

Original research

Could a focus on trauma exposure improve the identification of patients at particularly high risk of suicide?

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Submitted to SOL: January 21st, 2015; accepted: July 24th, 2017; published: August 13th, 2017

Abstract: *Objectives:* An association between serious trauma exposure and suicidality is well documented. The aim here is to test psychological assessment instruments for their ability to discriminate suicidal and non-suicidal patients within a psychiatric population. *Method:* Using a case-control design, two patient groups from outpatient clinics with and without suicide attempts were assessed. *Results:* High levels of traumatization, depression, symptoms and personality disorder were found in both groups, generally being higher in the suicide attempt group than in the non-suicide attempt group. This reached statistical significance for current suicide risk ($p = .002$) and sexual assault ($p = .027$). *Conclusion:* Two tests appear to identify patients at increased risk for suicide attempts, the Suicide Behaviors Questionnaire (SBQ-R) and the Childhood Trauma Questionnaire (CTQ), sub-scale sexual assault in childhood.

Keywords: psychological trauma, trauma exposure, suicide attempt, suicide assessment, sexual assault.

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In general, a significantly increased suicide risk has been found among psychiatric patients compared to the general population (Bertolote et al., 2003). In Denmark the suicide rate for individuals who have been hospitalized in a psychiatric ward has been reported to be elevated by an average factor of 20 compared to the general population (Nordentoft, 2007). The suicide risk varies, however, both within and between different diagnostic groups, and often it can be difficult to determine for whom, and when, the risk of suicide is most acute. There is, therefore, a serious need for instruments which could improve the quality of suicide risk assessment in a psychiatric population.

Many studies have found significant relations

between exposure to early trauma and high suicide risk later in life, this being particularly true for children maltreated and/or exposed to sexual and physical assault (Miller et al., 2013; Stein et al., 2010). A study by Read, Agar, Barker-Collo, Davies & Moscowitz (2001), using outpatient files, found childhood abuse to be the most significant predicting factor for current suicide risk. Also for persons exposed to trauma later in life and diagnosed with PTSD, elevated incidences of suicidality are found when compared to control groups (Christoffersen, 2013; Krysinska & Lester, 2010). Similarly, an association was found between exposure to traumatic life events and the subsequent development of depression (Kendler et al., 2000; Suliman et al., 2009; Kendler et al., 1999), depression often being linked to suicidal behaviour. Theorists and researchers in developmental psychology, neuropsychology and neuropsychiatry have provided explanatory models that contribute

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to an understanding of the relationship between exposure to trauma or negative life events and suicidality. Trauma exposure has thus been linked to interference with fundamental emotional attachment, and with damage to memory, cognitive functioning and the basic affect regulation system (Anstorp et al., 2007; Kearney et al., 2010; Schore, 2002; Toth & Cicchetti, 1998; van Heeringen, 2002). A particularly central issue related to the effect of trauma and negative life events is disruption of the capacity for attachment and affect regulation, and research has found that poor quality of early attachment appears to negatively influence brain development and function (Shore, 2002; Siegel, 2002). Negative effects also include the regulation of sleep and emotions, as well as the mental ability to create a psychological overview and cognitive meaning and to target behavior, all of which are factors that are centrally related to the development of suicidal behavior. When trauma exposure is repeated and continues over time, as in the so-called "complex PTSD" (Herman, 1992), there is an accumulation of negative effects, leading to vulnerability and a declining ability to modulate acute stress reactions (Bateman & Fonagy, 2004; O'Donnell et al., 2004).

On this basis, the development of suicidal behavior can be understood as an interaction between genetic predisposition, biological vulnerability of the nervous system, childhood environmental factors and adult life conditions, including the levels and sum of stress and trauma throughout life. These relationships are similarly found in the development of PTSD (van der Kolk et al., 2007).

