

Associations between Diagnosis and Childhood Trauma across Psychiatric Outpatient Services in Ireland- an Analysis of Diagnosis and Associated Biopsychosocial Variables

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Abstract

It is known that a variety of bio-psycho-social factors are important in determining disease prevalence. In this paper we look at psychiatric diagnoses and how these are influenced by gender differences, geographical differences, urbanity and exposure to trauma, namely childhood physical and sexual abuse. Data was collected prospectively over a fifty two week period across 6 research sites in Ireland. Multiple diagnostic and psycho-social interview schedules were utilized for eligible patients. Statistical tests of association between diagnoses and biopsychosocial variables were conducted. A total of five hundred and forty participants were included in this study. Depression was the most common diagnosis in both sexes. Depression was significantly more common in females and alcohol dependence significantly more common in males. Depression, anxiety and schizophrenia were all more common in the North of Ireland with rates of bipolar affective disorder and alcohol dependence similar between the North and South. Depression and anxiety affected largely equal numbers in urban and rural areas but schizophrenia, bipolar affective disorder and alcohol dependence were more common in rural areas. 28% of the study population experienced child sexual abuse and 20% child physical abuse. Both forms of abuse were more common in females and in the North of Ireland. Urban areas revealed higher levels of childhood sexual abuse. Depression was the most common diagnosis in those with a history of sexual abuse and schizophrenia most common in those with a history of physical abuse. The differing rates of diagnoses between the North and South may reflect historical background differences. Our analysis reveals a high level of both childhood sexual and physical abuse in the study population. Both forms of abuse were more common in the North and this is associated with higher rates of schizophrenia. Our study supports trauma as a risk factor for depression and schizophrenia.

Keywords: Depression; Psychosis; Ireland; Childhood; Abuse; Urbanicity

Introduction

The prevalence of psychiatric disorders is influenced by a large number of biological, psychological and social factors. Of the various biological factors, gender differences are evident within certain psychiatric disorders. Depression is twice as common in women and alcohol dependence more than twice as common in men [1]. Rates of schizophrenia and bipolar affective disorder are similar between the sexes [1]. With regard to social factors, psychiatric disorders are correlated with urbanisation [2]. A recent meta-analysis investigating geographical differences for common psychiatric diagnoses found higher rates for mood and anxiety disorders in urban areas with no difference found for substance misuse [3]. Abuse in childhood has consistently been associated with negative consequences on psychological wellbeing. The association between childhood sexual abuse and psychosis has been a topic of interest in recent times. In fact, it is considered that the association between childhood sexual abuse and psychosis is large, and may be causal [4-7]. There have also been reports suggesting a link between childhood physical abuse and psychosis [5,6].

The INSURE (Ireland North South Urban Rural Epidemiological Collaborative Study of Suicidal Behaviour in Major Psychiatric Disorders) was an inclusive collaborative community research study

conducted in Ireland. A detailed description of this study has been previously documented [8,9]. The study was carried out over three years. Each site was selected as it offered access to major psychiatric facilities and a population affected by mental health conditions. This analysis relates to Phase One of the INSURE study. It seeks to investigate the association between common psychiatric diagnoses and gender, region (north vs. south), site (urban vs. rural), and abuse within the island of Ireland.

Method

All individuals newly referred to mental health outpatient clinics

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or re-referred (provided they had not been seen in the past year) were eligible for inclusion in the study. This included referrals to Adult Psychiatric Services, Addiction Services and Psychiatry of Old Age Services. All participants were over eighteen years of age. Data was gathered over a fifty two working week period from 9th May 2000 until 3rd July 2001.

Following clinical assessment by a mental health professional all subjects were referred to a trained researcher who then completed the assessment. Data collected included site identification and demographics and past psychiatric history. The study involved assessments along multiple diagnostic and psychosocial axes using various structured and semi structured interviews and self-report questionnaires [8,9]. Demographic details were ascertained via Modified Columbia Suicide Centre Demographics Form [10]. A clinical diagnosis of mental disorder (an Axis I Disorder) was obtained using the Structured Clinical Interview for Diagnostic Statistical Manual for Psychiatric Disorders [11]. The Hamilton Depression Rating Scale was used to assess objective depressive symptoms. Patients subjective perception of depression was assessed by self-report with the Beck Depression Inventory. For further information on the study tools, see "Analysis of Reasons for Living in an Irish Sample presenting to Mental Health Services"[12]. When assessing for a history of childhood sexual abuse and/or physical abuse, subjects were asked to rate abuse as either present or absent.

