Dissociative disorders are conditions that involve disruptions of memory, awareness, identity, or perception. Data collected in diverse geographic locations underline the consistency in clinical symptoms of dissociative disorders. In this cross-sectional descriptive study, prevalence of dissociative experiences has been screened in hospitalized patients in psychiatric wards of Shiraz University of Medical Sciences in Iran. One hundred and sixty patients in two hospitals entered the study. Our tool to screen the prevalence of dissociative experiences was Dissociative Experience Scale (DES). Linear regression analysis shows that gender and age are predictors of high DES scores to some extent while psychiatric disorders are not good predictors. Age, gender, and psychiatric disorders are poor predictors (almost 7%) of high DES scores in this study (R square=0.69). In this study, patients with Borderline Personality Disorder had higher dissociative experiences based on DES score (Mean: 56.44), followed by Schizophrenic patients (Mean: 28.22) and patients with Bipolar Personality Disorder (Mean: 25.18). This study showed that we might be able to create a new category in psychological disorders based on dissociative experiences. As age, gender and psychological disorders were poor predictors of dissociative experiences, stronger predictors such as positive childhood psychological traumas could be responsible for dissociative disorders.

Abbreviations: DES: Dissociative Experience Scale; PTSD: Post Traumatic Stress Disorder; SCID: structured clinical interview for DSM-IV; CIDI: Composite International Diagnostic Interview; DDIS: Dissociative Disorders Interview Schedule; MDD: Major Depressive Disorder; OCD: Obsessive Compulsive Disorder; SPSS: Statistical Package for Social Sciences; ANOVA: Analysis Of Variance; LSD: Least Significant Difference

Introduction

Dissociation is defined as a perceived detachment of the mind from the emotional state or even from the body and it describes a wide array of experiences from mild detachment from immediate surroundings to more severe detachment from physical and emotional experience. Dissociative disorders are conditions that involve disruptions or breakdowns of memory, awareness, identity, or perception [1]. Dissociation may be sudden or gradual, transient, or chronic. Many studies in different geographic locations such as North America (2), Puerto Rico (3), Western Europe (4), Turkey (5), and Australia (6) have highlighted the consistency in clinical symptoms of dissociative disorders. These clinical case series have also underlined the association between childhood psychological trauma and dissociative disorders among all psychiatric disorders. Childhood sexual (57.1%–90.2%), emotional (57.1%), and physical (62.9%–82.4%) abuse and neglect (62.9%) are among them [2-6]. Although dissociation constitutes a diagnostic category separately, dissociative symptoms may be evident in almost all psychiatric disorders [7] including borderline personality disorder [8,9], conversion disorder [10], and obsessive-compulsive disorder [11]. In those cases, dissociation is usually linked to childhood trauma history, suicidal attempt and self-mutilation behavior regardless of the main diagnosis [7]. Dissociative subtypes have been proposed for psychiatric disorders such as PTSD [8] and schizophrenia [12,13]. Different tools such as structured clinical interview for DSM-IV (SCID) and composite international diagnostic interview (CIDI) have not been suitable to screen dissociative disorders [14,15] and many large-scale studies using general psychiatric instruments have failed to diagnose dissociative disorders appropriately and have led to biased reports [16-18]. Studies using assessment tools screening dissociative disorders have been useful to resolve this matter. Dissociative experiences scale (DES) which is a subjective measure [19] and structured diagnostic interviews such as dissociative disorders interview schedule (DDIS), [20] and structured clinical interview for dissociative disorders (SCID-D), [21] are the most popular tools frequently used. Similar studies have taken place in other geographical locations worldwide and conducting this study together with the studies in Turkey is of great value to reflect the dissociative experiences of the region.

Materials and Methods

In this cross-sectional descriptive study, prevalence of dissociative experiences has been screened in hospitalized patients in psychiatric wards of Shiraz University of Medical Sciences in Iran. The goal of this survey is to screen the prevalence of Dissociative experiences in inpatients of two teaching hospitals and to evaluate and compare the prevalence of this
Dissociative Experiences in Psychiatric Inpatients