These findings imply that better identification of trauma exposure among psychiatric patients could be of value in the detection of suicide risk and the prevention of suicidal behavior. A previous case study {Fjeldsted, 2017 289 /id} found that, among 10 suicidal patients, all had suffered severe trauma exposure in childhood and/or prolonged and extensive trauma exposure as an adult. The study also found indications that assessment instruments with a focus on especially childhood trauma might positively identify patients with high levels of clinical depression, high levels of symptom load and personality disorder, and, in this context the most central issue, patients at high risk of suicide. The same was indicated in the previously mentioned study by Read et al. (2001).

When a patient comes into contact with a psychiatric department, an improved identification in the first clinical assessment of trauma exposure in the patient's life story might therefore be pivotal to the monitoring of suicide risk, and a use of this knowledge in treatment could contribute to better targeting and improved efficacy of curative care.

The objective of the present study is therefore to test whether psychological assessment instruments, by which earlier studies found indication of association between trauma exposure and suicidal behaviour, can discriminate suicidal patients and non-suicidal patients within a psychiatric population.

Method

A case-control design was employed comprising two groups of psychiatric outpatients with and without suicide attempts, who were matched for age, gender and diagnosis. Matching was manually performed in collaboration with the referring therapists and finally verified statistically.

The main outcome, suicide attempt, was here defined as *a self-inflicted, potentially injurious behaviour with a non-fatal outcome, that could have caused the person's death or included the intent to die*. It was here specified as an affirmative answer on the Suicide Behaviors Questionnaire-Revised, question 1, 4a or 4b ("I have attempted suicide, but did not want to die" or "I have attempted suicide and really hoped to die") (Osman et al., 2001). According to the Revised nomenclature for the study of suicide and suicidal behaviors (Silverman et al., 2007), this could include both self-harm, type I and II ("self-inflicted, potentially injurious behaviour for which there is evidence - implicit or explicit - that the person did not intend to kill himself/herself, without or with injury"), and suicide attempt, type I and II ("self-inflicted, potentially injurious behaviour for which there is evidence - implicit or explicit - of intent to die, without or with injury").

The total patient group at the District Psychiatric Ambulatory generally included individuals with relatively severe psychiatric problems and mental illness, ranging from severe affective disorders to psychosis and schizophrenia. In the Psychiatric Clinic were individuals with severe non-psychotic affective disorders. Diagnoses were made on the basis of records maintained by the psychiatrists and other medical staff at the two institutions.

Subjects

The original aim was to include 2 x 25 matched patients to the study.

Because this study has been designed as a first-hand study directed at clinical practice in psychiatry, it has been chosen to include only patients that could be expected to reliably answer self-report questionnaires. Moreover, patients with schizophrenia and bipolar disorder are excluded because possible genetic predisposition might influence results (without the possibility to control for this confounder with accessible data).

Inclusion criteria:

Persons aged 18-65 who had been referred for treatment in Psychiatry West, Holbaek, DK, the District Psychiatric Ambulatory and the Psychiatric Clinic (both being outpatient clinics) and who consecutively had appointments for treatment in the period 1.10.2012 to 30.9.2013.

Exclusion criteria:

Individuals with current psychosis, schizophrenia, bipolar disorder, organic disorder or mental retardation and persons who did not read and speak Danish.