For the purposes of this study Belfast and Dublin were designated as "urban" areas. Omagh, Letterkenny, Ballinasloe, Portlaoise "rural". In 2001, Belfast had a population of 277391 with a population density of 2420 persons per square kilometre [13]. Dublin had a population of 985000 with a density of 2950. Omagh had a population of 47800, Ballinasloe 6572, Portlaoise 3281 and Letterkenny 7918[14].

Initially the data had to be manually counted, totalled and categorised. It was then transferred to SPSS (Statistical Package for the Social Sciences) database. Chi-squared tests were used to calculate the level of statistical significance that was set at 5%.

The Ethics Committee at Queen's University Belfast provided ethical approval. Written consent was obtained from participants with the opportunity to withdraw consent at any time.

Results

A total of five hundred and forty participants across the six research sites were included in Phase One of the study; two hundred and seventy one males and two hundred and sixty nine females. The breakdown of the various sites is presented in Table 1. The total of the study population in the North of Ireland was two hundred and four compared to three hundred and thirty six in the South. The urban population in the study was two hundred and thirty two with a rural population of

Site	Location	Urban/Rural	Region	Male	Female	Total
1	Portlaoise	Rural	South	43	46	89
2	Dublin	Urban	South	48	61	109
3	Donegal	Rural	South	38	51	89
4	Belfast	Urban	North	68	55	123
5	Ballinasloe	Rural	South	25	24	49
6	Omagh	Rural	North	49	32	81
Total				271	269	540

Table 1: Breakdown of sites included in phase one of study.

three hundred and eight. The five most frequent diagnosis in the entire sample were depressive disorder (n= 190, 35.2%), alcohol dependence (n=86, 15.9%), an anxiety disorder (n=28, n=5.2%) schizophrenia (n=18, 3.3%) and bipolar disorder (n=14, 2.6%). This accounted for 63.7% with the remainder diagnosed with a variety of other psychiatric disorders (Table 2).

Diagnosis by gender

The most common diagnosis in all males in the study was depression (n=80, 29.5%). Depression was the most common diagnosis in males in Omagh (n=23, 46.9%) and Belfast (n=35, 51.5%). Alcohol dependence was the most common diagnosis in males in Ballinasloe (n=6, 24%), Donegal (n=14, 36.8%) and Portlaoise (n=16, 37.2%). The most common diagnosis in all females in the study and in all sites was depression (n=110, 40.9%) (Table 3).

Figure 1 displays the male to female ratios by diagnosis. The male to female ratio for depression was 8:11, for anxiety disorders 5:9, for schizophrenia 11:7, for bipolar affective disorder 9:5 and for alcohol dependence 3:1. In this study, depression was significantly more common in females compared to males (p<0.001 OR 0.61 CI 0.42-

SITE	Depression n (%)	Schizophrenia n (%)	Bipolar Disorder n (%)	Anxiety Disorder n (%)	Alcohol Dep n (%)
1 (n=89)	12 (13.5)	1 (1.1)	3 (3.4)	4 (4.5)	25 (28.1)
2 (n=109)	15 (13.8)	2 (1.8)	3 (8.2)	6 (5.5)	9 (8.3)
3 (n=89)	33 (37.1)	2 (2.2)	2 (2.2)	1 (1.1)	15 (16.9)
4 (n=123)	69 (56.1)	2 (1.6)	1 (0.8)	7 (5.7)	19 (15.4)
5 (n=49)	16 (32.7)	3 (6.1)	0 (0)	4 (8.2)	6 (12.5)
6 (n=81)	45 (55.6)	8 (9.9)	5 (6.2)	6 (7.4)	12 (14.8)
Total (n=540)	190 (35.2)	18 (3.3)	14 (2.6)	28 (5.2)	86 (15.9)

Table 2: Diagnosis by site.

