



The factors associated with forensic psychiatrists' decisions in criminal responsibility and social dangerousness evaluations

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HIGHLIGHTS

- Higher manic excitement, positive and negative symptoms at time of forensic evaluation differentiate Not-CRDs from CRDs.
- Not-CRDs are more likely to be female, to suffer from schizophrenia spectrum disorders, and bipolar spectrum disorders.
- Social dangerousness is more likely to be associated with schizophrenia spectrum disorders and personality disorders.
- The wide temporal distance between the forensic psychiatric evaluation and the crime suggests the possibility of time bias.

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ABSTRACT

Despite the central role in criminal trials, there is little research on the decision-making processes of experts in forensic psychiatry. We aimed to investigate the role of sociodemographic, psychopathological, and criminological characteristics in forensic psychiatric decisions on criminal responsibility and social dangerousness in criminal trials. We analyzed 302 forensic psychiatric reports provided by 16 forensic psychiatrists from the North, Central and Southern Italy. Defendants' psychiatric symptom severity was evaluated through the 24-item Brief Psychiatric Rating Scale (BPRS), the Clinical Global Impression (CGI) scale and the Global Assessment of Functioning (GAF). Defendants judged not criminally responsible (Not-CRDs) presented with more severe psychiatric symptoms (positive symptoms, negative symptoms, manic excitement / disorganization), were more likely to be female, to be affected by a schizophrenia spectrum disorder, or bipolar spectrum disorder and to have had a higher number of previous psychiatric treatments and previous involuntary hospitalizations compared to their criminally responsible counterparts. Not-CRDs affected by a schizophrenia spectrum disorder, personality disorder, with severe psychiatric symptoms and with histories of criminal convictions and more victims were more likely to have received a judgment of social dangerousness. The forensic psychiatric evaluations were carried out on average of 770 days after the time of the crime, which in light of the other results, suggests an effect of the perceptions of the expert on the judgment of responsibility, raising the possibility of time bias on forensic judgments concerning defendants' mental responsibility.

1. Introduction

In most jurisdictions, forensic psychiatric evaluations contribute to the determination of a defendant's responsibility and dangerousness in

criminal trial. Although legal standards for the insanity defense vary between countries, the fundamental concept that altered/diseased mental functioning could impact on a person's degree of responsibility for a criminal offense is widely accepted (Meynen, 2013). The

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assessment of the risk of recurrent violent or aggressive behavior, which underlies the concept of dangerousness, is another major issue in forensic psychiatry. Forensic psychiatric assessment of the defendant requires that the expert evaluates whether or not the defendant suffers from a mental disorder, and whether this condition reaches the threshold established by the legal standard for nonresponsibility or social dangerousness (Redding, Floyd, & Hawk, 2001).

In recent years, a “neurolaw” perspective based on the introduction of “objective” neuroscientific data in forensic psychometric judgment has received increasing attention (Cashmore, 2010; Meynen, 2019; Parmigiani et al., 2017; Parmigiani, Mandarelli, Meynen, Carabellese, & Ferracuti, 2019; Scarpazza, Ferracuti, Miolla, & Sartori, 2018). Nevertheless, the forensic psychiatric judgments in criminal trials are often criticized for their methodological limitations, as well as for their subjectivity and questionable reliability (Gkotsi & Gasser, 2016).

Considering the potential impact of future scientific evidence on the judgments of criminal responsibility and dangerousness (Aharoni et al., 2013; Darby, Horn, Cushman, & Fox, 2018; Roskies & Morse, 2013), to date there is little research on the decision-making processes in the legal field and by forensic psychiatrists in the criminal trial (Beckham, Annis, & Gustafson, 1989; Cooper & Neuhaus, 2000; Danziger, Levav, & Avnaim-Pesso, 2011; Dhami, 2003; Homant & Kennedy, 1986; Loudon & Skeem, 2007; Mossiere & Maeder, 2015, 2016; Murrie, Boccaccini, Guarnera, & Rufino, 2013; Warren, Murrie, Chauhan, Dietz, & Morris, 2004). A possible explanation of this lack of data lies in the difficulty in bringing a judge and/or an expert witness into an experimental context, because, for example, of the limits imposed by confidentiality.

