

Traumatization and mental distress in long-term prisoners in Europe

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Abstract

This article investigates the prevalence of traumatization and mental distress in a sample of 1055 male European long-term prisoners as part of a wider study of the living conditions of prisoners serving sentences of at least five years in Belgium, Croatia, Denmark, England, Finland, France, Germany, Lithuania, Poland, Spain and Sweden. Data were collected in a written survey using the Posttraumatic Diagnostic Scale

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(PDS), the Brief Symptom Inventory (BSI) as well as questions on attempted suicide and auto-aggressive behaviour. Participants experienced a mean of three traumatic events, with 14 per cent developing a Posttraumatic Stress Disorder (PTSD) subsequently. In each national sample, more than 50 per cent of the participants were in need of treatment because of psychological symptoms and nearly one-third had attempted suicide.

Keywords

long-term imprisonment, mental health, psychopathology, PTSD, suicide

Introduction

Traumatic experiences are a basic part of human life and have intensive effects. In spite of the human ability to survive and to adapt, traumatic incidents may change a person's psychological, physiological and social balance to such a degree that the memory of a particular event overshadows all other experiences and affects the ability to cope with reality (Van Der Kolk et al., 2000).

The definition of 'trauma' is much debated in medical and legal literature. In the diagnostic sense of the International Classification of Diseases (ICD-10; WHO, 2007), a trauma is an event or a situation of either brief or long duration and of an exceptionally threatening or catastrophic nature that is likely to cause pervasive distress in almost anyone (ICD-10, F43.1). These events include natural disasters, physical or sexual abuse, war, imprisonment and life-threatening diseases. Thus, 'trauma' means a vital experience of discrepancy between threatening aspects of the situation and the individual's ability to cope (Fischer and Riedesser, 1998). This differs from the meaning of 'trauma' or 'traumatic' in everyday language. The derived concept of Posttraumatic Stress Disorder (PTSD) as well as the reliability and validity of its diagnostic criteria are still controversial. According to the ICD-10, PTSD comprises a range of defined symptoms such as intrusions, avoidance and numbing as well as a constant hyperarousal.

Findings from epidemiological research on traumatization and PTSD suggest that PTSD is an important health problem. Nearly 95 per cent of all people experience a trauma at least once in their lifetime. In the general population, 2–14 per cent develop a PTSD (Kessler et al., 1995; Maercker et al., 2008). The high prevalence of 14 per cent has been found in a representative survey in the USA where many participants named regional natural catastrophes such as hurricanes in Florida as well as serving in the armed forces deployed in an armed conflict as a cause. However, Maercker et al. (2008) were able to show that the prevalence of PTSD in a German population where those experiences are not relevant is considerably lower. Where prisoners are concerned, it is by now undisputed that their prevalence rates are distinctly higher at 4–21 per cent (Breslau et al., 1998; Goff et al., 2007; Maercker et al., 2008). Beyond the development of

Table 1. Prevalence of mental disorders in prisoners in Europe

Author	Country	N	Substance abuse (%)	Psychotic disorders (%)	Mood (affective) disorders (%)	Anxiety disorders (%)	Personality disorders (%)
Andersen et al. (1996)	DK	228 ^a	44	7	10	16	17
Birmingham et al. (1996)	GB	569 ^a	–	24	27	34	38
Brooke et al. (1996)	GB	750 ^a	38	5	22	18	11
Carrá et al. (2004)	IT	990	47	1	5	2	4
Dudeck et al. (2009)	DE	102	64	0	12	22	80
Falissard et al. (2006)	FR	800	14	12	21	21	–
Farrell et al. (2002)	GB	503	29	10	–	–	–
Fotiadou et al. (2006)	GR	80 ^a	53	11	28	38	38
Harsch et al. (2006)	DE	56	68	–	11	3	34
Joukamaa (1995)	FI	283	44	3	–	6	17
Konrad (2004)	DE	100 ^b	57	9	34	10	–
Langeveld and Melhus (2004)	NO	40	90	32	–	–	80
Missoni et al. (2003)	DE	108 ^a	13	6	48	20	–
Von Schönfeld et al. (2006)	DE	76	64	4	12	17	43
Sørland and Kjelsberg (2009)	NO	42 ^c	74	–	33	33	21
Watzke et al. (2006)	DE	366	60	0.5	6	7	26