Results and Discussion

One hundred and sixty patients entered the study with DES score ranging from 0-100 with a mean score of 22.95. Ninety-one patients (56.9%) scored higher than 15; Seventy-two patients (45%) higher than 20; Sixty-one patients (38.1%) higher than 25 and forty-eight patients (30%) higher than 30. There was a significant difference between the scores of Borderline personality disorder versus other disorders. Breakdown of patients in normal, mild, moderate and severe categories is shown in Table 1. No difference was identified in both genders in this regard (Table 2). Table 3 illustrates the severity in different disorders. The mean DES score was 22.95 (SD=20.73), highest score belonged to patients with Borderline personality disorder (56.44) and Schizophrenic patients (28.22) and the minimum score belonged to OCD patients (8.20), (Table 4). The Variance analysis of DES scores in each disorder is reflected in tables 5-10. Based on post hoc test (LSD) there is a significant difference between Borderline personality disorder patients and other disorders. On the other hand, there was no significant difference between Conversion disorder patients and other disorders, except Borderline personality disorder patients. No significant difference was seen between patients of Borderline personality disorder and Schizophrenia, however there was a significant difference between former two disorders and MDD patients. As shown in Table 4, 61 women entered the study with mean score of 19.11 (Min: 0, Max: 89) and 99 men entered the study with mean score of 25.32 (Min: 0 and Max: 100). Correlation between gender, age and DES were analyzed by Pearson correlation. The result for gender and DES was 1.46 (p-value: 0.066), and this correlation between age and DES was 1.98 (p-value: 0.012). Linear regression analysis shows that gender and age are predictors of high DES scores to some extent while psychiatric disorders are not good predictors (Tables 5-11). Age, gender and psychiatric disorders are poor predictors (almost 7%) of high DES scores in this study (R square=0.69) (Table 10).

Table 1: DES categories/breakdown.

|       | Normal | Mild | Moderate | Severe |
|-------|--------|------|----------|--------|
| Number| 71     | 17   | 26       | 46     |
| Percentage| 44.4 | 10.6 | 16.2     | 28.8   |

Table 2: DES categories based on Gender

|       | Normal | Mild | Moderate | Severe | Total |
|-------|--------|------|----------|--------|-------|
| Men   | 39     | 10   | 18       | 32     | 99    |
| Women | 54.90% | 58.80% | 69.20% | 69.60% | 61.90% |
|       | 32     | 7    | 8        | 14     | 61    |
|       | 45.10% | 41.20% | 30.80% | 30.40% | 38.10% |
| Total | 71     | 17   | 26       | 46     | 160   |
|       | 100%   | 100% | 100%     | 100%   | 100%  |

Table 3: DES categories in different psychiatric disorders.

|       | Normal | Mild | Moderate | Severe | Total |
|-------|--------|------|----------|--------|-------|
| Bipolar | 9      | 3    | 6        | 9      | 27    |
|        | 12.70% | 17.60% | 23.10% | 19.60% | 16.90% |
| Borderline | 0     | 0    | 0        | 12     | 12    |
| Personality | 0%    | 0%   | 0%       | 26.10% | 7.50%  |
| Conversion | 6      | 3    | 2        | 1      | 12    |
|        | 8.50% | 17.60% | 7.70% | 2.20%  | 7.50%  |
| Major depression | 29 | 4   | 2       | 6      | 41    |
|        | 40.80% | 23.50% | 7.70% | 13.00% | 25.60% |
| Obsessive compulsive | 13 | 3  | 1       | 0      | 17    |
|        | 18.30% | 17.60% | 3.80% | 0%     | 10.60% |
| Schizophrenia | 14 | 4 | 15 | 18 | 51 |
|        | 19.70% | 23.50% | 57.70% | 39.10% | 31.90% |
| Total | 71     | 17   | 26       | 46     | 160   |
|       | 100%   | 100% | 100%     | 100%   | 100%  |

Table 4: DES results in different Psychiatric disorders.

|       | No. | Mean | SD | Minimum score | Maximum score |
|-------|-----|------|----|---------------|---------------|
| Bipolar | 27 | 25.1796 | 15.78 | 1 | 64 |
| Borderline | 12 | 56.4476 | 20.65 | 28 | 100 |
| Conversion | 12 | 19.1417 | 19.86 | 2 | 77 |
| Major depression | 41 | 12.3524 | 12.27 | 0 | 50 |
| Obsessive Compulsive | 17 | 8.2 | 7.54 | 0 | 22 |
| Schizophrenia | 51 | 28.2296 | 21.18 | 0 | 90 |
| Total | 160 | 22.953 | 20.73 | 0 | 100 |
### Table 5: DES results in Borderline Personality Disorder versus other disorders.