Several sources of bias have been hypothesized in judicial decisions, including hindsight and outcome biases, which could also affect forensic psychiatric experts' decisions (Arkes, 1989). Factors with no bearing to the trial proved to influence judges' parole decisions (Danziger et al., 2011), and extraneous factors could also bias forensic psychiatric evaluations.

Criticism has been raised questioning the reliability and objectivity of forensic expert evaluations, such as the wide disagreement among experts regarding the same case (Gowensmith, Murrie, & Boccaccini, 2013; Guarnera & Murrie, 2017), the lack of standardized procedures for reaching a decision that the defendant did not satisfy the criteria for nonresponsibility based on mental illness (Beckham et al., 1989), and the presence of unintentional or intentional biases (Beckham et al., 1989; Dattilio, Commons, Adams, Gutheil, & Sadoff, 2006; Homant & Kennedy, 1986; Murrie et al., 2013). Forensic experts' decisional processes have been shown to be influenced by several factors such as money, prestige, and the amount of public attention attracted by the case (Commons, Miller, & Gutheil, 2004). A recent meta-analysis focusing on the characteristics of the defendant, found that the clinical judgment of not criminally responsible was associated with a psychiatric history and with the presence of a psychotic disorder (Kois & Chauhan, 2018).

On these bases, we hypothesized that different sociodemographic, psychopathological, and criminological factors might be differently expressed in defendants judged responsible for a crime, and those judged to be lacking mental responsibility or having substantially diminished responsibility. In Italy, the legal criteria for evaluating whether a person is not responsible for a crime due to a mental condition are based on a mixed cognitive-volitional assessment. The evaluation of social dangerousness which, unlike the one on responsibility refers to the current time, must consider the probability of crime recurrence in an undefined future (Ciccone & Ferracuti, 1995; Ferracuti et al., 2019).

The principal aim of the present study, in which a sample of Italian forensic psychiatric evaluations were examined, was to determine whether some sociodemographic, clinical, psychopathological, and criminological factors could be expressed differently in defendants in relationship to their assessed criminal responsibility. The secondary aim was to determine whether those variables are expressed differently in

relationship to the defendants' social dangerousness.

2. Material and methods

We asked 16 forensic psychiatrists from the Northern, Central and Southern Italy, to provide the last 20 expert reports made in criminal proceedings and already used as evidence in the trial. Inclusion criteria were as follows: 1) forensic psychiatric evaluations performed on defendants for the assessment of criminal responsibility or dangerousness to others; 2) expert evaluations had to have been requested by a judge, and not by a public prosecutor or by a private attorney.

Among the 320 forensic psychiatric reports we collected, 302 (94%) fulfilled the inclusion criteria. Reports were excluded either because they did not pertain to evaluations of criminal responsibility or dangerousness, or they had been conducted upon request of the public prosecutor. The included reports were as follows: $n = 103$ evaluations only of criminal responsibility, $n = 187$ evaluations of both criminal responsibility and dangerousness, $n = 12$ evaluations of only dangerousness. Consequently, the analyses for criminal responsibility were conducted on 290 reports, while those for dangerousness were conducted on 199 evaluations.

The reports were thoroughly analyzed to collect relevant information on the type of crime, sociodemographic and clinical variables of defendant, and victim-related variables. Such information was used to compile an ad-hoc form. We also considered information pertaining the expert, including the expert's gender and age at the time of evaluation. We calculated the time passed between the alleged crime and the forensic psychiatric assessment.

A trained rater, who was blind to the forensic psychiatric expert's conclusions, assessed the defendants' psychiatric symptom severity by means of the Brief Psychiatric Rating Scale (BPRS, Expanded Version) (Ventura et al., 1993). The BPRS scoring was based on the information that the expert had reported in the manuscript, specifically the clinical history and the description of the mental status of the defendant during the forensic psychiatric assessment. This type of approach has limitations, as it is possible that the forensic psychiatric expert's compiled BPRS would have resulted in somewhat different BPRS scores. However, we decided to use this methodology because the reports we collected did not include a BPRS evaluation, nor other psychiatric rating scales. However, by doing so we assumed that the psychopathological elements that the expert had decided to describe in the report and therefore to convey to the judge, were those that the expert had taken into account in the decision-making process. Four BPRS factor scores were calculated, i.e., manic excitement/disorganization, anxiety/depression, negative symptoms, and positive symptoms (Ruggeri et al., 2005).

