Non-Suicidal Self-Injury in Trans People: Associations with Psychological Symptoms, Victimization, Interpersonal Functioning and Perceived Social Support

Abstract

Introduction. There is a paucity of systematic research in the area of non-suicidal self-injury (NSSI) in trans people.

Aims. To investigated the prevalence of non-suicidal self-injury in trans people and the associations with intra- and interpersonal problems.

Methods. Participants were 155 untreated individuals with a diagnosis of Transsexualism (according to ICD-10 criteria) attending a national gender identity clinic.

Main Outcome Measures. All participants completed the Self-Injury Questionnaire, The Symptom Checklist-90-Revised, The Rosenberg Self-Esteem Scale, The Hamburg Body Drawing Scale, The Experiences of Transphobia Scale, The Inventory of Interpersonal Problems-32 and The Multidimensional Scale of Perceived Social Support.

Results. The sample consisted of 66.5% trans women and 33.5% trans men and 36.8% of them had a history of engaging in NSSI. The prevalence of NSSI was significantly higher in trans men (57.7%) compared to trans women (26.2%). Trans individuals with NSSI reported more psychological and interpersonal problems and perceived less social support compared to trans individuals without NSSI. Moreover, the probability of having experienced physical harassment related to being trans was highest in trans women with NSSI (compared to those without NSSI). The study found that with respect to psychological symptoms, trans women reported significantly more intrapersonal and interpersonal symptoms compared to trans men. Finally, the results of the

regression analysis showed that the probability of engaging in NSSI by trans individuals was significantly positively related to a younger age, being trans male and reporting more psychological symptoms.

Conclusions. The high levels of NSSI behavior and its association with interpersonal and interpersonal difficulties and lack of social support needs to be taken into consideration when assessing trans individuals. The effect of cross-sex hormones and sex reassignment surgery on psychological functioning, including NSSI behavior, as part of the transitional journey of trans individuals should be explored in future studies.

Keywords: trans, transsexualism, gender dysphoria, NSSI, victimization, interpersonal functioning, social support

Introduction

This study aimed to investigate the association between non-suicidal self-injury (NSSI) and psychological symptoms, victimization, interpersonal problems and perceived social support in individuals with a diagnosis of transexualism. Transsexualism is a formal diagnosis of the International Classification of Disease (ICD-10) [1] which describes individuals who present with discomfort or distress caused by the discrepancy between a person's gender identity (their psychological sense of themselves as men or women) and the sex they were assigned at birth (with the accompanying primary/secondary sexual characteristics and/or expected social gender role). Sometimes, the distress is sufficiently intense that individuals undergo transition from one point on a notional gender continuum to another – most commonly from Male-to-Female (people known as trans women or trans female) or Female-to-Male (people known as trans men or trans male). This typically involves changes to social role and presentation, and may necessitate their taking cross-sex hormones and/or having sex reassignment surgery [2,3]. Cisgender people (as a complement to trans people) are individuals who have a match between the gender they were assigned at birth, their bodies, and their personal identity.

The ICD-10 diagnosis for transsexualism is under-review. It is proposed that the ICD-11 recognizes individuals who do not identify as either male or female and are therefore not part of the gender binary (such as gender queer) [4]. This has been acknowledged in the DSM-5, where the diagnosis of gender dysphoria incorporates all individuals on the gender spectrum [5].

Non-suicidal self-injury refers to the direct and intentional injury of one's own body tissue without suicidal intent, such as cutting, burning, and hitting oneself [6] and has been found to function as a way to regulate emotions and self-punishment [7-9]. NSSI was recently included

as a Non-Suicidal Self-Injury Syndrome in section III of the DSM-5 [5]. While in adolescents, the prevalence rates of NSSI range between 14-39% in the community and between 40-61% in psychiatric samples [10,11], for adults, the prevalence rates of NSSI are estimated to be around 4% in the community and around 21% in psychiatric units [11], indicating a decrease in NSSI behavior with age. In the general population, the prevalence of NSSI in women and men is rather similar; whereas in the psychiatric population NSSI is more prevalent in females compared to males [12,13].