| Categories                      | Mean Difference | Std. Error | 95% Confidence Interval | Sig. |
|---------------------------------|-----------------|------------|-------------------------|------|
| Bipolar Disorder                | 31.26787        | 5.92176    | 14.1781 - 48.3577       | 0    |
| Conversion Disorder             | 37.30583        | 6.96811    | 17.1963 - 57.4153       | 0    |
| Major Depressive Disorder       | 44.09506        | 5.60204    | 27.9279 - 60.2622       | 0    |
| Obsessive Compulsive Disorder   | 48.2475         | 6.43539    | 29.6754 - 66.8196       | 0    |
| Schizophrenia                   | 28.21789        | 5.47627    | 12.4137 - 44.0221       | 0    |

### Table 6: DES results in Bipolar Disorder versus other disorders.

| Categories                      | Mean Difference | Std. Error | 95% Confidence Interval | Sig. |
|---------------------------------|-----------------|------------|-------------------------|------|
| Borderline personality disorder | -31.2679        | 5.92176    | -48.3577 - -14.1781     | 0    |
| Conversion Disorder             | 6.03796         | 5.92176    | -11.0518 - 23.1278      | 0.911|
| Major Depressive Disorder       | 12.82719        | 4.2303     | 0.6188 - 25.0356        | 0.033|
| Obsessive Compulsive Disorder   | 16.97963        | 5.28458    | 1.7287 - 32.2306        | 0.02 |
| Schizophrenia                   | -3.04998        | 4.06229    | -14.7735 - 8.6735       | 0.975|

### Table 7: DES results in Conversion Disorder versus other disorders.

| Categories                      | Mean Difference | Std. Error | 95% Confidence Interval | Sig. |
|---------------------------------|-----------------|------------|-------------------------|------|
| Bipolar Disorder                | -6.03796        | 5.92176    | -23.1278 - 11.0518      | 0.911|
| Borderline personality disorder | -37.3058        | 6.96811    | -57.4153 - -17.1963     | 0    |
| Major Depressive Disorder       | 6.78923         | 5.60204    | -9.3779 - 22.9563       | 0.831|
| Obsessive Compulsive Disorder   | 10.94167        | 6.43539    | -7.6304 - 29.5138       | 0.534|
| Schizophrenia                   | -9.08794        | 5.47627    | -24.8921 - 6.7162       | 0.561|

### Table 8: DES results in Obsessive Compulsive Disorder versus other disorders.

| Categories                      | Mean Difference | Std. Error | 95% Confidence Interval | Sig. |
|---------------------------------|-----------------|------------|-------------------------|------|
| Bipolar Disorder                | -16.9796        | 5.28458    | -32.2306 - -1.7287      | 0.02 |
| Borderline personality disorder | -48.2475        | 6.43539    | -66.8196 - -29.6754     | 0    |
| Conversion Disorder             | -10.9417        | 4.92366    | -18.3618 - 10.0569      | 0.959|
| Major Depressive Disorder       | 4.15244         | 4.78008    | -33.8246 - 6.2346       | 0.001|
| Schizophrenia                   | -20.0296        | 4.78008    | -33.8246 - 6.2346       | 0.001|

### Table 9: DES results in Major Depressive Disorder versus other disorders.

| Categories                      | Mean Difference | Std. Error | 95% Confidence Interval | Sig. |
|---------------------------------|-----------------|------------|-------------------------|------|
| Bipolar Disorder                | -12.8272        | 4.2303     | -25.0356 - -0.6188      | 0.033|
| Borderline personality disorder | -44.0951        | 5.60204    | -60.2622 - -27.9279     | 0    |
| Conversion Disorder             | -6.78923        | 5.60204    | -22.9563 - 9.3779       | 0.831|
| Obsessive Compulsive Disorder   | 4.15244         | 4.92366    | -10.0569 - 18.3618      | 0.959|
| Schizophrenia                   | -15.8772        | 3.5802     | -26.2094 - -5.5449      | 0    |
Table 10: DES in Schizophrenia versus other disorders.

