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Direct and indirect self-injury: Is it really all the same?

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Abstract

Nonsuicidal self-injury commonly refers to the direct and deliberate destruction of body tissue without intent to die (e.g., cutting and burning). However, people may also use indirect ways to mistreat or abuse themselves without altering bodily tissue (e.g., eating disorders and substance abuse). The objective of this study is to explore similarities and differences between direct and indirect forms of self-injury in order to see if a psychopathological continuum of self-injurious behaviors can be observed. Participants were adult psychiatric patients presenting: (a) direct (e.g., cutting) and indirect (e.g., eating disorders) self-injury (Group 1); (b) only indirect (e.g., eating disorders) self-injury (Group 2); (c) neither direct nor indirect self-injury (Group 3). A group of healthy controls (Group 4) was also added, reaching a total of 144 participants. Direct self-harming behaviors, eating disorders, personality disorders, and clinical symptoms were assessed. No significant differences were observed between patients with direct and indirect self-harm and patients with only indirect self-harm in any clinical or personality variable, except for histrionic personality disorder. Results support evidence for the hypothesis that direct and indirect self-harm are related behaviors lying on a same psychopathological continuum, even if, on closer inspection, those who engage in NSSI, in addition to indirect self-injury, do seem to have "something more" from a clinical point of view. More research on larger samples is needed.

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1. Introduction

Nonsuicidal self-injury (NSSI) is a clinically relevant condition referring to the direct, deliberate destruction of body tissue without suicidal intent, such as cutting, burning, or scraping skin or hitting and biting oneself (Nock & Favazza, 2009). Prevalence rates of NSSI is estimated as between 7.5 and 46.5%, among adolescents, rising to 38.9% among university students, and 4–23% among adults (Cipriano et al., 2017; Swannell et al., 2014).

The age onset of NSSI seems to be most often in early adolescence, between 12 and 14 years old, but findings also report NSSI behaviors in children under the age of 12 (Cipriano et al., 2017). Early onset of NSSI is typically associated to more severe patterns and longer duration of NSSI (Ammerman et al., 2018), with social reinforcement through online NSSI activity (i.e., posting NSSI pictures on Instagram) playing a potential role in putting adolescents at risk to initiate or exacerbate NSSI (Brown et al., 2018).

NSSI is acted for several reasons, and above all emotion dysregulation, self-punishment, interpersonal influence, and communicating distress (Cipriano et al., 2017; Edmondson at al., 2016; Klonsky, 2007; Taylor et al., 2018).

Moreover, NSSI is related to a variety of psychiatric conditions, such as depression, anxiety, post-traumatic stress disorder (Taylor et al., 2018), personality disorders (D'Agostino et al., 2018; Modica, 2018), and suicidal thoughts and behaviors (Kiekens et al., 2018a, 2018b; Walsh et al., 2018). This is why Hooley and Franklin (2018) propose to consider it as a transdiagnostic phenomenon.

Despite all these data and a general agreement on the relevance of self-harming behaviors in the contemporary clinic, NSSI is described in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychological Association, 2013) as a "condition for further study" (Section III) due to insufficient evidence supporting its designation as a mental disorder (as cited in Washburn et al., 2015). Additionally, over the last 30 years, NSSI has been confusingly defined as belonging to different diagnostic categories, being presented as a symptom of borderline personality disorder (Dulit et al., 1994; Schaffer et al., 1982), an impulse control disorder (Favazza & Rosenthal, 1993; Herpertz, Steinmeyer, Marx et al., 1995; Herpertz et al., 1997), an emotion dysregulation disorder (Chapman et al., 2006; Claes et al., 2010; Duggan et al., 2012; Gratz & Roemer, 2008; Klonsky, 2007, 2009; Muehlenkamp et al., 2008; Victor et al., 2011), and an addictive behavior because of the similarities between the increase in negative emotions prior to NSSI and the aversive withdrawal symptoms experienced by drug users (Blasco-Fontecilla et al., 2016; Faye, 1995; Karwautz et al., 1996).