SITE	Male	n (%)	Female	n (%)	Total	n (%)
1	Alc Dep	16 (37.2)	Alc Dep	9 (19.6)	Alc Dep	25 (28.1)
2	No current Dx	9 (18.8)	Depression	12 (19.7)	No Current Dx	17 (15.6)
3	Alc Dep	14 (36.8)	Depression	23 (45.1)	Depression	33 (37.1)
4	Depression	35 (51.5)	Depression	34 (61.8)	Depression	69 (56.1)
5	Alc Dep	5 (20)	Depression	12 (50)	Depression	16 (32.7)
6	Depression	23 (46.9)	Depression	22 (68.9)	Depression	45 (55.6)

Table 3: Diagnosis by gender and site.

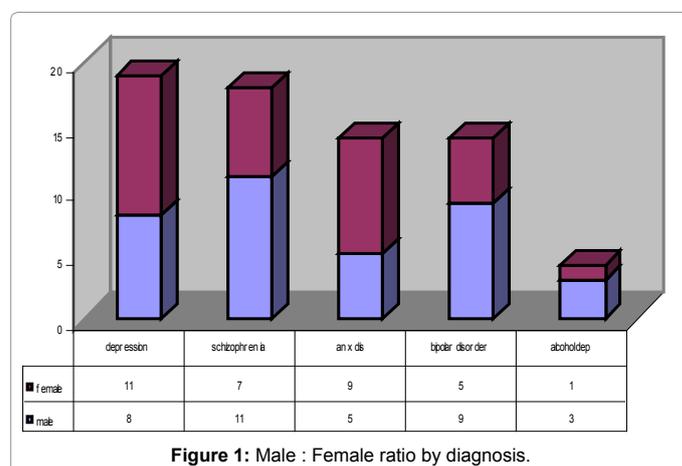


Figure 1: Male : Female ratio by diagnosis.

0.89) with alcohol dependence significantly more common in males compared to females ($p < 0.001$ OR 3.03 CI 1.78-5.19).

Diagnosis by region

Over half the study population in the North had depression ($n=114$, 55.9%) compared to just over one fifth in the South ($n=76$, 22.7%, $P < 0.001$ OR 5.99 CI 4.01-8.95). Alcohol dependence affected largely equal proportions in the North ($n=31$, 15.2%) and in the South ($n=55$, 16.4%). Anxiety disorders were more common in the North ($n=13$, 6.4%) compared to the South ($n=15$, 4.5%). Schizophrenia was twice as common in the North ($n=10$, 4.9%) compared to the South ($n=8$, 2.4%). Bipolar disorder had similar rates in the North ($n=6$, 2.9%) and in the South ($n=8$, 2.4%) (Figure 2).

Diagnosis by Urban/Rural location

The results of diagnosis by urban/rural location are shown in Figure 3. Depression affected largely equal proportions in urban ($n=84$, 36.2%) and rural areas ($n=106$, 34.5%). A similar pattern was observed with anxiety disorders ($n=13$, 5.6%; $n=15$, 4.9%). Alcohol dependence was one and a half times more common in rural areas ($n=58$, 18.9%) compared to urban areas ($n=28$, 12.1%). This was statistically significant ($p < 0.005$ OR 5.9 CI 0.3-0.99). Schizophrenia was three

times more common in rural areas ($n=14$, 4.6%) compared to urban areas ($n=4$, 1.7%) Bipolar disorder was twice as common in rural areas ($n=10$, 3.2%) compared to urban areas ($n=4$, 1.7%).

Diagnosis by abuse

One hundred and fifty (28%) of the study population experienced childhood physical abuse and one hundred and six (20%) experienced childhood sexual abuse. In this study females were significantly more likely to have a history of sexual abuse ($p < 0.001$; OR 3.31 CI 2.02-5.43) or physical abuse ($p=0.03$; OR 1.56 CI 1.04-2.32). Of all six sites, Omagh had the highest rate of physical abuse ($n=41$, 50.6%) while Belfast had the highest rate of sexual abuse ($n=37$, 30%). Those in the North were significantly more likely to have a history of physical abuse ($P < 0.0001$; OR 1.76 CI 1.43-2.3) compared to the South (Figure 4). Comparison of sexual abuse between the North and the South of Ireland did not reach statistical significance ($P=0.064$; OR 1.14 CI 0.72-1.79). Those in urban areas were significantly more likely to have a history of sexual abuse. ($p < 0.04$; OR 1.6 CI 1.03-2.51) There was no statistically significant difference in the rates of physical abuse ($p=0.97$ OR 1.01 CI 0.68-1.51) between urban and rural areas (Figure 5).