Note: ^aPre-trial detention; ^bImprisonment for fine defaulters; ^cPre-trial detainees younger than 20 years; – not explored. Country abbreviations: DE: Germany, DK: Denmark, FI: Finland, FR: France, GB: Great Britain, GR: Greece, IT: Italy, NO: Norway.

PTSD, traumatization is a risk factor for many mental disorders often connected with suicidality (Peleikis et al., 2005; Spataro et al., 2004; Spitzer et al., 2008).

Previous surveys show a considerably increased prevalence of mental disorders in prisoners as compared to the general population. Frequencies vary from 38 per cent to 98 per cent (see Table 1). Irrespective of the research design (sample size, methodology or instruments) the most frequent diagnoses are substance abuse and personality disorders (antisocial and/or borderline). There is also a link to traumatization because persons with antisocial personality traits or even an antisocial personality disorder report significantly more experience of neglect and abuse (Cima et al., 2008; Krischer and Sevecke, 2008). Considering that antisocial behaviour, personality pattern and cognition and substance abuse have been identified as among the most important risk factors for delinquent behaviour (Andrews et al., 2006; Gendreau et al., 1996; Hanson and Morton-Bourgon, 2004; Lipsey and Derzon, 1998), traumatization therefore adds to this risk. As neglect and abuse would most probably have happened in the family or the immediate social environment, these psychiatric findings also reflect criminological findings on the importance of caring and monitoring in the family.

While there are several studies on the prevalence of particular diagnoses, there is little comparative research on the broader concept of the psychological well-being of prisoners. Three German surveys found mental distress requiring treatment in 55–86 per cent of the participants. Suicidality was increased by a factor of 10 compared to the general population. Children were more stressed than adults (Blocher et al., 2001; Köhler et al., 2004; Missoni and Konrad, 2008; for North America see Brink et al., 2001; Hodgins and Cote, 1992; Powell et al., 1997; Teplin et al., 1994).

Given that there are several studies where diagnostic criteria are unclear, samples are small and strongly selected or professional standards are not adhered to in the diagnostic process, one might question some of the conclusions of these studies (Drenkhahn and Dudeck, 2007; Konrad, 2000). In addition, there are no internationally comparative data on provisions for offender treatment in general and mental health care in particular, or on the prevalence of specific mental disorders in prisoners, even though European rules on imprisonment stipulate the same standard of treatment for prisoners as for the general population.

Consequently, this study is the first to use self-report instruments to investigate the prevalence of trauma and of PTSD as well as psychological problems of prisoners in 11 European countries. It is part of an international project on long-term imprisonment and human rights in ten member states of the European Union (Belgium, Denmark, Finland, France, Germany, Lithuania, Poland, Spain, Sweden and the United Kingdom) and one candidate country (Croatia). The overall aim of this research is a description of living conditions of male long-term prisoners and an analysis of whether or not these conditions are in accordance with the European Convention on Human Rights and its accompanying recommendations for prisons and prisoners: that is, Rec(2006)2 on the European Prison Rules (below: EPR) and Rec(2003)23 on the management by prison administrations of life sentence and other long-term prisoners (below: Recommendation on long-term prisoners).

The data presented in this article are part of a data set derived from this research.

