distance from the experience, but at a high cost [Benjet, C. *et al.*, 2016; Kilpatrick, D. G. *et al.*, 2013]. In a 2009 Van Lamm study in which 209 patients were collected, Persistent Dissociation is often associated with more severe psychiatric symptoms [CDCPK, 2016; Franzke, I. *et al.*, 2015]. "Despite this, symptoms of schizophrenia remain understudied and undiagnosed due to a relative lack of understanding in medical and clinical practice [Kratzer, L. *et al.*, 2018; Sar, V, 2011]."

The findings suggest the importance of screening patients for symptoms associated with post-traumatic separation to identify at-risk individuals who may benefit from early interventions [Loewenstein, R. J. *et al.*, 2018].

Scientific studies found that derealization was linked to altered activity in specific brain regions detected through brain imaging [Stein, D. J. *et al.*, 2013].

"Consequently, persistent derealization is both an early psychological marker and a biomarker of worse psychiatric outcomes later, and its neural correlates in the brain may serve as potential future targets for therapies to prevent PTSD [Kenwood,

M.M. *et al.*, 2022; Raichle, M. E, 2015; Rolls, E. T, 2019]."

Results of the 2014 San Martin Jonas Study in Colombia suggest that for people experiencing trauma, the presence of separation may indicate a higher risk of developing more severe post-traumatic stress in the future, depression, anxiety, physical pain, and social impairment [Kessler, R.C. *et al.*, 1995; O'Donnell, M.L. *et al.*, 2004].

Based on the studies conducted and the most recent work in the clinical neuroscience of PTSD [Gilam, G. *et al.*, 2017], a model has been established where certain requirements must be met when assessing the response to a traumatic event 1) a sufficient afferent stimulus to allow an analysis of the nature of PTSD; [Roekner, A.R. *et al.*, 2021] a feared event 2) neural interactions throughout the brain structures that must be able to integrate the past experience into the cognitive evaluation of the stimulus; 3) The outgoing projection of the brain must be able to mediate neuroendocrine, autonomic and motor responses [Van der Kolk, B.A. *et al.*, 1996].

The neurobiology of PTSD has been a topic of research interest in which a clear neurobiological differentiation with depression and anxiety disorders has been identified [Foote, B. *et al.*,

2008; Epskamp, S. et al., 2012]. Areas of study include changes in neurotransmitters (mainly norepinephrine, dopamine, serotonin, endogenous opioids, benzodiazepine receptors, and the glutamine system), hypothalamic-pituitary-adrenal axis hyperactivity, thyroid function, increased autonomic nervous system activity, and reactivity, and differences in brain structure and function [Epskamp, S. et al., 2018; Roydeva, M.I. et al., 2020; McLean, S.A. et al., 2020]

To understand the biological underpinnings of PTSD, [Bernstein, D.P. et al., 1997] one must consider the neurobiology of stress [Dalenberg, C. et al., 2010]. In fact, PTSD has been considered to be the result of biological and psychological changes resulting from the activation of brain regions associated with cognition and response to stress [Weathers, F.W. et al., 2013].

MATERIAL AND METHOD

Patient Sample

Demographic information and data were collected from different hospitals in Iraq, where 90 patients were collected to know the psychological and neurological changes generated as a result of the trauma resulting from the dissociation of the Iraqi population.

Study Design

In this study, 90 patients with an average age ranging between 23-36 years of Iraqi patients were collected. The design of this study was based on examining neuropsychiatric disorders on special scales to know the negative impact of Persistent Dissociation. The demographic data extracted on IBM SOFT SPSS 25 was analyzed. The study was distributed among patients according to gender (36 female patients - 56 male patients).

RESULTS

Several scales were relied on for the purpose of knowing the negative impact on the neurological and psychological state. The severity of depression was evaluated for patients on a scale Beck Depression Inventory. It is a method that was invented and developed in the early 1961 AD by a famous psychologist, Aaron Beck, in order to measure the degree of depression in patients.

The PTSD Scale was developed as a brief and reliable measure of a person who is believed to have PTSD. The objective of this scale is to examine the presence of PTSD for patients who self-identify as victims of a traumatic event.

Assessment of symptom severity and its impact on patients already diagnosed with PTSD.

This test is self-administered and can be completed in 10-15 minutes. The scale contains 49 items and a short list of several potentially distressing events for the patient.