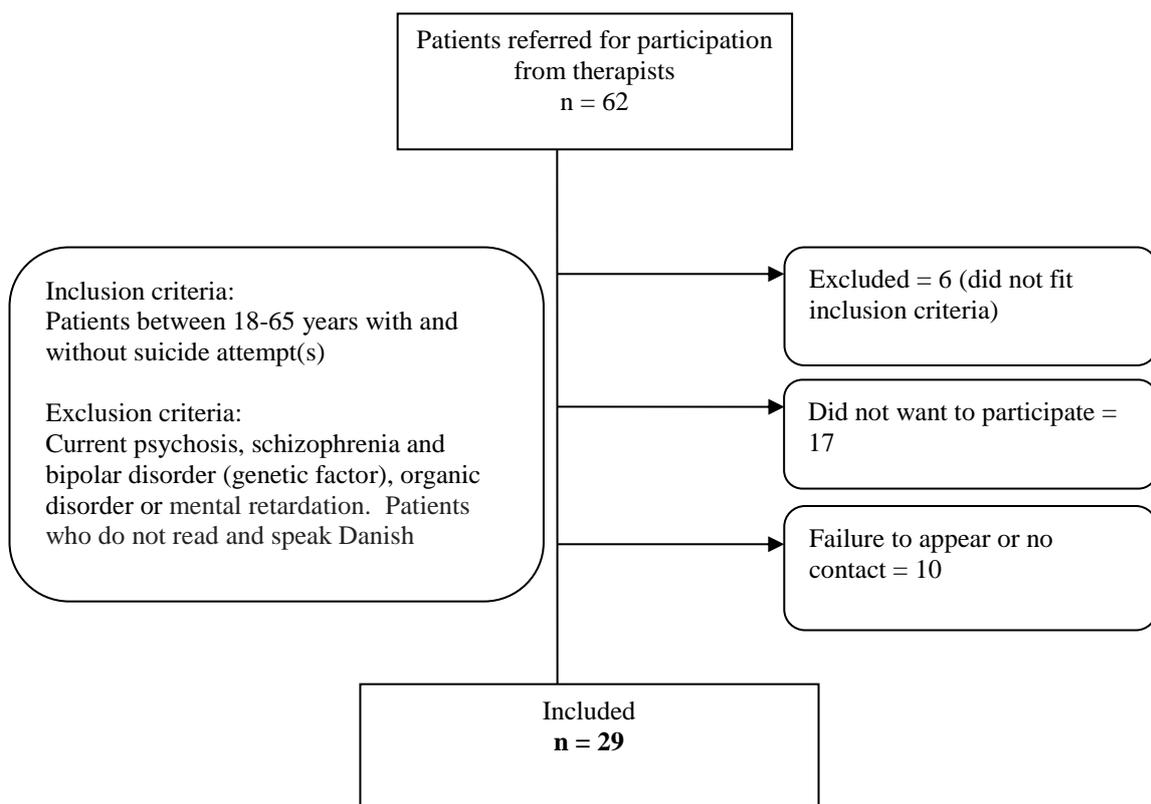
Recruitment:

In order to recruit patients, the therapists at the two clinics, namely the medical doctors, nursing staff and psychologists, were introduced to the planned study by an illustrated oral presentation, and later two short written descriptions of the project's content, inclusion criteria and study procedure

were mailed to all therapists in both clinics. During the process, it was clearly stated that both suicidal and non-suicidal patients should be included, and that no exclusion of vulnerable patients should take place.

The therapists referred suitable patients to the study, and in all cases a written project description and a consent form were given to, or sent by post to, the patient prior to evaluating participation. The project has been approved by The Danish Data Protection Agency and the health research programme in Region Zealand. It was expressly emphasized that participation was voluntary and would have no impact on the course of treatment and that all material from the investigation would remain confidential and anonymous, including in relation to daily treatment.

Figure 1. Flow Diagram for patient inclusion



Instruments

The patients completed the following six self-report questionnaires, all of which have been previously tested and validated in both clinical and research contexts (all questionnaires used authorized Danish translations):

- Suicide Behaviors Questionnaire (SBQ-R) (Osman et al., 2001)
- Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 2011)
- Stressful Life Events (SLE) (Kendler et al., 1995)
- Major Depression Inventory (MDI) (Bech et al., 2001)
- Symptom Checklist (SCL-90-R) (Derogatis, 2009)
- Millon Clinical Multiaxial Inventory (MCMI-III) (Millon, 2007)

The SBQ-R is a short psychological questionnaire designed to identify current risk factors for suicide, here used to confirm correct inclusion to the two tested groups. The CTQ was used to test exposure to childhood trauma (0-18 years) and the SLE to test stressful life events throughout lifetime and within the preceding year. The last three instruments, the MDI, the SCL-90-R and the MCMI-III were used for clinical description of the patient, related to negative symptoms relevant for suicidality such as depression, symptom load and personality disorder. These were chosen from the already-used assessment instruments in the clinic, as the goal was to find relevant tools to identify suicidal patients without having to expose patients to unnecessary extra burden in the assessment process of being referred to the clinic.