Regarding diagnosis, depression was the most common in those with a history of childhood sexual abuse (54/190, 28.4%) while schizophrenia was the most common in those with physical abuse (8/18, 44.4%). Four out of the eighteen (22%) participants with schizophrenia had a history of childhood sexual abuse and sixty seven of the one hundred and ninety with depression had a history of physical abuse (35.2%).

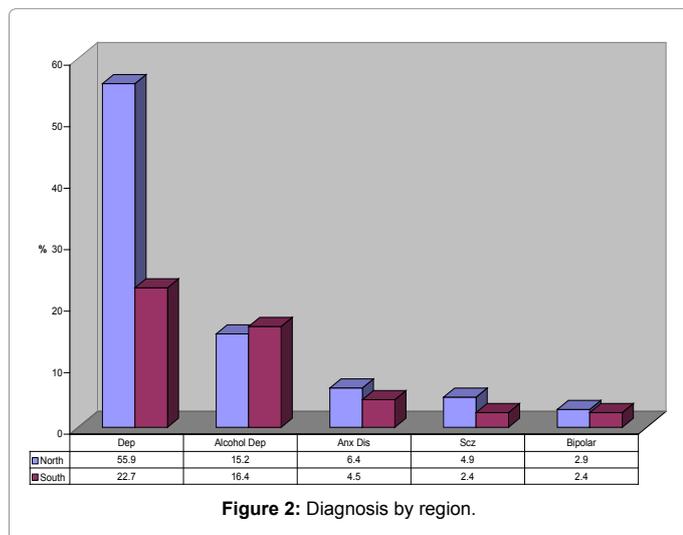


Figure 2: Diagnosis by region.

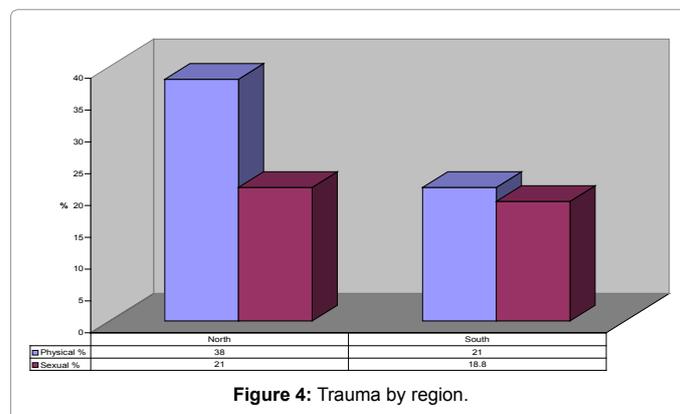


Figure 4: Trauma by region.

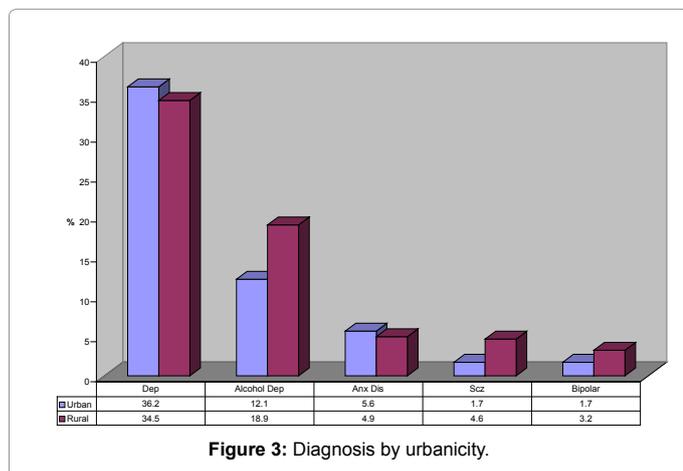


Figure 3: Diagnosis by urbanicity.