Furthermore, and even more important, NSSI is a very heterogeneous constellation of phenomena, on whose borders there is no fully agreement among clinicians and researchers. Recently, some authors raised the question of whether self-defeating behaviors (i.e., behaviors that involve people mistreating or abusing themselves but not intentionally altering body tissue) should also be considered as forms of self-injury (Hooley & St. Germain, 2014).

According to this view, a self-injurious continuum may be described, ranging from direct to indirect forms of self-harm (Hooley et al., 2014). Direct self-injury can be conceptualized as a deliberate act that directly aims to damage the body (e.g., skin cutting).

In contrast, indirect self-injury can be considered as a behavior that is clearly damaging to the self but does not involve immediate and deliberate damage to body tissue (St. Germain & Hooley, 2012).

The definition of direct self-injury coincides with the *DSM-5*'s criteria for NSSI. Eating-disorder behaviors, a pattern (two or more) of abusive relationships, meeting criteria for interpersonal violence, risky and reckless behaviors, persistent promiscuity with physical and psychological effects, careless driving, deliberately not taking medication, and excessive spending on unnecessary items while not fulfilling the basic needs of life can all be considered within this general definition (Hooley et al., 2014; St. Germain et al., 2012).

Existing research seems to suggest that people who engage in direct self-injury are also likely to engage in indirect forms of self-injurious behaviors (Hooley et al., 2014). Some studies report particularly high rates of comorbidity between direct self-injury and substance use disorders (Gupta & Trzepacz, 1997; Hilt et al., 2008; Putnins, 1995), as well as eating disorders (Dohm et al., 2002; Favaro & Santonastaso, 2000; Favazza et al., 1989; Paul et al., 2002; Sansone & Levitt, 2002; Stein et al., 2004).

However, to date specific research exploring the relationship between direct and indirect forms of self-injury is still very limited (Hooley et al., 2014). Although indirect self-injurious behaviors can be considered under a very broad definition of self-injury, we do not know if and to what extent those who engage in indirect forms of self-injury have characteristics in common with those who engage in NSSI so that possible differences must be seen just in terms of different severities ("severity model") or if the two are clearly distinct groups from a clinical point of view ("distinct condition model") (Hooley et al., 2014).

To make this understanding even more complicated is the fact that there is a lack of validated measures of self-harm assessing both direct and indirect self-harm. Recently, a Direct and Indirect Self-Harm Inventory was developed (DISH; Green et al., 2017) but it was still not available at the time of this study. The objective of this research is to better explore this issue from an empirical point of view by examining psychopathological characteristics of adult psychiatric patients engaging in direct (e.g., cutting) and indirect (e.g., eating disorders) forms of self-injury.

2. Materials and Method

2.1 Participants

Participants were adult psychiatric patients recruited in residential communities and public mental health services and healthy controls. Group 1 was made of 36 participants (3 males, 33 females; mean age = 33.31 years (*SD* = 11.84)) who were currently engaging in both NSSI and indirect self-injurious behaviors (eating disorders). Group 2 was made of 36 participants (7 males, 29 females; mean age = 30.94 years (*SD* = 9.36)) who had never engaged in NSSI but who were currently engaging in indirect self-injury (eating disorders). Group 3 was made of 36 participants (8 males, 28 females; mean age = 30.94 years (*SD* = 9.36)) who presented clinical and/or personality disorders but who had never engaged neither in NSSI nor in indirect self-injury. Group 4 was made of 36 healthy controls (12 males, 6 females; mean age = 34.64 years (*SD* = 11.34)) who had never engaged in any form of self-injurious behavior and who had no clinical or personality disorder. A total of 144 participants was reached for this study.

Participants with self-injury were included if, in addition to having a lifetime history of engagement in NSSI or indirect self-injury, have engaged in this behavior at least once in the past month. Participants were excluded if they had: (a) lifetime diagnoses of schizophrenia, other psychotic disorder, or bipolar affective disorder, as assessed by the Structured Clinical Interviews for DSM-IV Axis I disorder (SCID-I; First et al., 1996); (b) intellectual disability (e.g., mental retardation); or (c) insufficient knowledge of the Italian language.

After describing the study to the participants, their written informed consent was obtained. The study was approved by the local ethics committee.