Statistical analyses

The questionnaire responses were scored in accordance with the manuals using, where available, population norms, and analyzed using the statistical program SPSS-20. The primary focus has been a comparison between the two investigated groups - patients with suicide attempt in their history and those without - for current suicide risk, trauma exposure, depression, symptom burden and personality disorder. The score distributions did not deviate markedly from normality and initial comparisons were therefore made using independent t-tests for the measurement variables. Fisher's Exact Test was used for dichotomous variables. Logistic regression was used for multivariate comparisons between the two patient groups in the CTQ including controlling for the influence of gender on outcome. Significance was in all cases set to $p < .05$, two-tailed. Where effects

were statistically significant, comparisons of sensitivity and specificity of the test results were examined using ROC-curves.

Effect sizes are expressed as Cohen's d' and Odds-Ratios. It should be noted that the originally aimed number of patients entering this study was determined under guidance from a clinical researcher and by practical considerations. However, it can be calculated that the power of the study to reject the null hypothesis, given a true effect estimated as Cohen's $d = .8$, is about 55% for $p < .05$ two-tailed.

Results

The District Psychiatric Ambulatory had, during the period 1.10.2012 to 30.9.2013, contact with 268 individual patients, 139 women and 129 men, and in the same time period the Psychiatric Clinic had 310 patients, of whom 219 were women and 91 men. In relation to a central focus of the present study, namely the identification of trauma exposure among psychiatric patients, only thirty patients from The District Psychiatric Ambulatory and 45 from the Psychiatric Clinic had the ICD-10 main diagnosis of F43, "Reaction to severe stress and adjustment disorders". Applicable to the specific diagnoses related to trauma exposure, in the District Psychiatric Ambulatory only four patients had F43.0, Acute stress reaction, three had F43.1, Post-traumatic stress disorder; the remainder had adjustment responses. In the Psychiatric Clinic no patients had F43.0, and eight had F43.1.

Among the potential participants identified by the staff, some did not respond to contact, many did not want to participate; several withdrew immediately prior to testing or failed to appear. More than a few expressed considerable discomfort at having to dredge up traumatic memories and periods of intrusive thoughts of suicide.

During the process of inclusion it was found that virtually all referred patients had had suicidal ideation at some time and many had suicide attempts, the latter often being unknown to their therapist and in such cases necessitating a reallocation of the patient into the suicide attempt group.

As shown in Table 1 there were no differences between the suicide attempt group and the non-suicide group in terms of gender or age.

Table 1: Gender, Age, Suicide Behaviors Questionnaire (SBQ-R), Childhood Trauma Questionnaire (CTQ), Stressful Life Events (SLE), Major Depression Inventory (MDI), Symptom Checklist (SCL-90R), Millon Clinical Multiaxial Inventory (MCMI-III).

| | Gender ¹ | | Age ² | | Current suicide risk, SBQ-score ³ | | |
|---|-------------------------------------|------------|--|--------------|--|-------------|------|
| | # | Women | Men | Mean | SD | Mean | SD |
| Suicide attempt | 14 | 11 | 3 | 44.07 | 15.72 | 12.21* | 2.36 |
| Non-suicide attempt | 15 | 12 | 3 | 41.13 | 12.25 | 8.40* | 3.58 |
| Exposure to trauma / stressful life events | CTQ, severe exposure ⁴ | | CTQ, exposure to sexual assault ⁵ | | SLE, throughout life ⁶ | | |
| | ≥ 2 SE | < 2 SE | Plus | Minus | Mean | SD | |
| Suicide attempt | 12 (85.7 %) | 2 (14.3 %) | 10* (71.4 %) | 4* (28.6 %) | 4.93 | 2.46 | |
| Non-suicide attempt | 9 (60 %) | 6 (40.0 %) | 4* (26.7 %) | 11* (73.3 %) | 3.86 | 2.48 | |
| Current depression/ symptom burden/ personality pathology | MDI current depression ⁷ | | SCL-90R symptom burden GSI Danish norms ⁸ | | MCMI-III severe personality pathology ⁹ | | |
| | Score ≥ 25 | Score < 25 | Mean score | SD | Score ≥ 85 (at least one area) | Score < 85 | |
| Suicide attempt | 8 (57.1 %) | 6 (42.9 %) | 66.29 | 9.52 | 5 (35.7 %) | 9 (64.3 %) | |
| Non-suicide attempt | 8 (53.3 %) | 7 (46.7 %) | 62.21 | 11.88 | 2 (13.3 %) | 13 (86.7 %) | |

