



## Social Factors that Exacerbate Features of Borderline Personality Disorder in Young Adult Women between 25 and 35 Years of Age Living in the Commonwealth of Puerto Rico

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### Abstract

**Introduction:** Although there are studies conducted with Hispanics and Puerto Ricans living in the United States, there are no studies with female Puerto Rican BPD patients residing in the Commonwealth of Puerto Rico available. Since most of the individuals affected by this condition are female, the present research was focused on uncovering factors that increased the likelihood of BPD features in women between the ages of 25-35 years. **Purpose:** The purpose of this study was to examine the social factors that exacerbate borderline personality disorder in the female population between 25 and 35 years of age living in the metropolitan area of the Commonwealth of Puerto Rico based on Crowell, Beauchaine & Linehan's Biosocial Model for BPD [1]. **Design:** The study design was a medical record review using an investigator-developed chart review tool. This technique was used to count and rank the social factors that exacerbated BPD in the sample. **Setting:** The study took place at a regional hospital in a large metropolitan city in Puerto Rico. The chart abstraction process was carried out in the Information Management Department (IMD). The IMD director arranged for the charts to be available to the researcher and trained research assistants. **Sample:** The sample for this study consisted of 50 medical records of patients meeting the following inclusion criteria: 1) female, 2) hospital admission with a diagnosis of BPD, 3) age 25 to 35 at time of hospital entry, 4) BPD diagnosis prior or on the date of hospital admission, 5) BPD diagnosis included either the administration of McLean Screening Instrument for BPD (MSI-BPD) or the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), 6) the client chart is available, and 7) the client chart includes a signed data release Data Collection Dates: November, 2017

**Methods:** Medical records of patients who met the study inclusion criteria were made available by the director of the Information Management Department. The charts were then reviewed by the researcher and her assistants. The reviews took from 2 to 4 hours per chart. Fifty records were evaluated. These were about 10% of the BPD population receiving treatment. Descriptive statistics were used to describe the basic features of the data in the study. **Findings:** Most of the females had experienced sexual abuse trauma due to being raped, sexually abused or molested by relatives or an unknown person. The specific social factors that exacerbated features of BPD among this group of females with suicidal and self-mutilation tendency were: being a victim of a violent act, economic crisis, parent with poor parenting skills, major change in eating habits, infidelity, and loss of a job. **Conclusions:** The findings support that the onset of BPD in women occurs during early and middle childhood and likewise support that the interaction among psychological, biological, and environmental factors produce the BPD personality in women. This finding differs from the Diagnostic and Statistical Manual, which states that BPD begins in early adulthood when BPD patients struggle to face life responsibilities and cope with stressors [2,3]. **Clinical Relevance:** The identification of transactions among the interacting risk factors helps to explain the cause, development, and treatment of this disorder in young Puerto Rican women.

**Keywords:** Biosocial model for BPD; Borderline Personality Disorder (BPD); Commonwealth of Puerto Rico; Exacerbation of BPD features

## Introduction

According to the Behavioral Sciences Institute of the University of Puerto Rico [4], an estimate of 165,497 adults (7.3%) 18 to 64 years old meet the criteria for Serious Mental Illness (SMI). Women have slightly higher prevalence rates (4.2%) than men (3.1%). In the rate of psychiatric disorders, the 12-month prevalence is 23.7%. The study asserts that anxiety disorders are the most common, affecting 12.5% of the adults 18 to 64 years old, and mood disorders are the second most common affecting 10.4% of the population 18 to 64 years old. A total of 10.5% of women in Puerto Rico met the diagnostic criteria for a psychiatric disorder, compared to 8.2% of the men. A need assessment study conducted by the Institute, asserts that women are also more likely to be diagnosed with depression, dysthymia, and general anxiety than men. Overall, the literature asserts that emotion dysregulation is a very broad concept.

According to Crowell, Beauchaine, and Linehan the transaction between biological and psychosocial variables across the development are critical contributing factors for the development of BPD [1]. Based on the developmental psychopathology perspective, Linehan's theory describes transactions as the interaction between vulnerability and learning history to shape and maintain dysregulated emotional, behavioral, interpersonal, and cognitive aspects of "self" that create the "borderline" personality [1]. Moreover, they assert that the reactions to emotional situations produced by these transactions result in increased risk for adverse outcomes or longer lasting traits that repeated over time contribute to the emergence of BPD.

Borderline Personality Disorder (BPD) is the most prevalent personality disorder. It occurs in 2-3% of the population [5]. The Diagnostic and Statistical Manual of Mental Disorders defines it as a "pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity that begins by early adulthood and is present in a variety of contexts" [2]. It states that patients with BPD have identity problems, unstable relationships, lack of impulse control, emotional instability and feelings of emptiness, often in combination with anxiety, depression, and substance abuse. There is limited information as to why this phenomenon occurs.

The diagnosis of BPD is known for its risk of suicide and self-harm, affective instability, and patterns of idealization. Up to 10% of individuals diagnosed with BPD commit suicide with more than 70% of BPD patients having histories of suicide attempts [6]. Individuals with BPD commonly exhibit impulsive aggression, which leads to self-mutilation, unstable relationships, violence, and suicide [5].

In the social domain, BPD patients are vulnerable to stress and have low levels of social functioning. Individuals with BPD display emotional dysregulation usually characterized by strong negative emotional reactivity. Such emotional reactions include high levels of anger, rage and shame [7]. They exhibit decreased functioning in work, school, friendships, and romance; often experiencing conflict within close relationships and showing conflict, hostility, disagreement, and ambivalence within these relationships [8].