Recent research suggests that lesbian, gay, bisexual, and transgender (LGBT) individuals are at greater risk for mental health problems, including suicidal and non-suicidal self-injury [14-17]. Mustanski and Liu [17] investigated a sample of 237 LGBT youths (age range 16-20 years; 8.8% self-identified as trans) and reported that 11 (52.4%) out of 21 trans individuals engaged in a suicide attempt during their life-time and 4 (19%) during the past year. Factors which were related to a life-time history of attempted suicide were: hopelessness, depression, conduct disorder symptoms, impulsivity, victimization, age of first same-sex attraction, and low family support [17].

Concerning NSSI, Walls et al. [18] investigated a sample of 265 LGBT youths (age range 13-22 years; 4.9% self-identified as trans) and reported that 6 (47.2%) out of 13 trans individuals in their study of 265 LGBT youths stated that they had engaged in self-cutting behavior during the past year, with younger participants more likely to have engaged in NSSI than older adults (56.5% vs. 40.8%). Additionally, NSSI was found to be more common in trans men than trans women, with cutting as the most common type of NSSI found, particularly in the arms and wrists [19]. Nickels et al. [20] investigated the functionality of self-cutting in lesbian, gay, bisexual and

trans (LGBT) individuals and found that, similar to non-trans people, emotional release, stimulation, and self-punishment were the most common functions of NSSI in trans individuals.

Factors that are known to increase the risk of engaging in NSSI in the general and psychiatric populations are childhood traumatic experiences, psychological symptoms (such as anxiety, depression), body dissatisfaction, identity problems, and interpersonal dysfunction [21-23]. Traumatic experiences and the subsequent psychological reaction can cause stress, causing emotions such as anxiety and depression, and behaviors like NSSI and suicidal behaviors (i.e., stress model) [24]. Protective factors that appear to prevent individuals from engaging in NSSI are social support from parents and friends (i.e., buffering hypothesis of social support) [24], as well as good coping skills [26,27].

Similar findings were reported in a sample of LGBT youth. For example, Walls et al. [18] showed that peer victimization, homelessness, and depression increased the risk of engaging in self-cutting, whereas higher age and having knowledge of a supportive adult decreased the risk. Additionally, House et al. [15] found that experiences of interpersonal trauma and sexual discrimination were associated with increased levels of both non-suicidal and suicidal behavior in a sample of LGTB adults (age range 18-80 years; 14.6% transgender).

The aforementioned studies largely consisted of small numbers of self-identified trans individuals and did not control for stage of transition or gender (natal or desired gender). They are, however, the only studies investigating psychological and interpersonal symptoms in trans people with and without NSSI.

Aims

Therefore, the aim of the current study was to investigate the rates of NSSI in a large sample of trans individuals, who have received a diagnosis of Transsexualism according to the ICD-10 [1] and who were at the initial stage of their transitional process, therefore they had not been treated with cross-sex hormones by the clinic. The study will investigate known factors associated with NSSI behavior in the general population such as psychological symptoms, victimization, interpersonal functioning, and perceived social support and will compare those variables between trans individuals who do and do not engage in NSSI, taking into account gender status (trans men/trans women), and the interaction between the presence or absence of NSSI and gender status. Based on the literature regarding NSSI and transsexualism, it is hypothesized that NSSI will be more prevalent in trans men and younger participants; will be displayed primarily on hands and arms; will be triggered by negative affect [15,18]; and will serve affect-regulation and self-punishment functions [20]. Additionally, it is hypothesized that individuals with NSSI will show higher levels of psychopathology, victimization, interpersonal problems and less perceived support from others [21,23]. Comparing trans women with trans men, it is hypothesized that anxiety and depression will be higher in trans women [28-32]. However, with respect to victimization, interpersonal problems and perceived social support no clear hypotheses with respect to gender are made, nor is a hypothesis made for the interaction effect of NSSI and gender on the aforementioned measures.