2.2 Instruments

The Deliberate Self-Harm Inventory (DSHI; Cerutti et al., 2012; Gratz, 2001) is a 17-item, behaviorally based, self-report questionnaire developed by Gratz (2001) to assess deliberate self-harm. The DSHI is based on the conceptual definition of "deliberate self-harm" as the deliberate, direct destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough for tissue damage (e.g., scarring) to occur. This measure assesses various aspects of deliberate self-harm, including frequency, severity, duration, and type of self-harming behavior. The DSHI has high internal consistency (equal to 0.82) (Gratz, 2001).

The Eating Disorder Inventory-3 (EDI-3; Garner 2004; Giannini et al., 2008) is a scale measuring psychological traits relevant to individuals with eating disorders. The EDI-3 contains 91 items scored on a Likert scale with higher scores representing greater struggles within the domain measured. The EDI-3 has three eating disorder risk scales: Drive for Thinness (DT), Bulimia (B), and Body Dissatisfaction (BD). It also contains nine psychological scales: Low Self-Esteem

(LSE), Personal Alienation (PA), Interpersonal Insecurity (II), Interpersonal Alienation (IA), Interoceptive Deficits (ID), Emotion Dysregulation (ED), Perfectionism (P), Asceticism (A), and Maturity Fears (MF). The EDI-3 has good psychometric properties in the Italian context: the reliability coefficients of the scale range from .80 and .90 and test-retest reliability coefficients for the various composite scales are between .93 and .98 (Giannini et al., 2008).

The Inventory of Statements About Self-Injury (ISAS; Klonsky et al., 2009) is a self-report assessing the functions of NSSI. The ISAS measures 13 functions of NSSI: affect-regulation, antidissociation, antisuicide, autonomy, interpersonal boundaries, interpersonal influence, marking distress, peer-bonding, self-care, self-punishment, revenge, sensation seeking, and toughness. ISAS functions comprise two factors: the first factor represents "interpersonal functions" (e.g., interpersonal influence or peer-bonding) by which NSSI is socially reinforced, and the second factor represents "intrapersonal functions" (e.g., affect regulation or self-punishment) by which reinforcement is self-focused. The ISAS factors exhibit excellent internal consistency: coefficient alphas for the interpersonal and intrapersonal scales are .88 and .80, respectively.

The Symptom Checklist-90-R (SCL-90; Derogatis, 1994; Sarno et al., 2011) is a self-administered instrument used to assess the presence and intensity of 90 psychopathological and distress symptoms. The test lasts between 12 and 15 minutes and the age range of the test is 13 years and older. The 90 items are rated on a 5-point Likert scale indicating perceived discomfort during the last 7 days. The SCL-90R consists of nine subscales: Somatization (SOM), Obsessive–Compulsive (OBS), Interpersonal Sensitivity (INT), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), and Psychoticism (PSI). The three global indices of distress are Global Severity Index (GSI), positive symptom total (PST), and positive symptomatic distress index (PSDI). All subscales were demonstrated to have good convergent and discriminant validity and satisfactory internal consistency (equal to .94).

The Structured Clinical Interview of DSM-IV Axis II Disorders (SCID-II; First et al., 1997; Maffei et al., 1997) is a semistructured interview for making DSM-IV Axis II (personality) diagnoses. It is a two-stage process consisting of a questionnaire with 119 items and an interview. Each item answered with a "yes" in the questionnaire is further explored in the subsequent interview and evaluated as to whether the criteria for a personality disorder are met. The reliability and validity of SCID-II are described as good, with the interrater-reliability kappa coefficient ranging from 0.48 to 0.98 and internal consistency coefficients ranging from 0.71 to 0.94 (First & Gibbon, 2004). At the time of the study, the SCID-II was being revised and updated; however, given

that the personality disorders in DSM-5 were unchanged from those in DSM-IV, the current instrument was deemed suitable to assess them.

2.3 Procedure

Differences among groups of participants were examined using the ANOVA test. The Bonferroni procedure was used as post hoc analysis to the univariate.