The psychiatric diagnoses were based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013). We grouped the defendants into five diagnostic categories: schizophrenia spectrum disorders, personality disorders, bipolar and related disorders, other diagnoses, and no psychiatric diagnosis.

Psychiatric symptom severity was further classified according to the Clinical Global Impression (CGI) scale (Guy, 1976). Global functioning was measured with the Global Assessment of Functioning (GAF) (Aas, 2010), a scale ranging from 0 to 100 that measures the burden of psychological distress and psychiatric symptoms on social, psychological, and occupational functioning. The CGI and GAF assessments were also carried out blindly with respect to the outcome of the forensic expert's conclusion, with a method that is analogous to the one we used to score the BPRS.

Crime types were grouped into five categories: 1) crimes against the person, 2) homicide/attempted homicide, 3) property crime 4) sexual offenses 5) crimes against the public administration, related to narcotics, and misdemeanors. Due to the related legal and psychiatric forensic relevance, we decided to use a distinct category for homicide

distinguished by other crimes against the person. The study was approved by the Institutional Review Board.

We used the Statistical Package for Social Sciences version 20.0 for all the statistical analyses. All tests were 2-tailed, with α value set at 0.05. We used the independent sample *t*-test to compare parametric quantitative between-group data (males vs. females; nonresponsibility/substantially diminished responsibility vs. responsible; dangerous vs. not dangerous), and the Mann-Whitney *U* test to compare non-parametric quantitative between-group data. Chi-square test with Yates correction for 2×2 tables, or Fisher's exact test, as appropriate, was used to compare categorical variables.

3. Results

The mean age of the 16 forensic psychiatric experts from whom we collected the reports was 51.8 years (SD 10.4, range 30–70), of whom 19% were women. Regarding the various stages of the criminal proceeding, the 302 reports we analyzed were comprised of 76.2% defendants, 20.5% of persons under investigation, 3.3% of appellants (hereinafter all evaluatees will be referred to as defendants for convenience).

Most of the included defendants were males (87%), who were significantly younger and less educated than females ($p < 0.05$). Schizophrenia spectrum disorders and personality disorders accounted for 66% of the total diagnoses in the overall sample. We found no

significant gender differences in the psychiatric diagnoses, while the 5.9% of defendants who had no psychiatric diagnosis were all males. Male defendants showed significantly higher prevalence of substance abuse history and criminal conviction in comparison with female defendants ($p < 0.05$). The defendants' scores on the psychiatric rating scales (BPRS, CGI, and GAF), type of crime, and number of victims showed no significant between-group gender differences.

We summarized all the sociodemographic and clinical gender differences of our sample in Table 1.

We compared the BPRS total and factor scores between criminally responsible defendants (CRDs), and non-responsible defendants or defendants with substantially diminished responsibility (not-CRDs). The independent sample *t*-test showed not-CRDs to have higher mean scores of total BPRS ($p < 0.001$), manic excitement/disorganization ($p < 0.01$), positive symptoms ($p < 0.001$), and negative symptoms ($p < 0.001$) factors (Fig. 1).

We summarized the psychiatric rating scales scores and forensic psychiatry expert evaluations of the defendants' responsibility in Table 2.

CRDs showed significantly higher global functioning and lower CGI scores ($p < 0.001$). Not-CRDs had histories of more previous outpatient or inpatient psychiatric treatments ($p < 0.001$), as well as of involuntary hospital admissions ($p < 0.001$), and they were more frequently under psychiatric care at the time of crime ($p < 0.001$). Chi-square test showed significant between-group differences in psychiatric

Table 1

Gender differences in sociodemographic and clinical characteristics of defendants ($n = 302$) who underwent forensic psychiatric evaluations for a criminal trial.