¹ No significant difference Fisher's Exact test $p = 1.0$, ² No significant difference t-test, $p = .6$, ³ t-test $p = .002$, ⁴ ≥ 2 SE, two or more of the five clinical subscales categorized severe to extreme, Fisher's Exact Test $p = .2$, ⁵ Plus/minus exposure to any kind of sexual assault in clinical subscale, Fisher's Exact Test $p = .027$, ⁶ t-test $p = .26$, ⁷ Not significant Fisher's Exact test $p = 1.0$, ⁸ Not significant, t-test $p > .3$, normal area 40-60, ⁹ Not significant, Fisher's Exact test $p = .22$

The same applies to participation from the two psychiatric facilities. Among the 14 patients in the suicide attempt group, 12 had attended the District Psychiatric Ambulatory and 2 had attended the Psychiatric Clinic. Among the 15 patients without suicide attempt, the corresponding frequencies were 9 and 6. The difference was not statistically significant (Fisher's Exact test, $p = .22$).

In both groups the most common diagnosis was affective disorder (ICD-10, F3) with 10 out of 14 (71.4 %) in the suicide attempt group, and 8 of 15 (53.3 %) in the non-suicide attempt group. There was again no difference between referrals from the two facilities. Among the suicide attempt group the primary diagnosis, F43, reaction to severe stress and adjustment disorders, was found in only two patients, these being one with F43.1, PTSD, and one with F43.2, adjustment disorder. One patient in this group had F43.1 as a secondary diagnosis. In the non-suicide attempt group, only one patient had a principal diagnosis of F43, this being F43.2, adjustment disorder. No-one in the non-suicide attempt group had F43 as secondary diagnosis. A comparison of diagnoses between included and non-included patients showed no substantial differences between the two groups.

Since it was not possible in the limited time span of this study to include only patients newly referred to treatment, there might be differences related to contact length influencing the results. This has, however, been tested with a count of the number

of contacts within the preceding year, and no significant difference was found between the suicide attempt group and the non-suicide group in this respect.

The actual clinical determination of the suicidal/non-suicidal status of the patients by the therapists was verified with the use of the SBQ-R which showed (Table 1) the suicide attempt group to have significantly higher scores than the non-suicide attempt group (t-test, $p = .003$). The effect size is, not surprisingly, substantial, Cohen's $d = 1.3$, (based on an average SD).

Among the patients included in both groups, level of traumatization and stressful life events was found to be high. Twenty-one of all 29 included patients (72.4 %) had experienced severe traumatization for at least two parameters measured by the CTQ. As shown in Table 1 a higher overall level, albeit non-significant, of severe childhood trauma was found in the suicide attempt group as compared to the non-suicide attempt group. The suicide group had higher means in all five of the CTQ subscales, namely emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect, albeit significantly only in sexual abuse ($p < .05$).