After an extensive search in multiple data bases, PubMed, EBSCOhost, and CINAHL, the researcher could only find statistics from the Administration of Mental Health and Addiction Prevention Services. No qualitative or quantitative studies were found that were conducted in Puerto Rico with the Puerto Rican population. The acquisition of this knowledge will contribute to the development of new programs in the nursing field directed specifically towards the prevention of the development of this disorder. These programs will be developed using Healthy People 2020 [9], a framework of reference to guide health promotion activities that will focus on eliminating health disparities and increasing quality and years of healthy life. People, including children and adolescents, with untreated mental health disorders are at high risk for many unhealthy and unsafe behaviors such as alcohol or drug abuse, violent or self-destructive behavior, and suicide- the 11<sup>th</sup> leading cause of death in the United States for all age groups and the second leading cause of death among people aged 25 to 34 [9]. It was critical to study the social factors that exacerbate features of BPD in women between the ages of 25 to 35 in order to develop programs that will integrate therapies based on the needs of this population.

An understanding of the few social relations that these individuals have, and the negative emotions surrounding them, help shed light on the chronic state of misery that many patients with BPD experience. BPD is a difficult diagnosis to understand because of its overlap with all other personality disorders such as, eating disorders and comorbidity with depression, anxiety, post-traumatic stress disorder, and substance abuse [10].

Crowell, Beauchaine & Linehan's Biosocial Model for BPD explains the emergence of psychiatric conditions during adolescence and the continuity throughout adult development [11]. According to this approach, the interaction among psychological, biological, and environmental risk factors contribute to the development of personality disorders.

This research was guided by the following questions:

1. What social factors exacerbate features of Borderline Personality Disorder in the female population?
2. Did participants experience any form of childhood trauma, such as: family violence, neglect, disease, verbal assaults, rejection, and emotional or physical abuse?

3. What are the social factors that contribute to suicidal tendency among the female BPD population?

### **Variables**

Dependent variable - Exacerbation of Borderline Personality features.

Independent Variable - Social factors.

### **Nominal definitions**

1. Risk factors: analyze emotional pain, insecure forms of attachment, and relationship anxiety as factors that influence on the exacerbation of features of Borderline Personality Disorder.
2. Incidence and prevalence: To understand the incidence and prevalence of these social factors in the Puerto Rican women living in the Commonwealth of Puerto Rico.

### **BPD in Women**

Women are considered to have the highest risk for developing borderline personality disorder. 75-80% of the population diagnosed with BPD are women [5], and up to 80% experience emotional pain as an adaptive response to repetitive traumatic experiences during childhood [12]. In addition, young women with BPD have a suicide rate of 800 times greater than the general public [6].

Data suggest that BPD affects from 1.2% to almost 6% of the general population. Moreover, up to 10% of those who meet criteria for BPD eventually commit suicide, this rate is 50 times that observed in the broader population [13]. Thus, BPD is associated with tremendous emotional and financial burden to individuals, families, and society. In light of these costs, identifying precursors to the disorder and the factors that exacerbate BPD traits in specific populations is critical.

When compared with men, women often show higher self-stigma resulting from intense labeling of mental illness, worse emotional and social role, higher levels of obsessive compulsiveness, more negative views of themselves, higher levels of negative affectivity, frequent interpersonal difficulties, social problems related to difficulties regulating emotions, and higher levels of shame [14-17].

### **Social Factors that Exacerbate BPD in Young Adults and Women**

It is critical to understand the biological, social, and psychosocial precursors of BPD in childhood and mid-adolescence. Traits and maladaptive coping strategies develop during this stage, thus exacerbating the development of BPD in early adulthood [1]. During childhood and adolescence, exposure to adversities is predictive of psychiatric disorders, however; BPD and Mood Disorders are more associated with early life stress [1]. Likewise,

early adulthood is a benchmark point for the development of major social roles and when vocational, interpersonal, religious, political, and sexual choices become critical. Thus, the evolution of an adult life structure can be a great source of stress [3,18]. Evidence shows that patients with BPD are extremely vulnerable to stress and loss. Consequently, benchmark stressors can become unbearable and distorted for BPD patients. Sufferers from BPD respond chaotically to situations which are common among people their age. Women with BPD tend to inhibit negative affect and feelings associated with loss or grief. Consequently, intense painful feelings and the notion that life is not worth living potentiate a pattern of self-mutilation and suicide attempts in women with BPD [19].

### **Incidence of BPD in the Hispanic Population**

Social, cultural, and spiritual factors have a great impact on perceptions of symptoms, participation in psychiatric treatment, treatment outcomes, and protective factors. Researchers studying the importance of sociocultural factors stress their significance for mental health care [5,20,21]. Although ethnicity is a cultural characteristic, there may be differences among members of the same ethnic group. Zsembik & Fennell describe health patterns among Hispanics and state that there are different health advantages, health patterns, and disparities among Cubans, Dominicans, Mexicans, and Puerto Ricans [22]. Findings in studies related to BPD in monolingual Hispanic patients in the United States are similar to findings in other cultural contexts. According to Grilo, et al. affective instability was the most frequently occurring of the BPD symptoms among Hispanics [21].

### **Incidence of BPD in Puerto Rican Women**

The Commonwealth of Puerto Rico is facing its worse financial crisis, which affects all aspects of the life of its citizens. Fears of uncertainty are common among local citizens. In response, many Puerto Ricans have migrated to the United States, mainly to Florida. The Census Bureau Report showed that Puerto Rico's population fell 1.7% in the year ending in June, an acceleration from the 1.6% decline for the year before that one [23]. The island population has decreased steadily by more than 1.1% for five straight years. In 2014, 84,000 people migrated to the United States, and about 20,000 returned, creating a migratory balance of -64,000 [24]. Social and economic inequalities are considered the cause of many of the crises that the Puerto Rican population is facing. Toro reports that a factor affecting the social and economic inequality in the Commonwealth of Puerto Rico can be the little social mobility, although this can be difficult to document [25]. Moreover, he states that long-standing difficulties in the formulation of a societal consensus around a given political direction may have an association with inequality in Puerto Rico.