	Males ($n = 264$)	Females ($n = 38$)	Total ($n = 302$)	<i>p</i>
Age at the time of evaluation, years; mean (SD)	39.8 (12.0)	44.6 (12.9)	40.4 (13.0)	< 0.05 ¹
Education, years; mean (SD)	10.1 (3.8)	11.8 (4.5)	10.3 (3.9)	< 0.05 ¹
Married	13.7%	23.7%	15.2%	ns ²
Alcohol drinkers	37.5%	34.2%	37.2%	ns ²
Homeless	17.9%	5.3%	10.2%	ns ²
History of substance abuse	50%	28.9%	47.3%	< 0.05 ²
History of criminal conviction	41.2%	22.2%	38.8%	< 0.05 ²
Previous psychiatric treatment	81.2%	73%	80%	ns ²
Previous involuntary psychiatric hospitalization	29.6%	47.4%	32%	< 0.05 ²
Under psychiatric care at time of crime	82.4%	84.2%	82.6%	ns ²
BPRS total, mean (SD)	38.0 (11.3)	40.5 (11.0)	38.3 (11.3)	ns ¹
BPRS manic excitement/disorganization, mean (SD)	8.8 (3.4)	9.7 (4.8)	8.9 (3.6)	ns ¹
BPRS positive symptoms, mean (SD)	9.1 (5.2)	9.9 (5.2)	9.2 (5.2)	ns ¹
BPRS negative symptoms, mean (SD)	9.8 (4.1)	9.1 (3.2)	9.9 (4.0)	ns ¹
BPRS anxiety/depression, mean (SD)	9.5 (3.4)	10.5 (3.4)	9.6 (3.4)	ns ¹
CGI	4.0 (1.6)	4.4 (1.8)	4.1 (1.6)	ns ¹
GAF	53.9 (15.8)	50.5 (16.1)	53.5 (15.8)	ns ¹
Psychiatric diagnosis				ns ²
Schizophrenia spectrum disorder	36.7%	29.9%	35.8%	
Personality disorder	42.1%	29.2%	30.8%	
Bipolar disorder	12.9%	7.9%	12.5%	
Other diagnoses	12.5%	21.1%	13.6%	
No diagnosis	8.7%	0%	5.9%	
Type of crime				ns ²
Crimes against the person	47.2%	55.3%	48.3%	
Homicide/attempted homicide	15.1%	15.8%	15.2%	
Property Crime	12.7%	10.5%	12.4%	
Sexual offenses	9.1%	0%	7.9%	
Crimes against the public administration, crimes related to narcotics, misdemeanors	15.9%	18.4%	16.2%	
Number of victims ⁴ , mean (SD), median (range)	1.3 (1.0); 1 (0–6)	1.2 (0.7); 1 (0–3)	1.2 (0.9), 1 (0–6)	ns ³

Note. BPRS = Brief Psychiatric Rating Scale; CGI = Clinical Global Impressions; GAF = Global Assessment of Functioning; ns = not significant.

Missing data: Age at the time of evaluation $n = 28$; Education $n = 31$; Marital status $n = 13$; Alcohol drinkers $n = 14$; Homeless $n = 10$; History of substance abuse $n = 10$; History of criminal conviction $n = 19$; Previous involuntary psychiatric hospitalization $n = 9$; Under psychiatric care at crime time $n = 3$; BPRS $n = 2$, (It was not possible to obtain BPRS item scores from two reports because in one of them the defendant was reported to have refused the interview, and the other was unable to conduct the interview due to severe neurocognitive disorder); type of crime $n = 12$; Number of victims $n = 53$.

¹ *p* value by independent sample *t*-test.

² *p* value by chi-squared.

³ *p* value by Mann-Whitney *U* test.

⁴ Crimes against the public administration, crimes related to narcotics, police contravention and property crimes are classified as having 0 victims.