Methods

Participants

The sample consisted of all individuals who completed the assessment process at a national gender identity clinic in the United Kingdom between January and December 2013. All consecutively admitted individuals who fulfilled diagnostic criteria for transsexualism (F64.0) as defined by the ICD-10 [1] were included in this study. All individuals completed a battery of questionnaires prior to their clinical assessment. In order to receive a diagnosis, individuals were assessed by two independent senior clinicians with experience in the field of transgender health and who worked at the national gender identity clinic. Following independent assessment, both clinicians reach an ICD-10 diagnosis [1]. In case of disagreement regarding a diagnosis of transsexualism, a third assessment was carried out by another senior clinician. Only individuals who fulfilled diagnostic criteria for transsexualism made by two independent clinicians were included in this study. The study was approved by the NHS local research ethics committee.

Main Outcome Variables

Self-cutting and its characteristics were assessed by means of the **Self-Injury Questionnaire** (SIQ) [33]. Participants were asked whether they had ever deliberately cut themselves (yes/no) and if they had, how long ago they last did this (in the last week, month, several months ago, more than a year ago, or never). If they injured themselves during the last week or month, they were also asked to indicate which body parts were injured; how many days/month and times/day the cutting occured; and how often and how much pain they felt during the cutting. Additionally, they had to specify what kind of emotions they felt immediately before and after the self-cutting (e.g., relief, anger, sadness), as well as the functions of the cutting on a 5-point Likert scale ranging from 1 (‘not at all’) to 5 (‘very much’). Finally, they also had to indicate whether they planned the behavior, whether they realized how it came about, if they took care of their wounds and if they hid the cutting from others [33].

The **Symptom Checklist-90-Revised** (SCL-90-R) [34] is a 90-item self-report symptom inventory to measure psychological symptoms and psychological distress. Items are rated on a 5-point Likert scale ranging from 0 (‘Not at all’) till 4 (‘Extremely’). The SCL-90-R assesses psychological distress in terms of nine primary symptom dimensions and three summary scores (global scores). The symptom dimensions are labeled Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. The global measures are referred to as Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST). Good construct validity and reliability has been established for the SCL-90-R [35] and it has been used frequently across the literature on trans individuals [36-40].

The **Rosenberg Self-Esteem Scale** [41] is a self-report measure of global self-esteem. Items are rated on a 4-point rating scale ranging from 0 (‘Strongly disagree’) to 3 (‘Strongly agree’). Its total score is calculated by summing the item scores with higher scores indicating higher self-esteem.

The **Hamburg Body Drawing Scale** (HBDS) [42] is a pictorial measure that asks participants to indicate how (dis)satisfied they are with specific parts of their body. Thirty-three different body characteristics (e.g., voice, skin, arms, chest or breasts) are identified on a body drawing and participants are asked to rate each on a 5-point Likert scale ranging from 1 (‘very satisfied’) to 5 (‘very dissatisfied’). In addition, they are asked to give a rating for their overall whole body (dis)satisfaction and “other”, if applicable.

The **Experiences of Transphobia Scale** [43] assesses experiences of discrimination or victimization on the basis of gender identity or gender presentation. The questionnaire was based

on the Transgender Violence Study and measured people's lifetime experiences of violence and harassment and experiences of any form of economic discrimination as a result of being trans (e.g., verbal abuse, physical abuse, fired from a job, problems getting a job, and problems getting health or medical services due to gender identity or presentation). All 5 items are to be rated on a 4-point Likert scale ranging from 0 ('Never') to 3 ('Several times').

The **Inventory of Interpersonal Problems-32** (IIP-32) [44] consists of 32 items to be rated on a 5-point Likert scale ranging from 0 ('Not at all') to 4 ('Extremely'). It consists of eight subscales of interpersonal problems: Hard to be Assertive, Hard to be Sociable, Hard to be Supportive, Hard to be Involved, Too Dependent, Too Aggressive, Too Caring, and Too Open. Higher subscale scores indicate greater interpersonal difficulties. The IIP-32 is a shortened version of the original questionnaire, yet the psychometric properties are retained; a confirmatory factor analysis demonstrated high reliability with alpha coefficients of .70 to .88 [44].

The **Multidimensional Scale of Perceived Social Support** (MSPSS) [45] is a 12-item, self-report scale designed to tap social support from family, friends, and significant others. Items are rated on a 7-point Likert scale ranging from 1 ('very strongly agree) to 7 ('very strongly disagree'). The instrument includes three subscales to address these three types of support (family, friends, significant others). The mean total and subscale scores range from 1 to 7, and a higher score indicates greater perceived social support.