It is evident that the crisis faced by the government of the Commonwealth of Puerto Rico has taken its toll on the healthcare

system. In 2005, Puerto Ricans living in the United States and the Commonwealth of Puerto Rico were described as experiencing more health disparities than mainland youth and other Hispanics [22]. Currently, the situation has not changed regarding Puerto Ricans living in the Commonwealth of Puerto Rico. Ramos, et al. point out that social determinants of health must be considered a priority for the reduction of health disparities in the Commonwealth of Puerto Rico [26]. They state that there is a lack of awareness about social determinants of health such as poverty, stigma, social support, and social class among Puerto Rican health professionals in the Commonwealth of Puerto Rico.

However, this awareness is critical since social inequalities, health disparities, and the uncertainty created by the fiscal crisis are key factors that may be affecting the mental health of the Puerto Rican population. Moreover, in the year 2015, only 10% of government budget was used in mental health services, and 15% went to the state psychiatric hospital [24]. About 50% of psychiatric patients were living in the municipality of San Juan, the island capital and 52% of patients in mental health programs were women [24,27].

Although specific studies on BPD in Puerto Rican women were not available, research about suicidal attempts may shed some light about precipitants for extreme emotional behaviors in the Puerto Rican population living in the Commonwealth of Puerto Rico. Since the inability to deal with stressors make BPD patients prone to self-damage and suicide, research about suicidal attempts in Puerto Ricans living in the Commonwealth of Puerto Rico may be helpful to identifying social factors that exacerbate catastrophic behavior. Given the lack of studies about BPD in the Puerto Rican population and specifically on Puerto Rican women living in the Commonwealth of Puerto Rico, it is imperative to conduct research focusing on the association of sociocultural factors with the development of the disorder.

### **The Biosocial Model of Personality Disorder**

The Biosocial Model of Borderline Personality Disorder was developed by Marsha Linehan to explain the causes of this disorder and develop an adequate treatment. In conjunction with Crowell and Beauchaine [1], she proposed the formulation of interventions to specifically address the need to treat at-risk children. Crowell, Beauchaine and Linehan propose a biosocial developmental model of BPD that explains the development of this PD as a transaction between biological and psychosocial factors.

Moreover, Crowell, et al. describe emotion dysregulation as an emotion linked cognitive process that presents facial and muscle reactions, action urges, and emotion-linked actions [1]. According to Crowell, Beauchaine, and Linehan, the transaction between biological and psychosocial variables across the development are critical contributing factors for the development of BPD. Based on

the developmental psychopathology perspective, Linehan's theory describes transactions as the interaction between vulnerability and learning history to shape and maintain dysregulated emotional, behavioral, interpersonal, and cognitive aspects of "self" that create the "borderline" personality [1]. They view BPD as an outcome of multiple interacting risk factors, causal events, and dynamic processes involving genetic, neural, behavioral, familial, and social factors.

Heritable impulsivity is mentioned as a principal vulnerability for BPD by different researchers [1,28-34]. Researchers propose that heritable traits affect the functioning of early maturing brain regions, thus triggering impulsivity, which may affect neurodevelopment of later maturing brain regions responsible for executive operation and planning.

### **Dialectical Behavior Therapy**

Dialectical Behavior Therapy (DBT) is a treatment developed by Marsha Linehan for borderline personality disorder based on the Biosocial Model of BPD. DBT is described as an elaborate effective treatment [35]. It is a type of cognitive behavioral therapy; therefore, the primary goal is to teach the patient the necessary skills to cope with stress, regulate emotions, improve relationships with others, and deter self-invalidation and extreme rigid thinking.

### **Materials and Methods**

The study design was a medical record review using an investigator-developed chart review tool. This technique was used to count and rank the social factors that exacerbates BPD in the sample. Hospital medical records provided a rich data source for description of BPD female patients and social factors that exacerbate features of the disorder.

The sample consisted of 50 medical records of patients meeting the following inclusion criteria: 1) female, 2) hospital admission with a diagnosis of BPD, 3) age 25 to 35 at time of hospital entry, 4) BPD diagnosis prior or on the date of hospital admission, 5) BPD diagnosis included either the administration of McLean Screening Instrument for BPD (MSI-BPD) or the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), 6) the client chart is available, and 7) the client chart includes a signed data release form.

The investigator developed a Chart Review sheet (CR) as the tool to extract pertinent data from the medical records. The medical record consisted of clinician notes, including ambulatory and emergency room reports, laboratory and diagnostic testing reports, admission and discharge documentation, and additional pertinent client documentation. The CR tool consists of 31 social factors known to exacerbate BPD in various groups of patients. These factors were obtained from the BPD profiles developed by the experts Gunderson [28], and Linehan [36]. Items were scored as

“1” for present and “0” if either absent, or not applicable. The tool also includes pertinent client demographic information and has a place for narrative assessment remarks. The type of narrative data annotated by the researcher during the assessment was anything she believed pertinent/noteworthy to establish some deviation or pattern different from what is known in the general population. This instrument had no client identifiers and was coded by number.

To assure confidentiality and privacy of participants, client names were not included on the data collection tool and numerical identifiers were assigned to the medical record. Standards in participant protection were maintained through the following measures: information collected is confidential and applied only to the specified research purposes, hospital records were kept in the designated hospital location, and participant identifiers are not linked to collected data. The study was reviewed and approved by the University of Massachusetts Institutional Review Board and the appropriate hospital administrators prior to the start of the study.

As anticipated, the reviews took from 2 to 4 hours per chart. Fifty records were evaluated. These were about 10% of the BPD population receiving treatment in the institution under study.

The reliability and validity of the CR tool was established prior to it being used in the study. The content validity of the checklist was established by incorporating items that had been identified in earlier studies as being associated with exacerbations of BPD in other patient populations. Descriptive statistics were used to describe the basic features of the data in the study. They provided simple summaries about the sample and the measures. It was used the frequency distribution was used to list the factors, followed by the use of the percentages to determine the trends of the main variable of the study and how this manifested itself in the selected sample.