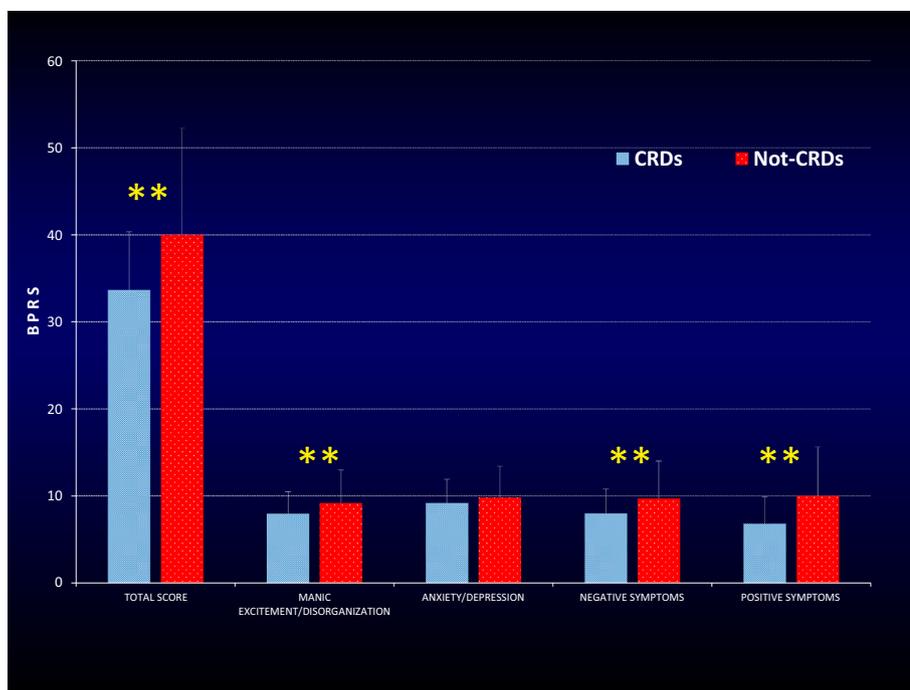


Fig. 1. Title: Brief Psychiatric Rating Scale scores differences between criminally responsible defendants and not-criminally responsible defendants. Note: Brief Psychiatric Rating Scale (BPRS), criminally responsible defendants (CRDs), not-criminally responsible defendants (not-CRDs). $N = 302$ forensic psychiatric reports. $**p < 0.001$.

Table 2

Psychiatric rating scales scores and forensic psychiatry expert evaluations of the defendant's responsibility.

Psychiatric rating scales	Nonresponsible/substantially diminished responsibility ($n = 198$)	Responsible ($n = 92$)	p
BPRS total, mean (SD)	40.0 (12.2)	33.7 (6.8)	$< 0.001^1$
BPRS manic excitement/disorganization, mean (SD)	9.2 (3.9)	8.0 (2.5)	$< 0.01^1$
BPRS positive symptoms, mean (SD)	10.0 (5.6)	6.9 (3.1)	$< 0.001^1$
BPRS negative symptoms, mean (SD)	9.7 (4.3)	8.0 (2.8)	$< 0.001^1$
BPRS anxiety/depression, mean (SD)	9.8 (3.6)	9.3 (2.7)	ns ¹
CGI, median (range)	5 (1–7)	3 (1–5)	$< 0.001^2$
GAF, mean (SD)	48.1 (13.7)	66.6 (11.1)	$< 0.001^1$

Note. BPRS = Brief Psychiatric Rating Scale; p values by independent sample t -test. Among the group of the examined who were judged nonresponsible or having substantially diminished responsibility, 121 (41.7% of the total sample) were deemed nonresponsible.

¹ p value by independent sample t -test.

² p value by Mann-Whitney U test.

diagnoses as well as type of crime ($p < 0.001$). Schizophrenia spectrum disorders were the most frequent diagnoses in the not-CRDs group (47%), while personality disorders were the most represented in the CRDs (50%). Lastly, CRDs had fewer victims than not-CRDs ($p < 0.05$).

Table 3 summarizes the sociodemographic, clinical and criminal characteristics of the defendants grouped based on criminal responsibility.

Concerning the evaluations of dangerousness, the independent sample t -test disclosed that dangerous defendants had higher BPRS scores in total ($p < 0.001$), manic excitement/disorganization ($p < 0.01$), and positive symptoms ($p < 0.001$) in comparison with non-dangerous defendants (Fig. 2). There were no significant differences in the psychiatric histories of these two groups, whereas alcohol consumption was more prevalent in dangerous defendants ($p < 0.05$). Chi-square test showed significant differences in psychiatric diagnoses ($p < 0.01$) between dangerous and non-dangerous defendants. We did not find between-group differences in the types of crime committed. A higher number of victims distinguished the dangerous subjects ($p < 0.01$) (Table 4).