3. Results

3.1 Characteristics of the four groups

Group 1 reported a mean of 4.03 (*SD* = 7.75) direct self-harming behaviors. The most common acts were cutting (58.3%), interference with wound healing (55.5%), severe scratching (38.3%), self-punching (36.1%), biting (30.5%), hair pulling (27.7%), carving and pinching skin (19.4%), burning (16.6%), ingesting dangerous substances (13.8%), and sticking needles (11.1%). The mean age of onset of self-injury was 19 years, with a minimum of 3 years to a maximum of 44 years. The most common reason to engage in those behaviors was found to be "reducing anxiety, frustration, anger, or other overwhelming emotions" (78%), whereas the least common reason was "creating a sign of friendship or kinship with friends or loved ones" (2.8%). Regarding the indirect forms of self-harm, all the participants in Group 1 presented eating disorders, with 36.1% having anorexia nervosa, 41.7% having bulimia nervosa, and 22.2% having binge-eating disorder. The three most frequent SCL-90 symptom dimensions presented in this group were Depression (M = 64.25), Anxiety (M = 62.75), and Psychoticism (M = 63.25; see Table I for more details). Moreover, all the participants of Group 1 presented a personality disorder, as assessed by SCID-II, with Borderline Personality Disorder (44.44%), Obsessive-Compulsive Personality Disorder (19.44%), and Depressive Disorder (5.55%) as the most common ones. Other personality disorders that were found to be present were Avoidant Personality Disorder (2.77%) and Dependent Disorder (2.77%). A total of 25% of Group 1 presented multiple clusters of personality disorders (see Table II).

Group 2 presented eating disorders, with 41.7 % having anorexia nervosa, 33.3 % having bulimia nervosa, and 25% having binge-eating disorder. The three most frequent SCL-90 symptom dimensions present in this group were Psychoticism (M = 67.27), Interpersonal Sensitivity (M = 66.55), and Phobic Anxiety (M = 64.27; see Table I for more details). Regarding SCID-II, all participants reported a personality disorder except for one participant, with Borderline Personality Disorder (25%), Histrionic Personality Disorder (11.12%), Narcissistic Personality Disorder (11.11%), and Obsessive–Compulsive Disorder (8.33%) as the most common ones. Other personality disorders that were found to be present were Passive–Aggressive Disorder (5.55%), Schizoid Personality Disorder (5.55%), Avoidant Personality

Disorder (2.77%), Dependent Personality Disorder (2.77%), and Depressive Personality Disorder (2.77%). A total of 22.2% of Group 2 presented multiple clusters of personality disorders (see Table II).

Group 3 did not present any direct or indirect forms of self-injury. The three most frequent SCL-90 symptom dimensions present in this group were Hostility (M=69.83), Interpersonal Sensitivity (M=65.75), and Phobic Anxiety (M=65.36; see Table I for more details). Regarding SCID-II, the most common personality disorders were found to be Borderline Personality Disorder (44.44%), Histrionic Personality Disorder (11.11%), Depressive Personality Disorder (8.33%), and Dependent Personality Disorder (8,33%). Other personality disorders that were found to be present were Avoidant Personality Disorder (5.55%), Antisocial Personality Disorder (5.55%), Obsessive–Compulsive Personality Disorder (2.77%), Passive–Aggressive Personality Disorder (2.77%), Paranoid Personality Disorder (2.77%), Schizoid Personality Disorder (2.77%), and Narcissistic Personality Disorder (2.77%) (see Table II).

Group 4 did not present any direct or indirect forms of self-harm, and did not show any clinical or personality disorder. No SCL-90 scale was above the cut-off, even though the highest averages were found to be Phobic Anxiety (M = 45.50), Hostility (M = 45.19), and Anxiety (M = 43.69).

Table 1. Mean, Standard Deviation and ANOVA With Fisher's F with Its Significance Value of SCL-90-R Scales in Group 1, Group 2, Group 3, and Group 4.