**Results**

Percent agreement among raters was used to establish the reliability of the Chart Review sheet (CR) developed by the researcher to extract pertinent information. The tool was assessed by three reviewers in the pilot phase to measure reliability prior to the start of the study. Each rater reviewed 5 charts using the Chart Review sheet (CR). Each judge reviewed the same 5 medical charts under the supervision of the researcher. Since the study is about a mental health condition, the expected agreement of judges was determined to be of 90% or more in order to be considered valid. Table 1 shows the researcher’s guidelines to align the findings according to Polit & Beck’s formula [37].

% Value	Interpretation
90% and up	Excellent
80-89%	Good
70-79%	Adequate
below 70%	May have limited applicability

**Reference:** U.S. Department of Labor Employment and Training Administration [38].

**Table 1:** General guidelines for percent value of agreement.

The TIR if all agree is 1 (100%), and if all disagree is 0 (0%). The results are shown on Table 2.

No. record	Judge 1	Judge 2	Agreement
1	31*	31	1
2	30	20	0
3	31	31	1
4	31	31	1
5	31	31	1
6	31	31	1
7	31	31	1
8	31	31	1
9	31	31	1
10	31	31	1
			<b>9/10= 90%</b>

\*: social factors listed of tool review

**Table 2:** Percent agreement.

The results show a percent agreement of 90%, which is considered acceptable.

**Sociodemographic Profile**

The age of the patients ranged from 25 to 35 years, with a mean age of 29. Their age of onset of the BPD ranged between 8 and 20 years with a mean of 14 years. Forty-four percent of the females were diagnosed before age of 13. Sociodemographic data was unavailable for one patient (Table 3).

Age of onset of condition	Frequency Σ f	Percentage %
12 years or less	22	44
13 to 16 years	16	32
17 to 20 years	11	22
Data not on record	1	2
Total	50	100

**Table 3:** Distribution of BPD female patients by age of onset of the BPD condition.

All five regions of Puerto Rico were represented in the sample, as displayed in Table 4. Thirty-four percent of patients lived in municipalities designated as a metropolitan region. Twelve women lived in the Eastern region of Puerto Rico (24%), eleven in the North (22%), 8% in the West (n=4), and 6% in the South region (n=3). The records of three female patients (6%) indicated they lived at foster homes certified by the Department of Family. In two of these three cases the patients had been placed in more than 30 homes.

Region	Frequency Σ f	Percentage %
Metro	17	34
East	12	24
North	11	22
West	4	8
South	3	6
Department of Family	3	6
Total	50	100

**Note:** Appendix B provides details of the distribution by municipalities of the Commonwealth of Puerto Rico.

**Table 4:** Distribution of BPD female patients by region of place lived most of life.

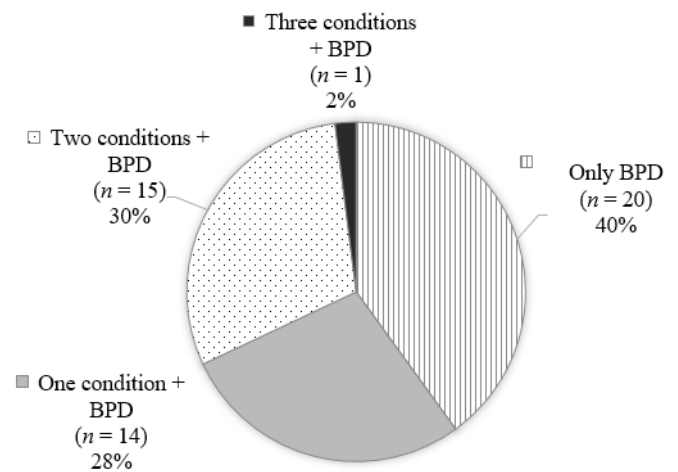
With respect to level of education, 44% of the women (n=22) completed Grades 10 through 12, which corresponds to the high school level. Three patients (6%) completed an elementary-middle school grade and three others (6%) attended college for two or three years. Data on educational attainment was not available for 22 cases (44%), as presented in Table 5.

Level of education	Frequency Σ f	Percentage %
6 <sup>th</sup>	1	2
8 <sup>th</sup>	2	4
10 <sup>th</sup>	1	2
11 <sup>th</sup>	5	10
12 <sup>th</sup>	16	32
2 or 3 years of college	3	6
Data not on record	22	44
Total	50	100

**Table 5:** Distribution of BPD female patients by highest level of education achieved.

**BPD females' medical and mental conditions**

Patients in the study had a variety of additional medical and mental health conditions. Most of the patients had BPD and one (28%) or two (30%) additional conditions. One patient (2%) had three conditions in addition to BPD. In 20 of the 50 cases (40%) the only diagnosis noted was BPD. Figure 1 presents the distribution by number of medical and/or mental conditions.



**Figure 1:** Distribution of BPD female patients by number of medical and mental conditions.

In addition to BPD, many patients had other medical or mental health disorders. Approximately one-third of the sample (n=17.34%) was diagnosed with both BPD and bipolar disorder. Seven females (14%) had a diagnosis of BPD and schizoaffective