A logistic analysis was conducted to determine the factors that were more dangerous to patients, and the statistical differences between patients were expressed to find out the statistical significance.

Study Period

Data were collected and analyzes conducted to identify neurological disorders to patients after trauma at a period of 8 months (2-4-2021 to 20-11-2021)

Aim of Study

This paper aims to know negative psychological outcomes after trauma resulting from the dissociation of the Iraqi population.

Table 1: Demographic results according to BMI, AGE, incomes

| | | Statistics | | |
|--------------------|---------|------------|---------|------------|
| | | BMI | age | income |
| N | Valid | 90 | 90 | 90 |
| | Missing | 6 | 6 | 6 |
| Mean | | 30.2756 | 36.8444 | 998.2222 |
| Std. Error of Mean | | .37405 | .49867 | 51.87462 |
| Median | | 30.8500 | 36.0000 | 960.0000 |
| Mode | | 30.90 | 33.00 | 400.00 |
| Std. Deviation | | 3.54855 | 4.73075 | 492.12581 |
| Variance | | 12.592 | 22.380 | 242187.815 |
| Range | | 13.90 | 15.00 | 1800.00 |
| Minimum | | 23.00 | 30.00 | 400.00 |
| Maximum | | 36.90 | 45.00 | 2200.00 |

Table 2: Distribution of patients according to sex

| | | sex | | | |
|-------|--------|-----------|---------|---------------|--------------------|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | | 6 | 6.3 | 6.3 | 6.3 |
| | female | 36 | 37.5 | 37.5 | 43.8 |
| | male | 54 | 56.3 | 56.3 | 100.0 |
| | Total | 96 | 100.0 | 100.0 | |

Table3: Distribution of patients according to Descriptive, Trauma type

| Descriptives ^{a, b} | | | | | |
|------------------------------|-------------------------|----------------------------------|---------|-----------|------------|
| | | Trauma type | | Statistic | Std. Error |
| age | Burns | Mean | | 40.8000 | 1.77200 |
| | | 95% Confidence Interval for Mean | | LB | 35.8801 |
| | | | | UB | 45.7199 |
| | Std. Deviation | | 3.96232 | | |
| | Fall>10 | Mean | | 36.2353 | 1.03799 |
| | | 95% Confidence Interval for Mean | | LB | 34.0349 |
| | | | | UB | 38.4357 |
| | Std. Deviation | | 4.27974 | | |
| | Motor vehicle collision | Mean | | 37.8000 | .88669 |
| | | 95% Confidence Interval for Mean | | LB | 35.9980 |
| | | | | UB | 39.6020 |
| | Std. Deviation | | 5.24573 | | |
| | Physical | Mean | | 35.8889 | .83433 |
| | | 95% Confidence Interval for Mean | | LB | 34.1739 |
| | | | | UB | 37.6039 |
| | | Std. Deviation | | 4.33531 | |
| | Kurtosis | | -.522 | | .872 |
| | Nonmotorized collision | Mean | | 34.2000 | 1.01980 |
| | | 95% Confidence Interval for Mean | | LB | 31.3686 |
| | | | | UB | 37.0314 |
| Std. Deviation | | 2.28035 | | | |

a. There are no valid cases for an age when typeturma = .000. Statistics cannot be computed for this level.

b. age is constant when typeturma = Fall<10. It has been omitted.

Table 4: Outcomes of patients according to scale which used in the study

| | | Statistics | | | |
|--------------------|---------|---------------------------|---------|---------|------------|
| | | Beck Depression Inventory | PDS | Anxiety | Impairment |
| N | Valid | 90 | 90 | 90 | 90 |
| | Missing | 6 | 6 | 6 | 6 |
| Mean | | 21.1667 | 24.2444 | 6.4667 | 10.2000 |
| Std. Error of Mean | | .75571 | .63390 | .15738 | .74773 |
| Median | | 19.0000 | 20.0000 | 7.0000 | 8.0000 |
| Mode | | 18.00 | 20.00 | 8.00 | 7.00 |
| Std. Deviation | | 7.16930 | 6.01368 | 1.49306 | 7.09360 |
| Variance | | 51.399 | 36.164 | 2.229 | 50.319 |
| Range | | 28.00 | 21.00 | 5.00 | 61.00 |
| Minimum | | 10.00 | 18.00 | 4.00 | 5.00 |
| Maximum | | 38.00 | 39.00 | 9.00 | 66.00 |