The mean time between commission of the crime and the forensic psychiatric evaluation was 770 days (SD 722; range 1–3185 days). Tables 4 and 5 summarize sociodemographic, clinical, psychopathological, and criminal characteristics of the defendants grouped based on the assessment of their dangerousness.

4. Discussion

Our study conducted on 302 forensic psychiatric reports extends the little existing data on clinical, psychopathological and criminological factors influencing psychiatric forensic judgments of responsibility and dangerousness in criminal trials.

Defendants judged not guilty because of a mental disorder or with substantially diminished responsibility presented more severe psychiatric symptoms than CRDs, as showed by BPRS total score as well as factor scores, except for the anxiety/depression factor. Positive symptoms, negative symptoms and manic excitement / disorganization factors were shown to be associated with judgments of nonresponsibility and could be generally discussed as relating to the impact of a “psychotic” dimension on responsibility, beyond the psychiatric categorical diagnosis. In interpreting these results, one must consider that the BPRS scores described the defendant's state of mind at the time of the forensic evaluation, and not at crime time. It is unlikely that the psychiatric symptoms pattern observed during the evaluation could be similar to those presented at time crime. These results suggest that the defendant's psychopathological characteristics observed during the forensic psychiatric expert's evaluation have an impact on the decision regarding the criminal responsibility and add empirical evidence to the few reports on this topic (Kois & Chauhan, 2018; Rogers, Dolmetsch, & Cavanaugh, 1981; Warren et al., 2004). The implications of this result

Table 3
Sociodemographic, clinical and criminal characteristics of the defendants based on their responsibility evaluation.

	Nonresponsible/substantially diminished responsibility (n = 198)	Responsible (n = 92)	Total	p
Age at the time of evaluation, years; mean (SD)	40.3 (12.7)	40.3 (13.7)	40.3 (31.1)	ns ¹
Males	83.7%	94.6%	87.2%	< 0.01 ²
Education, years; mean (SD)	9.5 (4.1)	10.7 (3.8)	10.3 (4.0)	< 0.05 ¹
Married	13.3%	18.0%	14.8%	ns ²
Alcohol drinkers	33%	45.6%	37.1%	< 0.05 ²
Homeless	16.3%	15.6%	16.1%	ns ²
History of substance abuse	53.3%	44.2%	47.1%	ns ²
History of criminal conviction	34.3%	46.7%	38.4%	< 0.05 ²
Previous psychiatric treatment	85.7%	67.4%	79.9%	< 0.001 ²
Previous involuntary psychiatric hospitalization	40.6%	12.4%	31.7%	< 0.001 ²
Under psychiatric care at crime time	89.8%	64.8%	81.9%	< 0.001 ²
Psychiatric diagnosis				< 0.001 ²
Schizophrenia spectrum disorder	47.0%	6.5%		
Personality disorder	22.7%	50.0%		
Bipolar disorder	15.7%	6.5%		
Other diagnoses	12.6%	17.4%		
No diagnosis	2.0%	19.6%		
Type of crime				< 0.001 ²
Crimes against the person	55.6%	30.8%	47.5%	
Homicide/attempted homicide	11.2%	25.3%	15.8%	
Property Crime	10.7%	15.4%	12.2%	
Sexual offenses	5.9%	12.1%	7.9%	
Crimes against the public administration, crimes related to narcotics, misdemeanors	16.6%	16.5%	16.5%	
Number of victims, mean (SD), median (range)	1.3 (0.9), 1 (0–6)	1.0 (0.6), 1 (0–3)	1.2 (0.9), 1 (0–6)	< 0.05 ³

¹ p value by independent sample t-test.

² p value by chi-squared.

³ p value by Mann-Whitney U test.

are profound. Bear in mind, the judgment on criminal responsibility requires that the mental state be reconstructed retrospectively at the time of the crime. Since the characteristics and severity of psychiatric symptoms observed at the time of evaluation, which took place on average 770 days after the crime, could differ widely from the time of the crime, this result provides a possible source of bias in the expert's

assessment (time bias). Whether more severely and acutely psychotically disturbed defendants are referred earlier for an insanity assessment, resulting in a shorter time being associated with findings supportive of the insanity defense, is a hypothesis deserving further investigation.