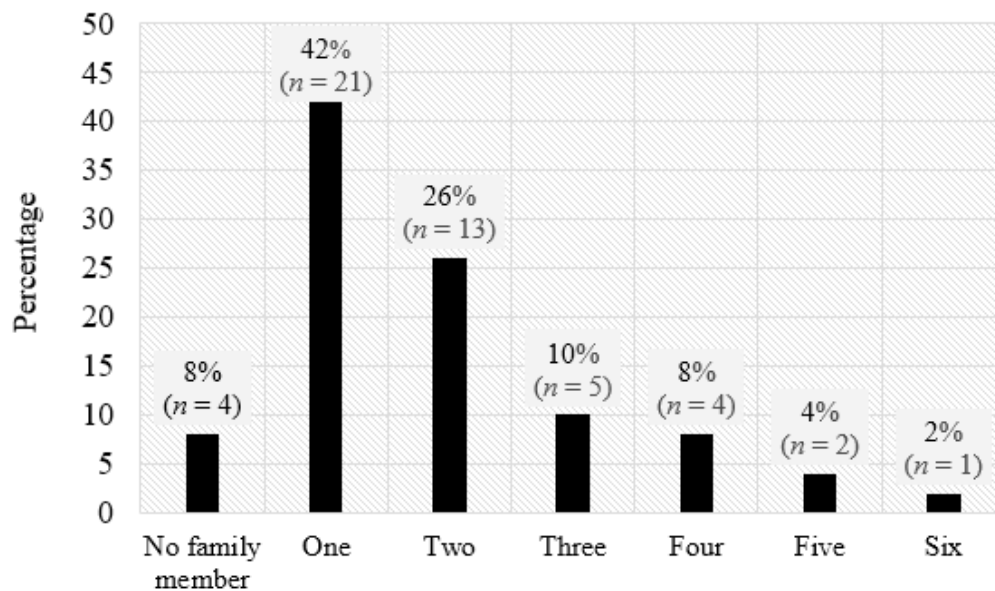
disorder. The patient with the greatest number of additional conditions had both intellectual disability and schizoaffective disorder and was HIV positive. Four more cases of HIV+ were reported in the sample. Table 6 includes the complete list of medical and mental conditions of BPD females in the study.

Condition	Frequency	Percentage
	$\Sigma f$	%
Bipolar disorder	17	34
Schizoaffective disorder	7	14
Human immunodeficiency virus (HIV+)	5	10
Antisocial behavior	4	8
Intermittent explosive disorder	4	8
Major depression	3	6
Intellectual disability	2	4
Psychosis	2	4
Hypothyroidism	2	4
Attention-Deficit/Hyperactivity disorder (ADHD)	1	2

**Table 6:** Distribution of BPD female patients by their medical and mental conditions.

**Family History of Mental Illness**

One of the variables explored in the study was the family history of mental illness. As seen in Figure 2, many patients had one (42%) or two (26%) family members with mental health conditions. In one case (2%) six family members had a mental illness. In four cases (8%) there were no family members with a mental disorder or condition.



**Figure 2:** Distribution of BPD female patients by number of family members with mental illness.

In many cases, a close family member had a mental illness, such as their mother (n=36.72%) or father (n=20.40%). Data presented in Table 7, also reflects that a higher proportion of female figures of the immediate and extended family of the BPD sample were diagnosed with mental health conditions. In addition to mothers, results revealed a history of mental illness of grandmothers (24%), sisters (24%) and aunts (8%). Family member mental health disorders included depression, schizophrenia, bipolarity, antisocial personality, and addictive behaviors.

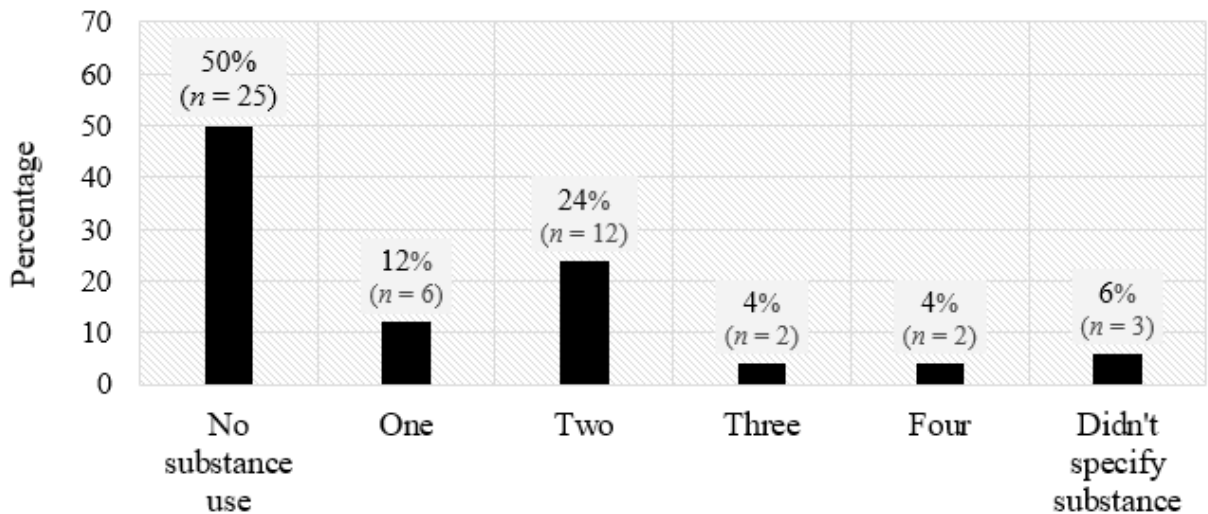
Family member	Frequency	Percentage
Mother	36	72
Father	20	40
Grandmother(s)	12	24
Sister(s)	12	24
Brother(s)	7	14
Aunt	4	8
Grandfather(s)	2	4

**Note:** Percentages were calculated by dividing each frequency by the number of sampled cases (50).

**Table 7:** Distribution of BPD female patients by family members with mental illness.

**Alcohol or Drug Use**

Substance use disorders in female patients with BPD was an additional variable examined in the study. Twenty-five cases of the sampled group of females with BPD (50%) were engaged in alcohol or drug use. The summary data of the number of substances used by these patients are displayed in Figure 3. Six cases (12%) reported the use of one substance, while 16 patients (32%) reported using two or more substances. Three females used drugs, but information of the specific substances consumed by them was not available.



**Figure 3:** Distribution of BPD female patients by number of substances used.

In terms of the specific drugs used, Table 8 contains frequencies and percentages of responses collected. The common substance of abuse in the sample was cocaine (n=14.28%). Notable percentages of BPD females were alcohol (18%), crack (18%) or cannabis (16%) consumers. If percentages are calculated based on the 25 cases reporting alcohol or drug use, the results are: cocaine 56%, alcohol 36%, crack 36%, and cannabis 32%. Cocaine and cannabis consumption with alcohol or crack was the combination of abuse of BPD females



that ingested three or four drugs. The substances least consumed by BPD females in the sample were: benzodiazepines (n=2) and heroin (n=1).