SCL-90 Scales*	Group 1		Group 2		Group3		Group 4		F	*p*
	M	SD	M	SD	M	SD	M	SD		
SOM	57.72	15.30	54.16	10.76	56.33	11.95	42.00	4.81	14.40	.00
OBS	61.02	16.49	60.69	12.30	54.66	8.31	40.44	4.95	25.83	.00
INT	61.22	15.59	66.55	10.79	65.75	10.66	41.69	4.44	39.59	.00
DEP	64.25	15.86	63.88	11.41	63.63	9.58	42.38	5.82	32.90	.00
ANX	62.75	15.62	59.80	10.50	61.13	8.75	43.69	4.32	25.08	.00
HOS	52.75	13.70	57.44	12.63	69.83	7.04	45.19	7.48	33.93	.00
PHOB	58.19	14.60	64.97	12.13	65.36	9.74	45.50	6.13	25.10	.00
PAR	55.69	15.64	61.41	10.93	63.86	9.76	41.83	7.96	26.74	.00
PSY	63.25	15.90	67.27	10.51	52.75	8.62	43.13	3.93	37.49	.00
GSI	62.80	15.94	64.55	10.91	63.72	9.77	40.83	5.86	37.51	.00
PST	62.58	15.70	65.22	10.90	64.33	8.30	38.55	8.75	46.09	.00
PSD	59.16	14.22	58.69	10.40	58.58	9.78	47.23	12.13	8.19	.00

Note. *N*=144; *nG1*=36; *nG2*=36; nG3=36; *n*G4=36; df=3;140.

*SOM=Somatization; OBS=Obsessive–Compulsive; INT=Interpersonal Sensitivity; DEP=Depression; ANX=Anxiety; HOS=Hostility; PHOB=Phobic Anxiety; PAR= Paranoid Ideation; PSY=Psychoticism; GSI=Global Severity Index; PST=Positive Symptom Total; PSD=Positive Symptomatic Distress Index.

Table 2. Frequencies of SCID-II Variables in Group 1, Group 2, Group 3.

SCID-II Scales	Group 1		Group 2		Group3	
	n	*f*	n	*f*	n	*f*
Avoidant	1	2,77	1	2,77	2	5,55
Dependent	1	2,77	1	2,77	3	8,33
Obsessive-Compulsive	7	19.44	3	8,33	1	2,77
Passive-Aggressive	0	0	2	5,55	1	2,77
Depressive	2	5,55	1	2,77	3	8,33
Paranoid	0	0	0	0	1	2,77
Schizotypal	0	0	0	0	0	0
Schizoid	0	0	2	5,55	1	2,77
Histrionic	0	0	4	11,11	4	11,11
Narcissistic	0	0	4	11,11	1	2,77
Borderline	16	44,45	9	25,0	16	44,44
Antisocial	0	0	0	0	2	5,55
NAS	0	0	0	0	0	0
More than one PD	9	25,0	8	22,22	3	8,33
No PD	0	0	1	2,77	0	0

Note. *n*G1=36; *n*G2=36; *n*G3=36.

3.1.2 Differences among the groups

The four groups did not differ significantly in terms of age (F = 0.72; p = .53). Instead, they differed significantly in terms of gender. A significantly higher number of females was found in the three clinical groups (Pearson $\chi 2$ = 23.02; p = .00).

3.1.2.1 EDI-3 scales

No statistically significant differences were observed between Group 1 and Group 2 on all EDI-3 scales (see Table III). However, it must be noted that the Low Self-Esteem Scale (LSE) was found to be the scale with the highest difference in means between Group 1 (M = 81.08) and Group 2 (M = 71.00) ($F_{(3,140)}$ =3.17, p = .07), along with Ineffectiveness Composite Scale (IC) (Group 1 M=82.39, Group 2 M=74.00; $F_{(3,140)}$ =2.34, p = .13)

Table 3. Mean, Standard Deviation and ANOVA With Fisher's F with Its Significance Value of EDI-3 Scales in Group 1 and Group 2.