We found that female defendants were judged insane more

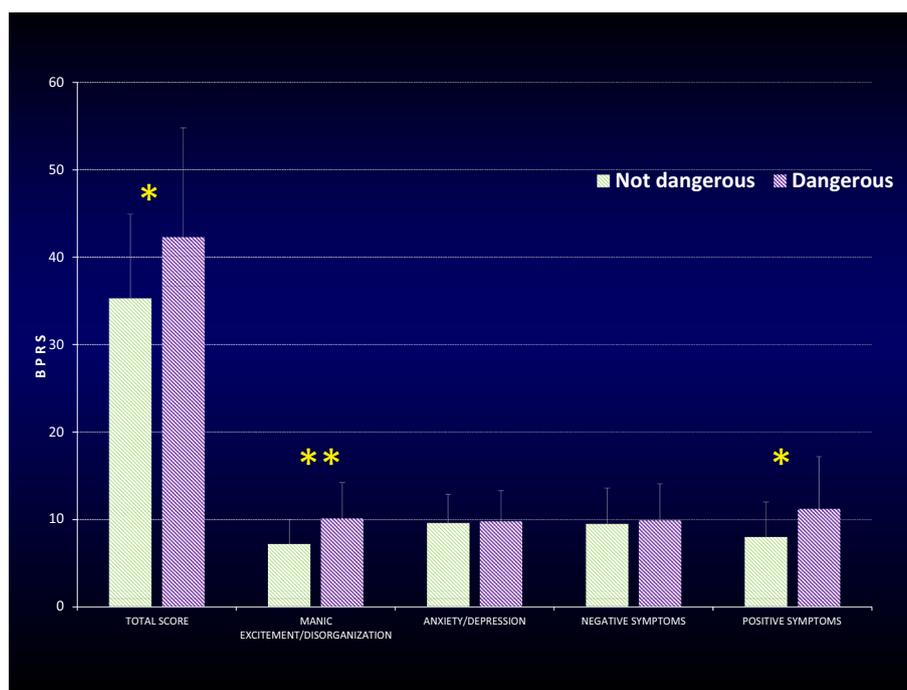


Fig. 2. Title: Brief Psychiatric Rating Scale scores differences between dangerous and not dangerous defendants.
Note: Brief Psychiatric Rating Scale (BPRS). N = 199 forensic psychiatric reports. *p < 0.05, **p < 0.001.

Table 4
Psychiatric rating scales scores and forensic psychiatry expert evaluations of the defendant's dangerousness.

Psychiatric rating scales	Dangerous (n = 144, 72%)	Not dangerous (n = 55, 28%)	p
BPRS total, mean (SD)	42.3 (12.5)	35.3 (9.6)	< 0.001 ¹
BPRS manic excitement/disorganization, mean (SD)	10.1 (4.5)	7.2 (2.8)	< 0.001 ¹
BPRS positive symptoms, mean (SD)	11.2 (6.0)	8.0 (4.0)	< 0.001 ¹
BPRS negative symptoms, mean (SD)	9.9 (4.2)	9.2 (4.1)	ns ¹
BPRS anxiety/depression, mean (SD)	9.8 (3.5)	9.6 (3.3)	ns ¹
CGI, median (range)	4 (1–7)	5 (3–7)	< 0.001 ²
GAF, mean (SD)	56.1 (12.0)	44.8 (13.0)	< 0.001 ¹

Note. BPRS = Brief Psychiatric Rating Scale; CGI = Clinical Global Impression; GAF = Global Assessment of Functioning.

¹ p value by independent sample t-test.

² p value by Mann-Whitney U test.

Table 5
Sociodemographic, clinical and criminal characteristics of the defendants based on their dangerousness evaluation.