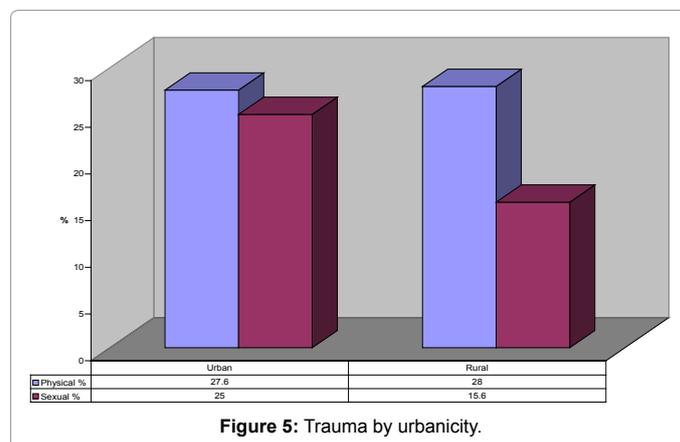


Figure 5: Trauma by urbanicity.

Discussion

To the best of our knowledge this is the first study looking at common psychiatric diagnoses and their associations with gender, site, region and trauma (childhood sexual and physical abuse) on the island of Ireland. Other strengths of this study include the fact that it involved a large number of participants from multiple sites and a large range of data was gathered for each participant. The study population was representative of those referred to mental health outpatient clinics. Individuals were diagnosed and outcome measures determined using valid, reliable assessment tools.

With regard to limitations, we acknowledge that the data was collected just over a decade ago. The nature of our analysis meant that associations could only be suggested and causal inferences could not be concluded. It must be remembered that numbers reflect referral patterns and not true prevalence. We were disappointed that the small numbers of participants made it impossible to draw conclusions on statistical significance in those with a diagnosis of schizophrenia and bipolar disorder. With respect to trauma, participants were asked to confirm the presence or absence of childhood physical or sexual abuse. No attempt was made to quantify the extent or qualify the severity of the abuse. Whilst the authors acknowledge that computer assisted self-completion interviews advantageous in eliciting franker responses than face to face questioning, we are not aware of evidence that open questioning underestimates reporting of abuse [6].

The most common diagnosis in the sample, affecting over one third, was depressive disorder with a male: female ratio of 8:11. Interestingly, this was diagnosed more frequently in the North where it affected approximately half the sample. As previously stated, the aetiology of depression is multifactorial and it could be suggested that historical background differences on the island of Ireland have influenced the results. Alcohol dependence was the second most common diagnosis affecting over a sixth of the sample. It affected three times more males than females and was one and a half times more common in rural areas. Schizophrenia was twice as common in the North. Referral patterns may have influenced the results and this must be considered when drawing meaningful conclusions.

Abuse is increasingly being linked with psychosis. Our study reported higher rates of abuse in the North and this may be associated with the higher rates of schizophrenia and alcohol dependence in the North. Schizophrenia, bipolar disorder and alcohol dependence were all more common in rural areas. This is different from what has previously been shown [2,3].

Abuse in childhood has consistently been associated with negative consequences on mental, physical and social health [4]. Our study found depression to be the most common diagnosis in those with previous childhood sexual abuse and schizophrenia most common in those having previously suffered physical abuse. Reports from the Adverse Childhood Events Study (ACE Study) highlighted a dose response relationship between adverse childhood experiences e.g. abuse, serious household dysfunction and the severity of mental health difficulties [15].

In the past few years there has been renewed interest in the association between childhood trauma and subsequent psychotic phenomena. Recent large scale population based studies controlling for possible mediating variables have suggested a similar dose response relationship between childhood trauma and psychosis. These studies have offered further weight to a possible causal link between childhood trauma and psychosis [5]. Cutjar et al. [16] have found that childhood

sexual abuse was a risk factor in the development of psychotic illness. Fisher et al. [6] demonstrated reports of severe childhood physical abuse being associated with psychotic disorders. Currently there is interest in developing cognitive and biological theories to explain the relationship between trauma and psychosis. Our study would certainly support abuse as a risk factor for both depression and schizophrenia and adds to findings from previous studies. This evidence has importance for those working with patients who are deemed "at risk" of developing psychosis or experiencing psychotic phenomenon. Comprehensive assessment of traumatic childhood experiences is essential for these patients. Those working with patients need to consider childhood trauma in the context of evolving mental illness and in its management.

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