Analyses

All data analyses were performed by means of SPSS 22 [46]. To determine the prevalence of NSSI and its characteristics descriptive statistics were used. To investigate the association

between NSSI and gender, the Chi-Square statistic was calculated. MANCOVAs were applied with psychological symptoms, victimization, interpersonal problems, and social support as dependent variables and the presence or absence of NSSI and gender (trans men/trans women) and their interaction as independent variables, controlled for age. Finally, a logistic regression analysis was performed to investigate which variables predicted the presence or absence of NSSI in trans participants when taking all variables into account. The level of significance used was $p < 0.05$.

Results

During the recruitment period 272 individuals were referred to the clinic, of whom 155 (57%) completed their assessment and fulfilled the diagnostic criteria for transsexualism according to the ICD-10 [1]. One hundred and seventeen individuals were excluded, of whom 31 (11.4%) did not attend, 42 (15.4%) did not have their assessment completed during the study period, 15 (5.5%) had socially transitioned and were on cross-sex hormone treatment before referral; they were referred to the clinic for a second opinion regarding sex reassignment surgery (SRS), and 29 (10.6%) did not fulfill a diagnosis of transsexualism. Of the total sample, 52 (33.5%) participants were trans male and 103 (66.5%) were trans female. The socio-demographic variables of the trans men and trans women are displayed in Table 1. The mean age of the participants was 34.52 years (SD = 14.21). Trans men were significantly younger than trans women [$F(1, 153) = 49.94$, $p < .001$]. With respect to civil status, the majority of participants were single (64.7%) or divorced (13.1%, TF>TM). Concerning employment level, the majority of the participants were employed (44.5%), followed by unemployed (22.6%, TF>TM) or student

(13.5%, TM>TF). The mean age of coming out was 27.15 years (SD = 13.61), with trans men coming out at a younger age than trans women [$F(1, 119) = 30.54$, $p < 0.001$].

NSSI in trans men and trans women

Overall, 36.8% (N=57) of the trans participants had engaged in NSSI (i.e., self-cutting), whereas 63.2% (N=98) never had. Participants who engaged in NSSI ($M_{age} = 26.98$, $SD = 9.77$) were significantly younger than participants who did not report engaging in NSSI [($M_{age} = 38.91$, $SD = 14.58$), $F(1, 153) = 30.20$, $p<.001$]. Additionally, a significant association was found between gender (trans men versus trans women) and the presence or absence of NSSI. The results showed that 30 of the 52 trans men (57.7%) and 27 of the 103 trans women (26.2%) had a history of engaging in cutting. Based on these results, it can be concluded that the prevalence of life-time NSSI is significantly higher in trans men compared to trans women ($\chi^2(1) = 14.73$, $p < .001$). Overall, 13 participants (10 trans men and 3 trans women) reported to have engaged in NSSI very recently (within the last week or month) and these participants completed the second part of the questionnaire which collects more detailed responses about their NSSI behaviour.

Specific NSSI behaviors

Of the 13 participants who had recently engaged in NSSI, most injured their arms, hands, fingers, and nails (61.5%), followed by their legs, feet, toes (15.4%) or a combination of different body parts (2.,1%). With respect to NSSI frequency, the majority of the participants engaged in self-cutting 1-5 days a month (75%) and 1 to 2 times a day (58.3%). Self-cutting was often preceded by feelings of sadness ($M = 4.36$, $SD = 0.92$), anger at oneself ($M = 4.18$, $SD = 1.25$), anxiety ($M = 3.45$, $SD = 1.75$), and anger at others ($M = 3.36$, $SD = 1.63$). After self-cutting,

feelings of relief (*M* = 3.83, *SD* = 1.26), sadness (*M* = 3.50, *SD* = 1.88) and anger at oneself (*M* = 3.25, *SD* = 1.66) were most prevalent.