	Dangerous (n = 144, 72%)	Not dangerous (n = 55, 28%)	Total	p
Age at the time of evaluation, years; mean (SD)	40.1 (11.4)	42.2(15.4)	40.7 (12.7)	ns ¹
Males	83.8%	83.6%	83.8%	ns ²
Education, years; mean (SD)	11.0 (3.6)	10.5 (4.2)	10.9 (3.8)	ns ¹
Married	11.0%	14.8%	12.1%	ns ²
Alcohol drinkers	36.8%	20.8%	31.3%	< 0.05
Homeless	21.2%	11.1%	18.3%	ns ¹
History of substance abuse	47.8%	35.2%	44.3%	ns ²
History of criminal conviction	39.1%	22.6%	34.4%	< 0.05
Previous psychiatric treatment	85.2%	85.2%	85.2%	ns
Previous involuntary psychiatric hospitalization	42.6%	41.5%	42.3%	ns
Under psychiatric care at crime time	89.5%	88.9%		ns
Psychiatric diagnosis				< 0.01 ²
Schizophrenia spectrum disorder	52.1%	38.2%	48.2%	
Personality disorder	24.3%	20.0%	23.1%	
Bipolar disorder	12.5%	16.4%	13.6%	
Other diagnoses	11.1%	16.4	12.6%	
No diagnosis	0%	9.1%	2.5%	
Type of crime				ns ²
Crimes against the person	56.9%	50.9%	55.3%	
Homicide/attempted homicide	11.7%	5.7%	10.0%	
Property Crime	9.5%	13.2%	10.5%	
Sexual offenses	5.8%	7.5%	6.3%	
Crimes against the public administration, crimes related to narcotics, misdemeanors	16.1%	22.6%	17.9%	
Number of victims, mean (SD), median (range)	1.5 (1.1), 1 (0–6)	0.9 (0.8), 1 (0–3)	1.3 (1.0), 1 (0–6)	< 0.01 ³

¹ p value by independent sample t-test.

² p value by chi-squared.

³ p value by Mann-Whitney U test.

frequently compared to their male counterpart. However, a recent study (Mossiere & Maeder, 2016) found that gender did not influence verdict decisions, despite the defendants' behaviors being attributed to different factors based on gender. Defendants affected by schizophrenia spectrum and bipolar disorders were more frequently deemed not guilty by reason of insanity, probably because the insanity criteria in Italy rely mainly on cognitive and volitional impairments, which are likely to be found in these disorders. Not-CRDs had higher prevalence of previous psychiatric treatment and previous involuntary hospitalization compared to their accountable counterparts. This may reflect the severity of the psychiatric disorders that are usually associated with a verdict of not guilty by reason of insanity.

The majority of not-CRDs were in psychiatric care at the time of their crime, mostly in the public Mental Health Departments. In some cases, the forensic psychiatric expert had reported that, despite the defendant being in care, he/she had declared to have discontinued the pharmacological therapy some time before the crime. A study on insane arsonists, also shows that active psychotic symptoms and poor treatment compliance plays a central role in crime commission (Leong, Mueller, & Feldsher, 2019). This should be taken into consideration, given the possible implications for developing policies of prevention.

Not-CRDs who were also judged socially dangerous showed higher BPRS total scores, as well as positive symptoms and manic excitement / disorganization symptoms. Differently from the judgment on responsibility, that on social dangerousness involves a prognostic evaluation based on the defendant's current mental and behavioral condition. The results, found from comparing BPRS scores between dangerous and non-dangerous defendants, suggest the existence of a specificity in the psychopathological characteristics that are taken into consideration by experts in this type of decision. It should be noted that the negative symptoms, in the case of dangerousness, do not differentiate the two groups, although they often have a significant clinical impact.

Not-CRDs who were also judged socially dangerous were more frequently affected by schizophrenia spectrum or personality disorders than CRDs. An interpretation of this result is that social dangerousness is a condition strictly influenced by factors related to the psychiatric outcome, and both these types of disorders may have a poor prognosis, mainly because of the lack of insight and resistance to therapies. Histories of criminal convictions and more victims were associated with a judgment of social dangerousness. In this case it can be argued that criminological factors play a role in the psychiatric forensic assessment of dangerousness, which may depend on the specific legal definition used.

5. Conclusions

Specific clinical, psychopathological and criminological variables play a role in influencing forensic experts' judgments of responsibility and dangerousness in criminal trials. Forensic psychiatric evaluations were shown to be influenced by psychopathological factors present at the time of the experts' assessment, which may be different from those experienced by the defendant at the time of the crime (time bias). Further research is warranted to extend empirical data on factors influencing forensic psychiatric expert's decision making while performing forensic evaluations.

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Declaration of Competing Interest

The authors have declared that no competing interests exist.

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