Table 5: Distribution of Beck Depression Inventory according to Trauma type

| Descriptive | | | | | |
|-------------|-------|-------------|--|-----------|------------|
| | | Trauma type | | Statistic | Std. Error |
| PDS | Burns | M | | 23.4000 | 3.65513 |

| | | | | | | | |
|------------------------|-------------------------|--------|---------|---------|---------|---------|---------|
| | | 95% CM | LB | 13.2517 | | | |
| | | | UB | 33.5483 | | | |
| | | SD | | | 8.17313 | | |
| | Fall>10 | M | | | | 25.3529 | 1.62005 |
| | | 95% CM | LB | 21.9186 | | | |
| | | | UB | 28.7873 | | | |
| | SD | | | 6.67964 | | | |
| | Motor vehicle collision | M | | | | 23.2000 | .86462 |
| | | 95% CM | LB | 21.4429 | | | |
| | | | UB | 24.9571 | | | |
| | SD | | | 5.11514 | | | |
| | Physical | M | | | | 24.4074 | 1.19741 |
| | | 95% CM | LB | 21.9461 | | | |
| | | | UB | 26.8687 | | | |
| | SD | | | 6.22192 | | | |
| Nonmotorized collision | M | | | | 27.2000 | 3.36749 | |
| | 95% CM | LB | 17.8503 | | | | |
| | | UB | 36.5497 | | | | |
| SD | | | 7.52994 | | | | |

a. There are no valid cases for PDS when $\text{typeturma} = .000$. Statistics cannot be computed for this level.
 b. PDS is constant when $\text{typeturma} = \text{Fall} < 10$. It has been omitted.