The most important functions of NSSI were "To avoid/suppress painful negative feelings" (*M* = 3.67; *SD* = 1.67), "To avoid/suppress painful images/memories" (*M* = 3.64, *SD* = 1.63), "To avoid/suppress suicidal thoughts" (M =3.42; SD = 1.38) and "To punish myself" (*M* = 3.33, *SD* = 1.67). The majority of participants did not plan their self-cutting (75%) and were often aware how the self-cutting came about (so no dissociative state; 41.7%). Finally, 50% of the participants 'seldom' or 'never' took care of their wounds and 83.3% hid their wounds from other people.

Clinical Symptomatology

With respect to clinical symptomatology, analyses of the 155 trans individuals showed a significant main effect for NSSI [Wilks' λ= .85, $F(10,140) = 2.50$, $p < .01$] and for gender [Wilks' λ = .86, $F(10,140) = 2.29$, $p < .05$], without a significant interaction effect [Wilks' λ = .97, $F(10,140) = 0.37$, *ns*]. Trans women reported significantly higher scores on paranoid ideation, interpersonal distrust, anxiety, depression and obsessive-compulsive complaints compared with trans men. Moreover, trans individuals who reported engaging in NSSI had significantly higher scores on all psychological symptoms, as measured by the SCL-90-R, compared to participants without NSSI (see Table 2).

On the Rosenberg Self-Esteem Scale, there was only a significant main effect for gender, but not for NSSI, which indicates that trans women reported a significantly lower level of self-esteem compared to trans men. The analysis also showed that trans individuals with and without NSSI did not significantly differ with respect to self-esteem (see Table 2).

Finally, with respect to the total body dissatisfaction score, the results showed main effects for NSSI and for gender, but no significant interaction effect (see Table 2). Trans women reported significantly more body dissatisfaction compared to trans men based on the global HBDS score. On the item level, trans women disliked their hair, armpit hair, pubic hair, feet, forehead, nose, chin and skin significantly more than trans men. Additionally, trans participants who engage in NSSI reported significantly more body dissatisfaction than those without NSSI. On the item level, participants who engage in NSSI disliked their voice, chin, and (upper) arm more than participants who did not engage in NSSI.

Transphobia

On the transphobia total score, there was no significant main effect of NSSI or gender, or a significant interaction. However, on the item level, there was a significant interaction between NSSI and gender with respect to physical abuse (see Figure 1). In trans men, the probability to have been a victim of physical abuse is similar in the NSSI and non-NSSI groups; however, in trans women the probability to have been a victim of physical abuse is much higher in the NSSI compared to the non-NSSI group [$F(1,147) = 6.36$, $p < .05$] (Table 3).

Interpersonal Problems

With respect to interpersonal problems, there was a significant main effect for NSSI [Wilks' $\lambda = .90$, $F(8,141) = 1.88$, $p < .06$] and gender [Wilks' $\lambda = .86$, $F(8,141) = 2.52$, $p < .05$], but no significant interaction [Wilks' $\lambda = .96$, $F(8,141) = 0.75$, *ns*]. Specifically, trans women were found to find it harder to be assertive, were too dependent and too caring as compared to trans men. Furthermore, trans individuals with NSSI reported that they find it harder to be

assertive and sociable and that they are more aggressive than participants who do not engage in NSSI (see Table 3).

Perceived Social Support

With respect to perceived social support, there was only a significant main effect for gender [Wilks' $\lambda = .95$, $F(3,148) = 2.55$, $p < .06$] (see Table 3). Trans men received significantly more social support from family and significant others than trans women. With respect to NSSI, participants with NSSI reported less support from their family compared to patients without NSSI ($p < .07$).

Prediction of NSSI in trans participants

A logistic regression analysis was performed to find out which variables predicted the presence of NSSI, while taking into account all variables under study (which differentiated participants with and without NSSI). Overall, a younger age, being trans male and reporting more clinical symptoms (psychoneuroticism) were the significant predictors of NSSI in trans participants (see Table 4).

Discussion

The sample of the present study consisted of individuals referred to a national gender clinic who fulfilled diagnostic criteria for transsexualism according to the ICD-10 [1] and who were at the initial stage of their transitional process. The study investigates whether psychological symptoms, victimization, interpersonal problems, and (lack of) perceived social support in the studied population were significantly related to gender and the presence or absence of NSSI. This is the largest study of its kind to date, with 155 trans participants, of whom 66.5% were trans women and 33.5% were trans men.