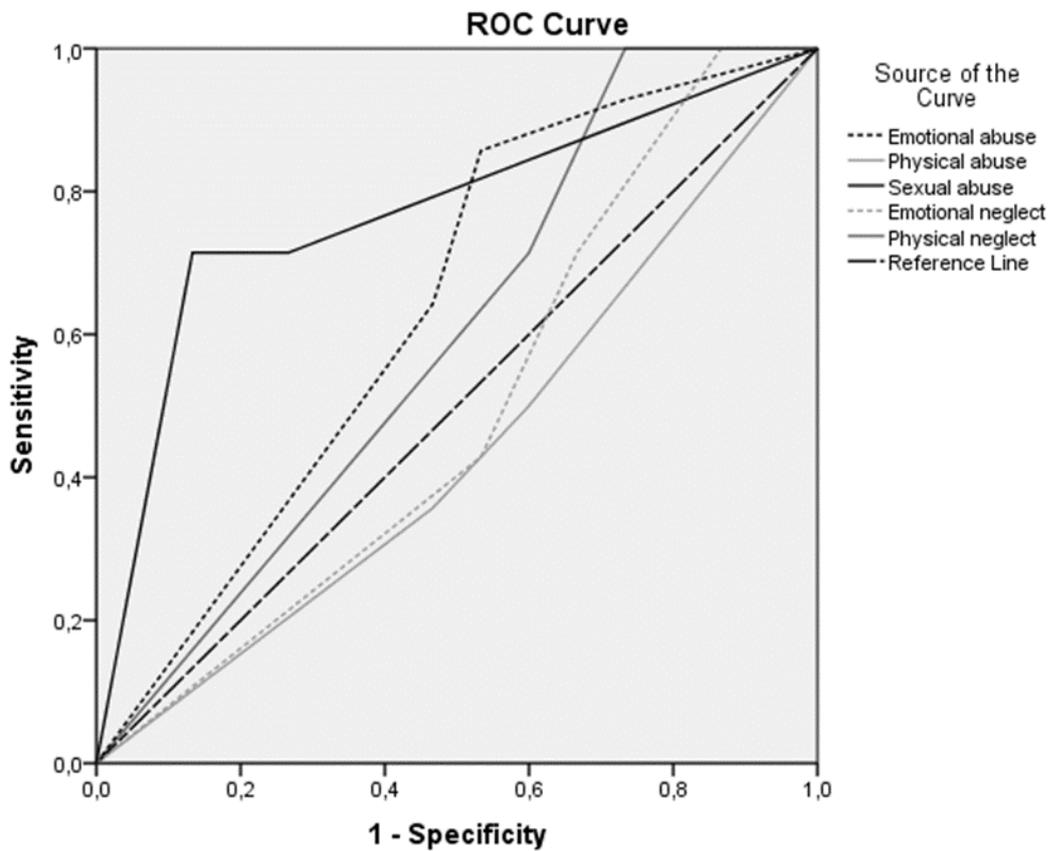
Sexual abuse was, as expected, reported significantly more often in the suicide attempt group than among the non-suicide attempt group ($p = 0.027$ Fisher's Exact). When exposed to sexual assault before 18 years the odds ratio for suicide

attempt is 6.88 (95% CI 1.35-35.06) compared to not exposed.

A logistic regression analysis was performed with group as the dependent variable to determine the predictive power of the five CTQ scales taken together. In this analysis sexual assault alone was significant (Wald test, $p = .023$). The Nagelkerke R Square was .52, and the model correctly predicted

83% of the group membership. When including gender in the model an even more significant association was found for sexual assault ($p = .017$), although gender itself was not significant ($p = .24$). Figure 2 shows the Receiver Operating Characteristic curves (Fan et al., 2006) for the five scales of the CTQ. This confirms the sole significance of the sexual assault scale (area = 77%, $p < .05$).

Figure 2 ROC Curve, Exposure to childhood trauma



Diagonal segments are produced by ties.