EDI-3 Scales*	Group 1		Group 2		F	*p*
	M	SD	M	SD		
EDRC	77.86	23.56	76.42	19.32	.08	.77
DT	77.14	22.12	71.67	23.41	1.03	.31
B	73.14	28.20	64.14	37.14	1.34	.25
BD	72.75	27.65	71.92	24.73	.01	.89
LSE	81.08	22.44	71.00	25.50	3.17	.07
PA	80.72	21.22	75.44	26.77	.85	.35
II	65.72	25.75	56.31	29.83	2.05	.15
IA	69.11	27.93	71.00	27.33	.08	.77
ID	76.61	24.06	75.06	19.65	.09	.76
ED	66.83	28.18	60.22	35.40	.76	.38
P	77.28	27.62	71.44	27.07	.81	.36
A	77.94	25.75	78.83	24.40	.02	.88
MF	61.00	29.11	59.50	28.01	.05	.82
IC	82.39	20.26	74.00	25.91	2.34	.13
IPC	70.28	24.38	66.25	28.40	.41	.52
APC	75.56	25.82	71.92	24.17	.38	.53
OC	81.94	23.58	82.31	18.35	.00	.94
GMPC	81.42	21.01	77.42	23.19	.58	.44

Note. N=72; *nG1*=36; *nG2*=36; df=1;70.

* EDRC= Eating Disorder Risk; DT=Drive for Thinness; B=Bulimia; BD=Body Dissatisfaction; LSE=Low Self-Esteem; PA=Personal Alienation; II=Interpersonal Insecurity; IA=Interpersonal Alienation; ID=Interoceptive Deficit; ED=Emotion Dysregulation; P=Perfectionism; A=Asceticism: MF=Maturity Fears; IC=Ineffectiveness Composite; IPC=Interpersonal problems Composite (IPC); APC=Affective Problems Composite; OC=Over-Control; GMPC=Global Psychological Maladjustment Composite.

3.2.2 SCL-90-R Scales

Regarding the SCL-90-R scales, no statistically significant differences were found among Group 1, Group 2, and Group 3, although they showed differences from the control group (Group 4) with respect to the following scales: Somatization ($F_{(3,140)}$ = 14.40, p = .00; MG1 = 57.72; MG2 = 54.16; MG3 = 56.33; MG4 = 42.00); Interpersonal Sensitivity ($F_{(3,140)}$ = 39.59, p = .00; MG1 = 61.22; MG2 = 66.55; MG3 = 65.75; MG4 = 41.69); Depression ($F_{(3,140)}$ = 32.90, p = .00; MG1 = 64.25; MG2 = 63.88; MG3 = 63.63; MG4 = 42.38); Anxiety ($F_{(3,140)}$ = 25.08, p = .00; MG1 =

62.75; MG2 = 59.80; MG3 = 61.13; MG4 = 43.69); Phobic Anxiety ($F_{(3,140)}$ = 25.10, p = .00; MG1 = 58.19; MG2 = 64.97; MG3 = 65.36; MG4 = 45.5); and with respect to the following global indices: Global Severity Index ($F_{(3,140)}$ = 37.51, p = .00; MG1 = 62.80; MG2 = 64.55; MG3 = 63.72; MG4 = 40.83); Positive Symptom Total ($F_{(3,140)}$ = 46.09, p = .00; MG1 = 62.58; MG2 = 65.22; MG3 = 64.33; MG4 = 38.55); Positive Symptomatic Distress Index ($F_{(3,140)}$ = 8.19, p = .00; MG1 = 59.16; MG2 = 58.69; MG3 = 58.58; MG4 = 47.23).

Group 1 and Group 2 did not differ significantly in the Obsessive-Compulsive and Paranoid Ideation scales, while Group 1 differed from Groups 3 and Group 4, and Group 2 differed only from Group 4 in the same scales (OBS: $F_{(3,140)}$ = 25.83; p = .00; MG1 = 61.02; MG2 = 60.69; MG3 = 54.66; MG4 = 40.44; PAR: $F_{(3,140)}$ = 26.74, p = .00; MG1 = 55.69; MG2 = 61.41; MG3 = 63.86; MG4 = 41.83)

Group 4 differed significantly from Groups 1, Group 2 and Group 3 in the Hostility scale ($F_{(3,140)}$ = 33.93, p = .00; MG1 = 52.75; MG2 = 57.44; MG3 = 69.83; MG4 = 45.19). Lastly, no significant differences were observed between Group 1 and Group 2 in the Psychoticism scale. However, both groups differed from Group 3 and Group 4 in the same scale ($F_{(3,140)}$ = 37.49, p = .00; MG1 = 63.25; MG2 = 67.27; MG3 = 52.75; MG4 = 43.13).