Substance	Frequency	Percentage
Cocaine	14	28
Alcohol	9	18
Crack	9	18
Cannabis	8	16
Benzodiazepines	2	4
Heroin	1	2

**Note:** Percentages were calculated by dividing each frequency by the number of sampled cases (50).

**Table 8:** Distribution of BPD female patients by substance used.

Three research questions were posed in this study.

**Research Question 1**

What social factors exacerbate features of Borderline Personality Disorder in the female population?

The social factors identified with the exacerbation of BPD included alcohol or drug use (n=25.50%); been a victim of a violent act (n=24.48%); and economic crisis (n=20.40%). Additional social factors included parents with poor parenting skills (n=17.34%) and girlfriend or boyfriend problems (n=14.28%). Approximately one-fourth of the sample identified major change in eating (n=13.26%) and sleeping (n=12.24%) habits. Infidelity and loss of a job were reported in 11 cases (22%) (Table 9).

Social factors	Frequency		Percentage	
	Present	Absent	Present	Absent
Alcohol or drug use	25	25	50	50
Been a victim of a violent act	24	26	48	52
Economic crisis	20	30	40	60
Parents with poor parenting skills	17	33	34	66
Girlfriend or boyfriend problems	14	36	28	72
Major change in eating habits	13	37	26	74
Major change in sleeping habits	12	38	24	76
Infidelity	11	39	22	78
Loss of a job	11	39	22	78

**Table 9:** Social factors that exacerbate features of Borderline Personality Disorder more present in BPD female patients.

Social factors with the lowest percentages included: lived through a lot of arguments or repeated breakups (n=7), loss or damage of property (n=6) and lived in an area of high violence (n=6). Two additional factors were mentioned by five cases each. These were: been accused of a violent act (10%), and legal troubles resulting in arrest or jail (10%). Other violence risk factors were alluded in the medical records, in particular: lived with sibling violence (n=2.4%); and violence in school or bullied (n=2.4%) (Table 10).

Social factors	Frequency		Percentage	
	Present	Absent	Present	Absent
Lived through a lot of arguments or repeated breakups	7	43	14	86
Loss or damage of property	6	44	12	88
Lived in an area of high violence	6	44	12	88
Miscarriage or abortion	5	45	10	90
Been accused of a violent act	5	45	10	90
Legal troubles resulting in arrest or jail	5	45	10	90

Parents used drugs or alcohol	4	46	8	92
Death of parent	3	47	6	94
Separation or divorce of parents due to conflict	2	48	4	96
Lived with sibling violence	2	48	4	96
Violence in school or bullied	2	48	4	96
A loved one committed suicide	2	48	4	96
Major personal illness or injury	1	49	2	98
Pregnancy	1	49	2	98
Change residence within the same town or city	1	49	2	98
Death of a child	1	49	2	98
Change in religion beliefs	1	49	2	98
Abandonment of either parent or significance care giver	1	49	2	98
Other factors:				
Mother took away children by court	1	49	2	98
Stress due to university	1	49	2	98

**Table 10:** Social factors that exacerbate features of Borderline Personality Disorder least present in BPD female patients.

Factors associated with parental relations or actions included: parents used drugs or alcohol (n=4.8%); death of parents (n=3.6%); separation or divorce of parents, due to conflict (n=2.4%); and abandonment of either parent or significant care giver (n=1.2%). Other factors included in this list were associated with: miscarriage or abortion (n=5.10%); pregnancy (n=1.2%); and death of a child (n=1.2%). One case expressed that a social factor that exacerbate its BPD condition was change in religious beliefs. She changed from being catholic to a non-believer (atheism). Another case mentioned the change in residence within the same town or city. Two social factors not included in the chart but registered in the medical records were: mother took away children by court (n=1.2%); and stress due to university (n=1.2%).

In no cases were a major change in usual type and/or amount of recreation, loss of family member, lost a pet and witness of

violence to either parent identified as factors that exacerbated BPD.

### Research Question 2

Did participants experience any form of childhood trauma, such as: family violence, neglect, disease, verbal assaults, rejection, and emotional or physical abuse?

A large number of patients had experienced a sexual abuse trauma (n=21.42%). Specifically, they were raped or sexually abused by: their stepfather (n=7.14%); father (n=6.12%); uncle (n=3.6%); grandfather (n=1.2%); brother (n=1.2%) or an unknown person (n=1.2%). Two cases were sexually molested by a sister (4%). Emotional or physical abuse were described as traumas and BPD triggers of nine cases (18%). The sum of these percentages revealed that 60% of the sample had experienced childhood abuse (sexual, emotional or physical).

Six females (12%) suffered feelings of grief or separation due to death of a family member (grandparent, father, brother or aborted baby), change of residence or children placed in the custody of the Department of Family. Other family related traumas reported were: parents' divorce (n=5.10%); a family member mental disease (n=3.6%); family violence (n=2.4%); and rejection facing being abandoned by the mother (n=1.2%). In two cases the BPD trigger was identified as drug use (4%). The information regarding childhood trauma was not available for one patient (Table 11).

Form of trauma	Frequency	Percentage
Sexual abuse	21	42
Emotional or physical abuse	9	18
Feelings of grief or separation	6	12
Trauma of divorce	5	10
Family mental disease	3	6
Family violence	2	4
Drug consumption	2	4
Rejection	1	2
Data not on record	1	2
Total	50	100

**Note:** Appendix C provides details of the distribution by childhood-adolescence experience and form of trauma.

**Table 11:** Childhood and adolescence traumas experienced by BPD female patients.

### Research Question 3

What are the social factors that contribute to suicidal tendency among the female BPD population?