The study found that with regards to psychological symptoms, trans women reported significantly more intrapersonal (e.g., anxiety, depression) and interpersonal symptoms (e.g., interpersonal sensitivity) as well as lower levels of self-esteem and high levels of body dissatisfaction compared to trans men, in line with findings of previous studies [28-30,32,47,48]. The high levels of psychological symptoms found in trans women may be a reflection of the lack of perceived social support from family and significant others compared to trans men, as found in this and other studies [14,49]. Although this can be explained by the fact that cis males generally receive less social support from significant others than cis females [49,50], it is likely to be the result of the high levels of stigmatization of gender nonconformity among men compared to women [48]. Trans women (even more than trans men) face systematic devaluation as a result of social stigma attached to their gender nonconformity. This stigma will increase rates of psychological distress in trans individuals (minority stress model) as well as these individuals' body dissatisfaction, which can partially be moderated by social support [48], also called the buffering hypothesis of social support [25]. The higher level of stigmatization in trans women,

combined with a lower level of social support, can thus partially explain the higher level of symptomatology in trans women.

In relation to body dissatisfaction the study found that trans women were particularly dissatisfied with their (armpit/pubic) hair, forehead, nose, chin and skin. This could be related to the fact that these facial features tend to be more prominent in cis males and are therefore visible features of their birth gender and may be a source of concern with regard to successfully passing as a member of their desired gender. Moreover, treatments to transition, including hormone treatment and sex reassignment surgery do not exert a major change in these facial features. Furthermore, the internalisation of the "thin ideal" in our society (the message communicated through media that a woman equals thinness) may affect the way trans women see themselves as individuals. This can make trans women particularly susceptible to develop body dissatisfaction, which may affect the way they internalize themselves as female. As a consequence due to their desire to not only achieve a congruent body, but also one that conforms to the socially promoted thin ideal and potentially improve their ability to pass in their expressed gender, they may be more critical about their bodies than trans men.

Interestingly, in spite of the high levels of psychological symptoms among trans women, the study found that cutting was more prevalent among trans men, a finding also recently reported by Skagerberg et al. [19] when investigating a population of children with gender dysphoria. Cutting has also been found to be significantly more prevalent among cis women than cis men [51] which may indicate that expressions of distress by both trans men and trans women follow the pattern according to birth gender. Of the 155 trans participants, 36.8% reported a lifetime history of self-cutting behavior and NSSI was more prevalent in younger participants. A closer inspection of the self-cutting behavior showed that most participants cut their arms [19]

and injured themselves 1 to 5 days a month. Anger and sadness were found to most often preceded self-cutting, followed by relief after self-cutting. The most important functions of self-injury were to suppress/avoid negative thoughts/images, negative feelings and suicidal thoughts, followed by punishing oneself. This is consistent with other research that has found that emotion-regulation and self-punishment are often described as the most important functions of NSSI in general populations [8,9] as well as in LGBT populations. For example, Nickels et al. [20], in the only study investigating NSSI in a sample that included trans participants, found that, overall, in LGBT people emotional release was the most important function of NSSI, followed by stimulation and self-hate. However the study only included 13 self-diagnosed trans individuals. Additionally, NSSI as a way to express self-hate or self-punishment, can also be related to internalized feelings of shame, which is considered as a potential psychological outcome of stigma [52]. Given that transgender individuals often experience stigma (due to gender nonconformity), NSSI can be a way to express their feelings of shame. According to Longhofer [52] behavior which is clearly associated with shame, "is the inability to respond, or to respond in exclusively bodily ways (i.e., sweating, blushing) (p. 300), and maybe also include NSSI. Moreover, the fact that NSSI is also used as a way to suppress/avoid suicidal thoughts is not surprising, given that many trans people report suicidal thoughts and behaviors [15,53-55].