European recommendations on health care in prison

With regard to mental health care, the EPR set explicit requirements in Part III on health: according to Rule 42.3, the duties of the medical practitioner at the examination after admission cover the diagnosis and treatment of mental illness as well as the identification of psychological or other stress caused by the deprivation of liberty. The medical practitioner is responsible for ensuring that mental health care meets the standards that apply in the community (Rule 43.1). Furthermore, the importance of mental health care in prison is emphasized by Rule 47 of the EPR. It states that prisoners with mental disorders or abnormalities shall be observed and treated in specialized institutions under medical control and that special attention shall be paid to suicide prevention.

In Section 27 of the Recommendation on long-term prisoners, there is an explicit reference to the treatment of mentally disturbed prisoners. There should be provisions that allow for early and specialist diagnosis and adequate treatment of mental distress. In addition, Section 24 of the same Recommendation points out the importance of access to counselling in order to prevent suicide and to help counteract the adverse effects of long-term imprisonment.

Data collection and methodology

Data were gathered in a written survey conducted with male long-term prisoners from Belgium, Croatia, Denmark, England, Finland, France, Germany, Lithuania, Poland, Spain and Sweden. Prisoners were eligible to participate if they were serving one or more prison sentences totalling at least five years or a sentence of life imprisonment (see the definition in Section 1 of the Recommendation on long-term prisoners). This also included prisoners serving a custodial sanction for public protection. The aim was to survey 100 prisoners per country and 1100 prisoners in total.

Project partners in the participating countries were asked to identify prisons that could be regarded as typical places of long-term imprisonment in their national prison system. Considering that there are more than 190 prisons in Germany alone, this pre-selection was necessary to maintain a feasible research design. All eligible prisoners in the selected institutions were informed that there would be a survey about their everyday life and well-being and were asked to participate. Thus, the sample consists of all those who volunteered. The researchers would meet with a group of prisoners, hand out the questionnaires and explain the survey to the participants, and point out that they were not obliged to answer any of these questions. As the researchers were present during the whole session, they were able to help participants with literacy problems. In some prisons, officers were present, but they did not see the answers. Participants were not promised any kind of incentive. The groups of prisoners varied in size depending on the rooms where the sessions were held. The data collection took place between October 2007 and February 2009 in two to six prisons per country. Altogether, 1101 prisoners in 36 prisons took part under the given conditions. The data of 1055 participants were analysed for this article. Forty-six participants either reported sentences that were too short to be eligible or did not complete the questionnaires on mental health.

There are limits to generalizability in a study like this because of the small percentage of eligible prisoners from each country who participated. In this sense, the study is exploratory and tentative. The findings need cautious interpretation in the light of national, regional and local particularities. On the other hand, it provides a first systematic comparison of traumatization and distress in European penal systems.

The Posttraumatic Diagnostic Scale (PDS) and the Brief Symptom Inventory (BSI) were included in the questionnaire. Both are self-report instruments that were

developed for and tested with psychiatric in-patients. To date, there are no such instruments for the specific situation of forensic populations, especially prisoners.

The PDS represents a 49-item self-report instrument for the assessment of PTSD (Foa et al., 1997). Part 1 is a checklist of 12 stressful and 'traumatic' events ('serious accident, fire or explosion'; 'natural disaster'; 'non-sexual assault by a family member or someone you know'; 'non-sexual attack by a stranger'; 'sexual assault by a family member or someone you know'; 'sexual assault by a stranger'; 'military combat or war zone'; 'sexual contact when you were younger than 18 with someone who was five or more years older than you'; 'imprisonment'; 'torture'; 'life-threatening illness'; 'other traumatic event'). It asks about life-time incidence. This questionnaire does not ask about the specific circumstances of the experience. In case of more than one trauma, participants were asked to refer to the most distressing event when completing the subsequent sections (five symptoms of re-experiencing the traumatic situation/intrusions, seven symptoms of avoidance and five symptoms of arousal). The frequency of each of these 17 symptoms in the past month was rated on a four-point scale (0 = *not at all or only one time*; 1 = *once a week or less/once in a while*; 2 = *two to four times a week/half the time*; 3 = *five or more times a week/almost always*). The presence of two or more symptoms within each of the PTSD criteria led to the self-rated diagnosis of PTSD. The duration of the PTSD and subsequent impairment in different parts of life were then assessed. Additionally, the scale allows quantification of symptom severity by summing the participant's responses corresponding to the PTSD symptom clusters of *intrusions*, *avoidance* and *arousal*.