3.2.3 SCID-II scales

Regarding SCID-II scales, Group 1 and Group 2 did not show significant differences, but they differed significantly from the control group in Dependent Personality Disorder ($F_{(3,140)}$ = 13.06; p = .00), Borderline Personality Disorder ($F_{(3,140)}$ = 27.07; p = .00), Paranoid Personality Disorder ($F_{(3,140)}$ = 5.52; p = .00), and Passive–Aggressive Disorder ($F_{(3,140)}$ = 10.27; p = .00), with a slight but not significant prevalence of Dependent Personality Disorder in Group 2 (MG1 = 1.75; MG2 = 2.47; MG3 = 1.83; MG4 = .14). Regarding Borderline Personality Disorder, Group 1 showed the highest mean (MG1 = 4.67; MG2 = 3.25; MG3 = 3.31; MG4 = .03). Also, Group 1 showed the highest mean in Paranoid Personality Disorder (MG1 = 1.31; MG2 = 1.00; MG3 = 1.06; MG4 = .14) and Passive–Aggressive Personality Disorder (MG1 = 1.78; MG2 = 1.69; MG3 = 1.28; MG4 = .14).

A significant difference was observed among Group 1, Group 3, and Group 4 regarding Avoidant Personality Disorder and Schizotypal Personality Disorder (Avoidant: $F_{(3,140)}$ = 9.98; p = .00; Schizotypal: $F_{(3,140)}$ = 7.46; p = .00). No significant differences were observed between Group 1 and Group 2 in the same scales. Regarding Avoidant Personality Disorder, Group 1 showed the highest mean (MG1 = 1.78; MG2 = 1.42; MG3 = .75; MG4 = .14), as well as in Schizotypal Personality Disorder (MG1 = 1.25; MG2 = .72; MG3 = .44; MG4 = .00).

Group 1 did not differ significantly from Group 2 and Group 3, whereas Group 2 differed significantly from Group 3 regarding Narcissistic Personality Disorder and Schizoid Personality Disorder (Narcissistic: $F_{(3,140)} = 17.12$; $p = .00$; Schizoid $F_{(3,140)} = 8.05$; $p = .00$). The means of both disorders were slightly but not significantly higher in Group 2 than in Group 1 (Narcissistic: MG1 = 2.08; MG2 = 2.89; MG3 = 1.14; MG4 = .08; Schizoid: MG1 = 1.03; MG2 = 1.36; MG3 = .31; MG4 = .03).

Group 1 and Group 2 differed significantly from Groups 3 and Group 4 regarding Depressive Personality Disorder ($F_{(3,140)} = 25.17$; $p = .00$) and Obsessive–Compulsive Personality Disorders ($F_{(3,140)} = 27.66$; $p = .00$). With respect to Avoidant Personality Disorder, Group 1 showed the highest mean (MG1 = 3.14; MG2 = 2.61; MG3 = 1.19; MG4 = .06), as well as in Obsessive–Compulsive Personality Disorder (MG1 = 2.75; MG2 = 2.19; MG3 = .44; MG4 = .03).

A significant difference was observed between Group 1 and Group 2 only with respect to Histrionic Personality Disorder ($F_{(3,140)} = 9.01$; $p = .00$), with a higher mean in Group 2 (MG1 = .89; MG2 = 2.08).

No significant differences were found among the four groups regarding Antisocial Personality Disorder ($F_{(3,140)} = 2.62$; $p = .053$; MG1 = .28; MG2 = .00; MG3 = .58; MG4 = .08) and Personality Disorder Non Otherwise Specified ($F_{(3,140)} = 1.00$; $p = .39$; MG1 = .08; MG2 = .00; MG3 = .00; MG4 = .00).

4. Discussion

Our findings highlight that patients presenting both direct and indirect self-injury and patients presenting only indirect self-injury seem to have more similarities than differences in terms of clinical and personality characteristics.