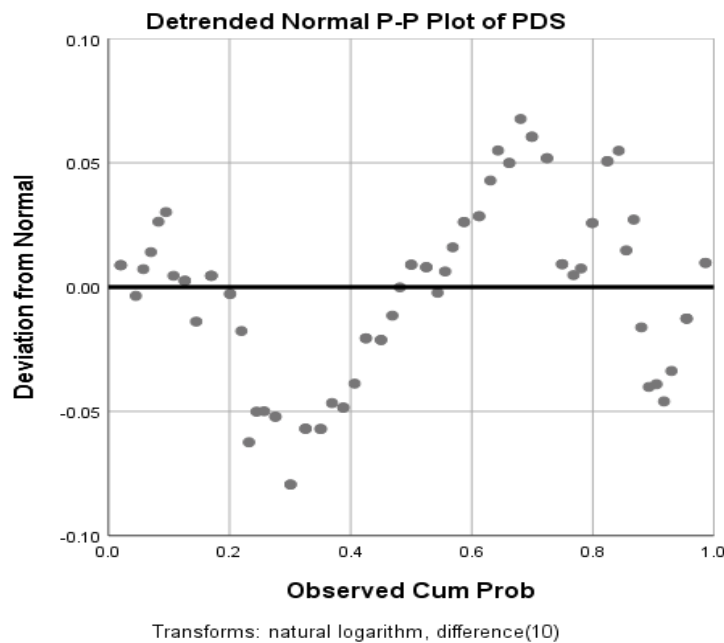


Figure 1: P-Plot analysis PDS of study

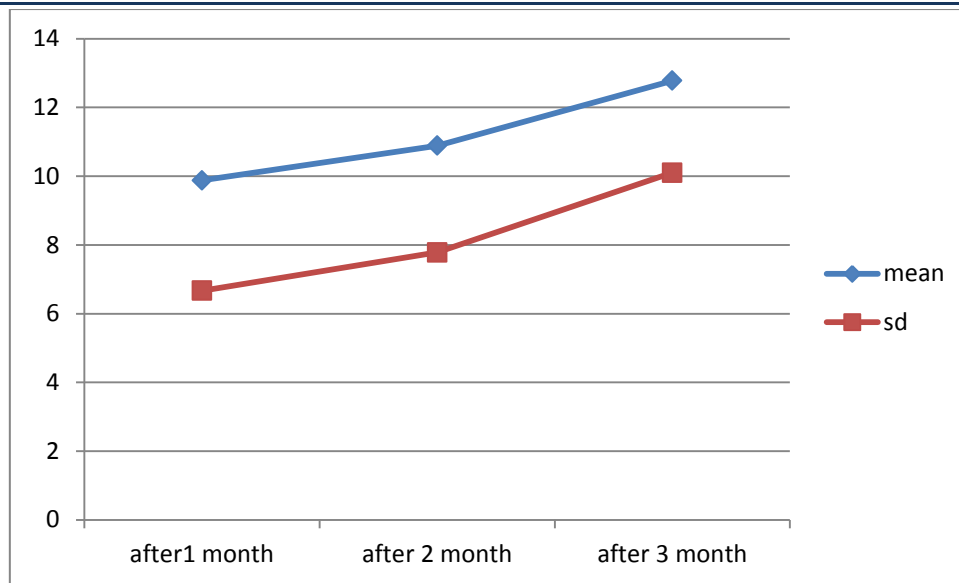


Figure 2: Outcomes of Derealization according to Impairment

Table 7: Logistic regression to the analysis of risk factor

| Variable | CI-95% | P-value |
|-------------|-----------------|---------|
| Age | 1.2(0.8-1.6) | 0.034 |
| Trauma type | 2.2(1.5-3.4) | <0.001 |
| Depression | 1.9(1.7-2.3) | <0.001 |
| PDS | 2.4(1.88-3.7) | <0.001 |
| Anxiety | 1.6(1.3-1.9) | 0.067 |
| Impairment | 1.67(1.22-1.98) | 0.0345 |

DISCUSSION

This study was conducted on Iraqi patients to find out the effects of continuous disintegration on the psychological and neurological state after trauma. In this study, the statistical analysis program IBM Soft spss 25 was relied on, and the average age ranged between 23-36 years, as 90 patients were collected and distributed according to gender (36 patients are women with 37.5%, 54 patients are males, 56.3% are males) as shown in Table 3.

In Table 4, which shows the Distribution of patients according to Descriptive, Trauma type. We note that burns were spread over ages (40.80±3.96), falls>10 feet with (36.2±4.2), and the spread of Motor vehicle collision was observed to patients aged (37.8 ± 5.2)

The level of depression was measured on the BDI scale. The scale consisted of 21 questions that varied between symptoms and common everyday situations that can occur among people with depression, such as mood, lack of self, social isolation, sleep disturbance, and other situations. The answers to these questions are categorized in terms of intensity, where the question takes a score between 0 to 3, and if choose zero, it means that the presentation is not severe, but if choose 3, it

means the intensity of presentation, then the answer numbers are summed linearly to get a score ranging from 0 to 63. with mean ±sd (21.16±7.16).

Patients were also assessed on the PTSD scale, and the most severe post-traumatic assessment was found in patients with trauma type (Nonmotorized collision) at Mean±SD (27.2±7.5)

Through the use of the normality analysis in the statistical analysis program, we note that most of the patients from 60% of patients recorded abnormalities to PDS, and this indicates the significant impact that the continuous disassembly has on patients from a neurological and psychological point of view after trauma, as shown in Figure 1

This study agreed with Kil Owen 2013 in Ecuador, where 390 patients were collected in this study, and the patients were distributed according to gender (200 male patients - 190 female patients). In our study, a logistic analysis was conducted to identify the risk factors for this study, and the quality of trauma was 2.2 (1.5-3.4) <0.001 as the most dangerous factor for patients, as shown in Table 7

In another study, patients who reported derealization tended to have higher levels of post-traumatic stress, anxiety, depression, pain, and functional impairment at a 3-month follow-up. Furthermore, both self-reported scan results and derealization brain imaging findings predicted worse PTSD symptoms at follow-up examination, even after accounting for baseline PTSD symptoms and histories.

CONCLUSION

The results indicate the importance of screening patients for symptoms associated with post-traumatic stress dissociation to identify at-risk individuals who may benefit from early interventions.

Scientists found Dissociation related to the altered activity in certain areas of the brain and greatly affected the psychological and neurological state of patients, which was discovered through the use of several measures.

Thus, persistent dissociation from reality is both an early psychological marker and a biomarker of later worse psychological outcomes, and its neural correlates in the brain may serve as potential future targets for therapies to prevent PTSD.

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