Area Under the Curve

| Test Result Variable(s) | Area | Std. Error ^a | Asymptotic Sig. ^b | Asymptotic 95% Confidence Interval | |
|-------------------------|------|-------------------------|------------------------------|------------------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Emotional abuse | ,636 | ,105 | ,214 | ,430 | ,841 |
| Physical abuse | ,440 | ,108 | ,585 | ,228 | ,653 |
| Sexual abuse | ,771 | ,093 | ,013 | ,590 | ,953 |
| Emotional neglect | ,495 | ,110 | ,965 | ,280 | ,711 |
| Physical neglect | ,595 | ,107 | ,383 | ,386 | ,805 |

The test result variable(s): Emotional abuse, Physical abuse, Sexual abuse, Emotional neglect, Physical neglect has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Concerning exposure to stressful life events as measured with the SLE there was again a higher level of stress or trauma exposure in the group with suicide attempts compared to the group without suicide attempts, but once more the differences do not reach statistical significance. There was a great diversity within both groups with regard to the number of positive replies concerning stressful events: the variable "last 12 months" covering events such as separation and conflicts in their own intimate relationships, own illness and that of close relatives, accident, work loss, economic and housing problems, personal crisis, etc., varied from zero to 27, and in the variable "whole life", covering abuse, life-threatening accident or illness, loss of a close relative, etc., the variation was between 1 and 10.

There was no significant difference between the two groups in terms of current depression as measured by MDI (Table 1), mean score in the suicide attempt group is only slightly above that of the group without suicide attempts. Mean scores for both groups are close to the borderline between moderate and severe depression (Bech et al., 2001). By contrast, there is a wide variation within both groups in terms of current depression score.

Symptom burden as measured by the SCL-90-R is seen in Table 1 to be clearly above the normal range (Danish standards, 40-60), in fact, both groups have means which are significantly above the population mean of 50 (one-sample t-tests, $p < .005$). Symptoms are higher in the suicide attempt group than in the group without suicide attempt, but the difference between the two groups is not statistically significant.

Similarly, the prevalence of severe personality disorders as measured by MCMI is higher in the suicide attempt group than in the non-suicide attempt group, illustrated in Table 1 although again the tendency is not significant.

Severe personality pathology has been found in both groups: five Borderline in the suicide attempt group; one Schizotypal and one Borderline in the non-suicide attempt group. Other clinical personality patterns with scores in the pathological range are seen mostly in the areas: depressed, dependent, masochistic and anxious-avoidant.

Discussion

It is recognized that a major limitation of this study has been sample sizes, which were unavoidably smaller than those originally planned.

It should be noted here that in the District Psychiatric Ambulatory a considerable proportion of the patients belong to the exclusion group (current psychosis, schizophrenia, bipolar disorder). However, the inclusion process proved to be the

project's most problematic element, and the two main challenges were the low patient referral rates for the study from the therapists and the patients' lack of desire or ability to participate. Unfortunately, the inclusion period at the clinic was characterized by transitions and increased performance requirements and the low referral rate from therapists seemed to be linked primarily to high levels of work pressure. Perhaps it might also be the case that the therapists had a tendency to refer primarily patients they knew or assumed had been exposed to stressful life events or traumas and/or had suicidal tendencies.

Therefore, it has only been possible to include a total of 29 of the 50 patients which was the ambition in the original protocol (see Figure 1). Furthermore, it became necessary to extend the inclusion period to obtain an adequate number of participating patients. Despite the recruitment difficulties, it remained the case that referred patients appeared to represent a broad spectrum of levels of suicidality, and results showed that diagnoses between included and non-included patients showed no substantial differences, and matching of the two groups appears to have succeeded.

Thus a true effect size (measured with Cohen's d) would require to be as large as 0.9 in order to obtain a 2/3 probability of finding the effect as significant. Conversely, statistical significance would require a sample size of 2×33 with the here found effect size for CTQ and for SLE a sample size of 2×75 (Ellis, 2010) again in order to achieve a 2/3 probability of finding the effect as significant.

It should, however, be noted that this limitation is very often seen in studies conducted within a clinical environment. Traumatized patients are often known to avoid being reminded of their traumas (this being the so-called 'flight-response') (Anstorp et al., 2007), as well as previously suicidal persons avoid the unbearable pain that is connected to suicidal ideation.