| Categories                | Mean Difference | Std. Error | Lower Bound | Upper Bound | Sig. |
|---------------------------|-----------------|------------|-------------|-------------|------|
| Schizophrenia             | Bipolar Disorder| 3.0499     | 4.0629      | -8.6735     | 14.7735 | 0.975 |
|                           | Borderline personality disorder | -28.2179 | 5.47627     | -44.0221    | -12.4137 | 0     |
|                           | Conversion Disorder | 9.08794 | 5.47627     | -6.7162     | 24.8921  | 0.561 |
|                           | Major Depressive Disorder | 15.87717 | 3.5802      | 5.5449      | 26.2094  | 0     |
|                           | Obsessive Compulsive Disorder | 20.02961 | 4.78008     | 6.2346      | 33.8246  | 0.001 |

Table 11: Predictor variables in Dissociative Experiences in this study R=0.069.

| Model       | Unstandardized Coefficients | Standardized Coefficients | t   | Sig. |
|-------------|----------------------------|---------------------------|-----|------|
|             | B                          | Std. Error                | Beta|      |
| Fix         | 49.546                     | 7.992                     |     |      |
| Disorder    | -1.183                     | 0.912                     | -0.104 | 6.2  | 0.197 |
| Gender      | -6.788                     | 3.34                      | -0.16 | -2.032 | 0.044 |
| Age         | -0.068                     | 0.165                     | -0.176 | -2.231 | 0.027 |

Conclusion

The goal of this study was to evaluate the dissociative experiences in psychiatric inpatients of Shiraz University of Medical Sciences. This study and all similar studies are based on personal feedbacks of interviewees that play a big role in validity of such studies. In this study the opposite relationship that had been proven before between age and degree of dissociative experiences [22] has been approved, therefore, we can conclude that this study has an acceptable validity and reliability. According to DES scores in this study we can divide patients into two groups with high dissociative experiences (Borderline personality, Bipolar disorders and Schizophrenia) and low dissociative experiences (Conversion, Obsessive-Compulsive and Major depressive disorders). Since our target population were all inpatients, and inpatients of Borderline Personality Disorder had severe symptoms which had resulted in their hospitalization, it may be translated in this way that this study divided patients with severe psychiatric symptoms from patients with milder symptoms based on DES score. This could be related to improper diagnosis in the hospitalized patients. Most probably by looking deeper and making better diagnosis among patients with high DES scores, some of them would be diagnosed as patients with Dissociative disorders in the same line as previous mentioned studies.

Dissociative experiences screened in this study (Mean DES score: 22.95) are greater than previous studies in North America (Mean DES score: 14.6) [23,24], Switzerland (Mean DES score: 13.7) [25], and Turkey (Mean DES score: 17.8) [26]. Also, 45% of patients in this study scored higher than 20 that is higher than previous study results in North America (30%) and Switzerland (20%) but less than the study results in Turkey (56%).

As Sar, V. (2011) has mentioned [27], data collected in diverse geographic locations in the world has underlined the consistency in clinical symptoms of dissociative disorders. Dissociative patients report highest frequencies of childhood psychological trauma such as childhood sexual, emotional, and physical abuse and neglect, among all psychiatric disorders. In this study, patients with Borderline Personality Disorder had higher dissociative experiences based on DES score (Mean: 56.44), followed by Schizophrenic patients (Mean: 28.22) and patients with Bipolar Personality Disorder (Mean: 25.18). In this study there was no difference in the Mean DES score between men and women. In other studies in Germany [28] and Finland [29] there were also no difference in this regard, however, in a study in Turkey, there were twice the chance of higher score in women compared to men [30]. This difference could be justified by cultural difference and different childhood psychological traumas in different countries.

Linear regression analysis shows that gender and age are predictors of high DES scores to some extent while psychiatric disorders are not good predictors. This means that by controlling age and gender, there would be no difference in DES score in different disorders. These three factors (age, gender and disorder) are poor predictors (almost 7%) of high DES scores in this study (R square=0.69) (Table 10). Similar studies have concluded that childhood psychological trauma is a strong variable in predicting high DES scores. It may be concluded that our diagnosis of disorders were not accurate and by a deeper look and better diagnosis, some patients especially the ones with high DES scores and severe psychiatric symptoms would be diagnosed as “Dissociative Disorder” and would reflect positive childhood history of psychological traumas.

In other words, we may be able to define a subclass in each disorder based on childhood psychological traumas. Paying more attention to such subclasses related to Dissociative disorders would result in better management and treatment of such disorders. This study showed that we might be able to create a new category in psychological disorders based on dissociative
experiences. As age, gender and psychological disorders were poor predictors of dissociative experiences, stronger predictors such as positive childhood psychological traumas could be responsible for dissociative disorders.

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