Compared to healthy controls, both showed more pathology on almost all measures. They showed higher clinically significant levels of somatization, interpersonal sensitivity, depression, general and phobic anxiety, together with more severity, intensity, and numbers of symptoms. Also, they presented more symptoms of dependent, borderline, paranoid, passive-aggressive, depressive, and obsessive-compulsive personality disorders. Compared to non-self-injurious patients, both groups reported higher clinically significant levels of psychoticism, from minor levels of interpersonal alienation to a full display of severe psychotic symptoms. They showed more symptoms of depressive and obsessive–compulsive personality disorders.

Patients with direct and indirect self-harm and patients with only indirect self-harm differed significantly in only one domain. While the first group reported almost no symptoms of histrionic personality disorder, the second group showed the same symptoms as the most

common ones among those of the various personality disorders. Furthermore, patients with direct and indirect self-injury and patients with only indirect self-injury presented the highest, although not significantly, difference in means in the dimension of ineffectiveness. In fact, the first group showed higher levels of low self-evaluation and of a sense of emptiness reflecting a basic deficit in personal identity than the second group. This is consistent with what Hooley and Franklin (2018) argue about self-identity (i.e., a positive view of the self) as a major barrier or protecting factor towards engaging in NSSI.

The similarities between patients with direct and indirect self-injurious behaviors and patients with only indirect self-injurious behaviors seem to be in accordance with the results of previous research by St. Germain & Hooley (2012). However, unlike this study just mentioned, the absence of significant difference between the two groups (except for histrionic personality disorder) in our research do not allow us to come to similar conclusions indicating a "distinct condition model" (Hooley et al., 2014). Rather, this data seems to support evidence for the hypothesis that direct and indirect self-harm are related behaviors lying on a same psychopathological continuum, while not giving a clear evidence even of a "severity model" (Hooley et al., 2014), as patients with both direct and indirect self-harm showed just partially and not significantly higher levels of psychopathology and impairment in respect to those engaging in only indirect forms of self-harm.

Nevertheless, on closer inspection, the finding that patients presenting both direct and indirect self-harm appeared to have higher although not significantly levels of basic deficit in personal identity (low self-esteem and a sense of emptiness) and no symptoms of histrionic personality disorder in respect to patients presenting only indirect self-harm suggest that those who engage in NSSI, in addiction to indirect forms of self-injury, do have "something more" from a clinical point of view. This seems to be in accordance with previous research by Hooley et al. (2010) and St-Germain & Hooley (2014), demonstrating that people who hold core belief about being bad, flawed or defective may have less resistance to the idea of direct forms of self-injury than people who have selfschemas that are more benign.

Developmental issues could play a relevant role in determining the pathways to these core beliefs, and ultimately to NSSI. Recent studies have highlighted the primary role of childhood maltreatment in developing NSSI in adulthood in both clinical and nonclinical populations (Liu et al., 2018; Newbury et al., 2018). This makes us argue that a more severe history of childhood trauma could be a key factor to achieve a better understanding of this "something more" in direct self-injurers. However, further research is needed.

Besides all this and with respect to the absence of symptoms of histrionic personality disorder in patients with both direct and indirect self-injury, another of our previous study has already found a negative correlation between NSSI behaviors and histrionic personality disorder (D'Agostino et al., 2018). This data is quite enigmatic from an interpretative point of view. We argue that it can be seen as a proof of the fact that nonsuicidal self-injury has nothing to do with superficial attention-seeking behaviors but rather it is a much more complex strategy for emotion regulation (Claes et al., 2010; Klonsky, 2007; Nock & Prinstein, 2004; Nock, 2014; Sorgi et al., 2020), as also reasons reported by NSSI patients in our sample clearly highlight. However, a further investigation of this aspect is needed.

The study presents some limitations. The number of participants in each group was limited and it would be advisable to repeat the study on a larger sample. Moreover, the indirect forms of self-injury taken into account in this study are limited to eating disorders and do not comprehend all the indirect self-injurious behaviors, which may be of different types (e.g., drinking, smoking, reckless driving; Nock 2010) thus entailing different risks for the people. Ultimately, as already pointed out, other variables should also be included to try to better clarify the psychopathological dimensions underlying direct and indirect self-harming behaviors.

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