Despite this limitation, some conclusions do appear to be warranted. Although not being the prime aim of this study, the findings confirm the impression from previous research (that there is an under-diagnosis of trauma exposure in psychiatric wards (Floen & Elklit, 2007)). With the assessment instruments included in this study there were found high levels of traumatization in both groups, but greater in the suicide attempt group than in the non-suicide attempt group. This applies particularly to the sexual assault subscale in the CTQ, which is in good agreement with existing research that finds the strongest associations related to this factor (Enns et al., 2006; Boudewyn & Liem, 1995;

Bruffaerts et al., 2010; Christoffersen, 2013; Stein et al., 2010; Ystgaard et al., 2004; Kryszynska & Lester, 2010). There were also found high depression scores, high symptom scores and severe personality disorders in both groups, again highest in the suicide attempt group except for depression. The results might indicate an association between trauma exposure and symptom burden, personality disorder and suicidal behavior, but many of the statistical comparisons failed to reach statistical significance, although this could, as noted, have resulted from the comparatively low number of participants in the study with consequent lack of statistical power. Results can only be generalized to patients in outpatient psychiatry without schizophrenia, bipolar disorder and current psychosis.

It is estimated that there can theoretically be wide variations between different patients' answers to the questionnaire items and thereby different evaluation of experienced events (which cannot then be validated orally, as in an interview). Still, it had been decided for the present study to depend upon the validity of the questionnaire instruments employed.

This study has found confirmation in the expected direction of the associations and indications that, with the exception of the MDI, the assessment instruments employed might potentially identify psychiatric patients who are at particularly high risk of suicide in an outpatient psychiatric department. It would therefore be desirable to seek further confirmation (or refutation) of this through testing these instruments on a larger group of newly-referred patients. It could, however, already be questioned, whether the MDI is a relevant assessment tool for this purpose, partly because it assesses depression only within the latest two weeks, and several tested patients told about partial relief of depressive symptoms after an initial treatment period with psychotherapy and/or antidepressants. Moreover some studies have found measurement errors related to the MDI (Cuijpers et al., 2007b; Forsell, 2005).

In our view, the lesson to be drawn from the implementation of this study is therefore that, for this specific field - traumatized and suicidal patients - it is particularly important to control the process of inclusion of patients. It might therefore be an idea to test these instruments further as part of the standard assessment process to ensure optimal participation. This, of course, can only be implemented, if there is sufficient indication for the appropriateness herein.

Two assessment instruments proved in this study to significantly identify patients at increased risk for suicide attempts, namely the SBQ-R, and the CTQ

sub-element related to exposure to sexual assault in childhood. The association for sexual assault was further tested in a multivariate logistic regression model and was found to be statistically stable both in relation to the other subscales and to gender. This finding is in good agreement with other research results showing markedly elevated suicide risk, not only in persons/patients with a history of suicide attempts (Leon et al., 1990; Tejedor et al., 1999) but also for individuals/patients who have been sexually assaulted (Boudewyn & Liem, 1995; Bruffaerts et al., 2010; Christoffersen, 2013).

Conclusion

Persons enrolled as patients in a psychiatric ward have a significantly increased risk of suicide and suicide attempts, and the purpose of this study was to investigate whether relatively easily administered assessment instruments, here questionnaires focusing on trauma exposure both in childhood and adult life, together with current symptom burden and personality disorder would positively identify the most suicidal patients, and thus could form the basis for a more targeted suicide prevention effort.

The study results have generally shown the expected direction of the associations examined but could previously only confirm the usefulness of the tested screening instrument for sexual trauma exposures registered in the CTQ, Childhood Trauma Questionnaire. This limitation could have arisen primarily due to the low inclusion rate with, as stated above, loss of statistical power. The present results, however, also clearly confirm the usefulness of the suicide screening instrument, the SBQ-R, (Osman et al., 2001).

As these elements to our knowledge have not been previously tested in a naturalistic study of a psychiatric population, this seems, in spite of the study's limitations, to be a notable result that merits further testing in larger study populations.

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