The BSI is a short version of the Symptom Checklist-90 (SCL-90) and identifies clinically relevant psychological symptoms presented by adults during the previous seven days. It consists of 53 items covering nine symptom dimensions: somatization; obsession-compulsion; interpersonal sensitivity; depression; anxiety; hostility; phobic anxiety; paranoid ideation; and psychoticism. In addition, three global indices of distress can be calculated. The psychometric properties are good (Cronbach's alpha .85, test-retest reliability .92; Derogatis, 1993). We used the BSI because it is short, covers the same symptoms as the SCL-90 and is easy to understand. A problem is that it comprises some items that do not make sense in a custodial setting, especially in long-term imprisonment: feeling afraid to travel on buses, subways or trains (item 28) and feeling uneasy in crowds, such as while shopping or at the movies (item 43). Prisoners were asked to think of a comparable situation or to leave out these items.

In addition, participants were asked about attempted suicide before and during imprisonment (number of attempts and methods) as well as about auto-aggressive behaviour. These questions specified typical behaviour patterns and also provided an open category. Participants were asked to indicate how often they self-harmed.

Data were analysed using SPSS version 17.0. The results are presented as absolute numbers (*N*) and corresponding percentages (%), or as group means (*M*) and standard deviations (*SD*).

Results

Socio-demographic and forensic characteristics of the sample

Socio-demographic and forensic characteristics are presented in Table 2. There are significant differences for all variables. Concerning age, there is a wide range of means from 35.5 years in the Lithuanian sample to 44.4 years in the English sample. With an overall mean age of 40, this sample is relatively old – older, for example, than the participants in our study of living conditions of adult prisoners in prisons in countries around the Baltic Sea (Dünkel, 2009: 184).

For the variables on professional qualifications, we were not able to control whether participants included any certificate that they had received while in prison. That 100 per cent of the Croatian participants had achieved some sort of graduation from school is probably due to the national education system where there is traditionally a very high percentage of graduates.

The type of the current offence reflects only the most serious offence that participants indicated (homicide as the most serious, drug offence the least serious, see Table 2). Not surprisingly – given the criteria for eligibility – homicide is the most frequent offence in most national samples. As there are more persons sentenced for drug offences than for those against the person in the small long-term prisoner populations in Denmark and Sweden, drug offences are the predominant type of offence in these national samples. The high percentage of sex offences in the English sample (and the older average age) is due to the fact that one of the participating English prisons was exclusively for sex offenders.

The percentages of prisoners serving indeterminate sentences varied greatly. In four national samples there were no such prisoners and in three there were more than 35 per cent. This reflects differences in the sanctioning systems and the selection of prisons. In Croatia and Spain, the penal system does not provide for indeterminate sanctions, such as life imprisonment or preventive detention. Although the Polish and the Lithuanian systems have provisions for life imprisonment, this sanction is rarely used. Therefore, there are very few lifers in these countries. In England, Finland and Germany, however, indeterminate sentences are imposed more frequently and the survey took place in institutions that specialized in prisoners serving such sentences.

Traumatization

The frequency of traumata in the whole sample and the national samples is reported in Table 3. The most frequent is a non-sexual assault by a stranger (49.4%), followed by serious accident, fire or explosion (49.3%) and imprisonment (48.2%).