A total of nine of the 50 cases (18%) were associated with suicide attempts (n=5) and self-mutilation (n=4). More than one-third of the nine cases with suicidal and self-injurious tendencies had one or a combination of the following social factors: been a victim of a violent act (44%), economic crisis (44%), parents with poor parenting skills (44%), major change in eating habits (33%), infidelity (33%), and loss of a job (33%) (Table 12).

Social factors	Suicide attempts		Self-mutilation		Total	
	f	%	f	%	f	%
Been a victim of a violent act	1	20	3	75	4	44
Economic crisis	3	60	1	25	4	44
Parents with poor parenting skills	0	0	4	100	4	44
Major change in eating habits	2	40	1	25	3	33

Infidelity	2	40	1	25	3	33
Loss of a job	2	40	1	25	3	33
Major change in sleeping habits	2	40	0	0	2	22
Alcohol or drug use	0	0	2	50	2	22
Loss or damage of property	2	40	0	0	2	22
Major personal illness or injury	1	20	0	0	1	11
Separation or divorce of parents due to conflict	1	20	0	0	1	11
Death of parent	1	20	0	0	1	11
Change in religious beliefs	1	20	0	0	1	11
Been accused of a violent act	0	0	1	25	1	11
Legal troubles resulting in arrest or jail	0	0	1	25	1	11
Lived in an area of high violence	0	0	1	25	1	11
Violence in school or bullied	1	20	0	0	1	11
Parents used drugs or alcohol	0	0	1	25	1	11
Mother took away children by court	1	20	0	0	1	11

**Table 12:** Social factors that exacerbate features of BPD among female patients with suicidal and self-mutilation tendency.

In the five cases of BPD females who attempted suicide, the social factor with the highest percentage was economic crisis (n=4.60%). Other factors pointed out by this group with suicidal tendency were: major change in eating habits, infidelity, loss of a job, major change in sleeping habits and loss or damage of property. Each of these factors grouped 40% of cases. Otherwise, the social factors with the highest percentages in the group of four females with self-mutilation behavior were: parents with poor parenting skills (100%), been a victim of a violent act (75%), and alcohol or drug use (50%).

Childhood and adolescence trauma experienced by the nine BPD females with suicidal and self-injurious tendency was also examined to address this last research question. The summary data presented in Table 13 revealed that six of these females (66%) faced rape or sexual abuse by their stepfather. In the case of the five females who attempted suicide, three experienced sexual abuse by stepfather, one was bullied at school and another suffered the loss of her grandparents in an accident. In contrast, the reports of the four females that exhibit self-mutilating behavior indicates that three of them were raped by stepfather and one faced physical abuse from mother. In summary, females with suicidal or self-mutilation tendency experienced childhood abuse in the form of sexual, emotional or physical mistreatment.

Form of trauma	Suicide attempts		Self-mutilation		Total	
	f	%	f	%	f	%
<b>Sexual abuse</b>						
Raped by stepfather	1	20	3	75	4	44
Sexual abuse by stepfather	2	40	0	0	2	22
<b>Emotional or physical abuse</b>						
Physical abuse from mother	0	0	1	25	1	11
Bullied at school	1	20	0	0	1	11
<b>Feelings of grief or separation</b>						
Loss of grandparents in an accident	1	20	0	0	1	11

**Table 13:** Childhood and adolescence traumas experienced by female patients with suicidal and self-mutilation tendency.

This study aimed to identify the social factors associated with an exacerbation of BPD in young adult women living in the Commonwealth of Puerto Rico. The main social factors that exacerbated BPD in the sample, as examined by Research Question 1, were: alcohol or drug use (50%), been a victim of a violent act (48%), and economic crisis (40%). Parents with poor parenting skills, girlfriend or boyfriend problems, major change in eating or sleeping, infidelity and loss of a job were also associated with the exacerbation of BPD condition in young women. In no cases, a major change in usual type and/or amount of recreation, loss of family member, lost a pet or witness of violence to either parent were identified as factors that exacerbated BPD.

In relation to Research Question 2, the results show that participants experienced childhood trauma in diverse forms. Most of the patients (42%) experienced a sexual abuse trauma, characterized by being raped or sexually abused by their stepfather, father, uncle, grandfather, brother or an unknown person Emotional or physical abuse (18%) was also reported as childhood trauma and BPD triggers. In sum, 60% of the sample had experienced childhood abuse (sexual, emotional or physical). Other traumas reported were: feelings of grief or separation (12%), trauma of divorce (10%), family mental disease (6%), family violence (4%), drug consumption (4%), and rejection due to been abandon by the mother (2%).

Finally, in relation to Research Question 3, nine of the 50 cases (18%) were associated with suicide attempts (n=5) and self-mutilation (n=4). The social factors that contribute to suicidal tendency among this group of BPD were: been a victim of a violent act (44%), economic crisis (44%), parents with poor parenting skills (44%), major change in eating habits (33%), infidelity (33%), and loss of a job (33%). The social factor with the highest percentage in the group that attempted suicide was economic crisis (60%), followed by: major change in eating habits, infidelity, loss of a job, major change in sleeping habits and loss or damage of property. This group experienced childhood trauma in the form of sexual abuse by stepfather (n=3), bullied at school (n=1) and loss of grandparents in an accident (n=1). Analysis revealed that the social factors with the highest percentages in the group with self-mutilation behavior were: parents with poor parenting skills (100%), been a victim of a violent act (75%), and alcohol or drug use (50%). The childhood trauma experienced by the group with self-mutilating behavior were: sexual abuse in the form of been raped by stepfather (n=3) and physical abuse from mother (n=1). Sexual, emotional and physical abuse characterized childhood trauma of females with suicidal or self-mutilation tendency.