This study also investigated whether NSSI status and its interaction with gender significantly influenced psychological and interpersonal problems. With respect to psychological symptoms, trans people with a history of NSSI scored significantly higher on all intra- and interpersonal symptoms compared to people without NSSI. Trans participants with NSSI also disliked their body more than those without NSSI. It may indicate that those trans individuals who experience higher body dysphoria cope with these feelings through self-injury. However, the cross-sectional nature of this study does not preclude a conclusion to be drawn regarding the

direction of effects; that is, whether the negative attitude towards their body precedes or follows the NSSI (or both). This is a worthwhile area of further study as it may potentially lead to the development of specific therapeutic treatment aiming at decreasing self-harm and increasing coping skills.

With regard to interpersonal functioning, both the level of perceived social support and interpersonal functioning was investigated in this study. Trans women reported finding it hard to be assertive and being too dependent and too caring. Those characteristics may make individuals more vulnerable to develop psychological problems, particularly when going through the transitional process as it requires good interpersonal skills to deal with change. This may indicate that interventions aiming at improving interpersonal skills may help trans individuals at risk of developing psychological problems when going through the transitional process [56]. When examining trans individuals with NSSI, the study found that they reported less social support from family members compared to individuals without NSSI. Moreover, trans people with NSSI reported finding it harder to be assertive and social, and were found to be more aggressive compared to trans people without NSSI. It is possible that an aggressive style of interaction and aggressive behavior develops as a means of self-protection and as a result of being at the receiving end of others' unsupportive or hostile reactions. Indeed, if experiences of harassment are linked to these findings, trans women with NSSI are found to have a higher probability of having experienced physical abuse due to trans status than those without NSSI.

This study is the first to systematically investigate, in detail, the associations between trans people, NSSI, and intra- and interpersonal problems. The findings are important in highlighting the different experiences and coping mechanisms of trans women and trans men. The sample consisted of trans individuals who were at the start of the process of gender transition and therefore these findings may not reflect the experiences of trans people at different stages of

their transition or individuals who have transitioned many years ago. Clinical experience suggests that NSSI behavior reduces as individuals move through the transitional process towards expressing one's gender identity. Future studies may want to investigate this further by comparing NSSI behavior at different stages of the transitional process, which may include treatment with cross-sex hormones and sex reassignment surgery [2,3,57]. Only one type of NSSI (cutting) was assessed and although evidence shows that this is the most prevalent form of NSSI, a more in depth study including other forms of NSSI in this population may be warranted. Finally, only the lifetime prevalence of NSSI was studied, due to a small number of recent NSSI behaviors. Future studies, therefore, need to include trans individuals with recent as well as lifetime NSSI. Overall, this study highlights that the treatment of trans individuals needs to take into account their complex intra- and interpersonal functioning. In particular, the fact that trans women have higher levels of general psychopathology and interpersonal problems. Young trans men show high levels of engaging in NSSI behaviour. Expressions of distress by both trans men and trans women tend to follow the patterns of birth gender and future research could look what effect hormone treatment would have on NSSI behaviour as hormones can affect emotional expression. Psychological treatments should be tailored to each individual bearing in mind the aforementioned findings. Since NSSI was found to be associated with an increased level of psychopathology, body dissatisfaction, and perceived lack of social support, clinical interventions, including family therapy aiming at increasing social support and at improving body satisfaction may reduce NSSI behavior and improve outcomes in this extremely vulnerable group of individuals. Many trans people would like family therapy to be part of their treatment pathway, although very few adult gender identity clinic services offer this treatment modality [58,59].

Conclusions

Trans individuals with NSSI reported more psychological and interpersonal problems and perceived less social support compared to trans individuals without NSSI. The probability of having experienced physical harassment related to being trans was highest in trans women with NSSI (compared to those without NSSI); whereas for trans men the presence/absence of NSSI was not associated with a physical harassment history. Regarding psychological symptoms, trans women reported significantly more intrapersonal (e.g., anxiety, depression) and interpersonal symptoms (e.g., interpersonal sensitivity) compared to trans men. The probability of engaging in NSSI by trans individuals was significantly positively related to a younger age, being trans male and reporting more psychological symptoms. These findings need to be taken into account when providing psychological treatment and support for this vulnerable group of individuals.

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Figure 1. Associations between levels of physical abuse and presence of NSSI for trans male and trans female individuals