## Discussion

The age of onset of the BPD disorder in the sample of 50 young adult women ranged between 8 and 20 years, with a mean

age of 14. This finding differs from the Diagnostic and Statistical Manual [2], which states that BPD begins in early adulthood when BPD patients struggle to face life responsibilities and cope with stressors [3,18]. In this study it was found that the highest percentage of females with BPD lived most of their life in the San Juan metropolitan region. This result is similar to data stating that about 50% of psychiatric patients were living in the municipality of San Juan, the island capital, and 52% of patients in mental health programs were women [24,27]. The sociodemographic profile of the women was characterized by a high school grade as their level of education and they had one or two additional mental health disorders. Bipolarity and schizoaffective disorder were the conditions more reported. This finding is consistent with Grilo et al. statement that affective instability was the most frequently occurring of the BPD symptoms among Hispanics [21].

Based on the results of the present study, the following conclusions were drawn:

- Early and middle childhood was detected as the onset stage of BPD in young adult women living in the Commonwealth of Puerto Rico.
- The San Juan metropolitan region was the highest incidence of BPD in the sample of female patients included in the study.
- The combination of BPD with substance use disorders was common in female patients with BPD.
- The identification of female family members with mental illness history was common in the BPD female patients in the study.
- The social factors with highest ranking exacerbating BPD features were: alcohol or drug use, being a victim of a violent act and economic crisis.
- Diverse forms of childhood trauma and BPD triggers were identified. Sexual and emotional or physical abuses, in that order, were the most traumatic experiences of BPD females.
- BPD females' childhood trauma was also associated with unstable relationships, family violence or separation, abandonment fears due to loss of significant family or rejection.
- Suicidal attempts and self-injurious acts were not the most prominent behaviors identified or recorded on medical records of the BPD female patients.
- Differences were detected when considering social factors that exacerbate BPD in females that reported suicide attempts and those with self-mutilation behavior. Economic crisis was the factor most mentioned by females that experienced suicidal attempts, although all females with self-mutilation behavior argued parents with poor parenting skills.
- Sexual, emotional and physical abuse emerged again as the main childhood trauma of BPD females when identified as patients that presented suicidal or self-mutilation tendency.

### **Limitations of the Study**

The chart review tool was originally constructed on the basis of literature related to social factors that exacerbate BPD disorder and factors that contribute to this group of females' suicidal and self-mutilating behavior. A more specific identification of possible elements or alternatives regarding alcohol or drug abuse, family history of mental illness and other variables examined will have made the collection of data easier and more precise. Some medical records exhibited lack of information, such as a clear description of family mental disorders. Therefore, important and relevant data could have been unavailable for examination under the study.

A limitation related to the sample is that since it consists only of women, there is no criteria for comparing the results of the study with social factors that exacerbate traits in young Puerto Rican men. If this information were available, differences between young male and female Puerto Rican BPD patients could be compared. The size of the sample was another limitation since it was a quota sampling of 50 women.

### **Implications**

One of the main implications of this study is that it was able to demonstrate that biological and environmental factors contribute to the development or exacerbation of BPD disorder in young Puerto Rican women. These results support Crowell, Beauchaine & Linehan's Biosocial Model for BPD.

Given the scarcity of research in relation to BPD in Puerto Ricans residing in the Commonwealth of Puerto Rico, and since the literature asserts that women are at higher risk for the development of this disorder, this study shares new knowledge that is helpful for mental health professionals who work with young Puerto Rican women living in the Commonwealth of Puerto Rico as well as for health professionals working with children and adults. Moreover, the findings provide needed information to identify the risk factors for the development of the condition in young women, the identification of its precursors, and prevention strategies.

Similarly, it implies that the identification of early risk factors for the emergence and development of BPD in children is a chief priority because the transaction between biological and environmental risk factors create the borderline personality. As seen in this study, the onset age of BPD in the group of Puerto Rican women was from early to middle childhood in consonance with Crowell, Beauchaine & Linehan's Transactional Model of BPD.

Risk factors such as family dysfunction, poor quality of care, experiences of physical and or sexual abuse, childhood difficulties with separation, shame, guilt, unsecure family relationships, and coercive and invalidating family processes stated by Crowell, et al., Zonarini, et al., Sprague, et al., and Rüscher, et al. were present

in these women. Moreover, genetic vulnerabilities were present specifically in the notoriousness of female family members with mental illness history [1,12,15,39].

In relation to Nursing and mental health professionals, the study implies that specialized training regarding early detection of the factors that might be identified as precursors of BPD in children and teens as well as in specific treatment intervention is necessary. Furthermore, it implies the need for the development of new programs in the nursing field aimed at the prevention and treatment of this disorder [40].

The study suggests that the development of policy making about treatment and prevention of the condition is critical.

### **Recommendations for Mental Health Intervention**

- Develop preventive programs implementing Dialectical Behavior Therapy training and treatment centers.
- Relationships between the patient with BPD and the mental health professionals must be a learning experience in which the mental health professional teaches the patient the necessary skills to cope with stress, regulate emotions, improve relationships with others and put a stop to self- invalidation and extreme rigid thinking to overcome their emotional dysregulation and change their chaotic lifestyle.
- Develop public policy and health policy in relation to BPD patients, so that the condition can be accepted as primary diagnosis for hospitalization when BPD outbursts occur since medical insurance plans do not accept this disorder as a primary diagnosis for hospitalization.

### **Recommendations for Nursing Practice**

- Provide focused care and identify emotional trauma in order to provide and coordinate adequate patient care.
- Nurses in mental health must be trained on interventions specific to BPD in order to be empowered with the skills required to produce successful achievements in BPD treatment. Some topics of discussion are cognitive behavioral therapy, individual therapy, and group skills training.

### **Recommendations for Health Professional Education or Formation**

- Develop new programs focused on the prevention and treatment of BPD emphasizing early risk factors in children.
- Develop programs aimed at the early detection of self-injury and mood dysregulation in girls.
- Develop policy making about the treatment and prevention of BPD in young Puerto Rican women as well as studying exacerbation of BPD traits in men.

- A longitudinal BPD study in the Puerto Rican context must be conducted to determine which variables contribute to risk, resilience and the possibility or lessons of success on BPD treatment.
- More qualitative research could be developed to gather data in relation to lived experiences of Puerto Rican women with BPD and the strategies they use to prevent exacerbation.

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