Almost a quarter of the participants stated that they had experienced sexual contact when under 18 with a person at least five years older. Sexual assault by a family member or by a stranger was reported by 5.4 per cent and 5.7 per cent respectively. About one-fifth had experienced some life-threatening illness. Among

Table 2. Socio-demographic and forensic characteristics

Country	Belgium	Croatia	Denmark	England	Finland	France	Germany	Lithuania	Poland	Spain	Sweden	Total	χ^2 / F	p
N	47	96	89	123	52	92	98	212	105	78	63	1055		
Age (M/SD)	39.8 (13.0)	41.8 (9.9)	37.2 (10.6)	44.4 (13.2)	37.5 (9.1)	46.2 (11.8)	41.8 (11.1)	35.5 (9.0)	37.6 (11.2)	41.1 (9.0)	38.9 (9.8)	399 (12.9)	10.98	.000
Marital status (%)														
Single	43.9	30.5	38.6	38.7	39.2	33.7	45.4	32.4	52.4	51.3	50.8	40.1	25.61	.004
Married	22.0	29.5	17.0	13.7	15.7	7.6	11.3	21.4	17.1	16.7	17.5	17.4	24.50	.013
Relationship	17.1	14.7	25.0	19.4	11.8	18.5	17.5	31.9	11.4	24.4	25.4	21.2	29.28	.001
Graduation (%)	82.9	100.0	86.9	79.2	96.2	91.0	94.8	88.8	98.1	92.2	96.9	91.2	49.21	.000
Vocational training (%)	62.5	74.7	57.5	55.7	57.7	76.1	69.1	75.3	69.5	47.3	50.8	59.5	41.93	.000
Children (%)	56.1	57.3	52.8	67.2	57.1	56.2	58.3	53.4	50.5	56.4	60.9	56.6	9.58	.478
Type of current offence (%)														
Homicide	52.5	63.7	36.4	42.0	71.2	53.6	47.4	34.6	38.7	38.0	34.4	44.2	48.98	.000
Robbery	15.0	13.2	9.1	5.0	7.7	10.7	21.1	21.5	43.4	31.6	17.2	18.7	82.60	.000
Sexual offence	7.5	11.0	4.5	47.9	3.8	21.8	25.3	5.7	4.8	16.5	0	14.5	145.35	.000
Assault	15.0	3.7	9.1	9.2	23.1	10.7	22.1	15.1	24.5	7.6	14.1	13.9	35.09	.000
Property crime	25.0	11.0	14.8	6.7	13.5	15.5	13.7	24.9	33.0	17.7	6.3	17.4	47.27	.000
Drug offence	7.5	7.7	48.9	0.8	32.7	4.8	7.4	7.8	2.8	22.8	54.7	15.1	230.22	.000
Length of current imprisonment, months $M \pm SD$ (range)	202.7 (123.1)	157.8 (64.2)	108.2 (43.6)	105.0 (47.5)	114.2 (32.2)	243.0 (92.0)	107.3 (44.0)	99.9 (38.1)	156.4 (73.8)	211.9 (83.6)	114.1 (46.3)	142.4 (79.1)	48.22	.000
Number of prior incarcerations $M \pm SD$ (range)	2.6 (2.2)	1.9 (0.9)	3.5 (3.1)	3.4 (3.6)	5.2 (3.7)	3.2 (3.9)	2.9 (2.5)	2.6 (1.9)	2.6 (1.8)	3.4 (3.9)	4.8 (5.5)	3.1 (3.1)	3.89	.000
Indeterminate sanctions (%)	14.6	0	10.0	60.2	38.5	16.3	45.4	0	0	0	15.6	17.2		

Table 3. Prevalence of traumata in national samples (%)

Trauma	Belgium	Croatia	Denmark	England	Finland	France	Germany	Lithuania	Poland	Spain	Sweden	Total
Serious accident, fire or explosion	42.9	41.2	38.9	56.5	49.4	46.7	59.2	44.6	59.0	48.1	55.6	49.3
Natural disaster	19.0	12.4	5.6	16.9	17.7	22.8	9.2	3.3	20.0	1.9	7.9	11.8
Non-sexual assault – family member	23.8	44.3	18.9	50.8	45.6	29.3	49.0	45.1	37.1	50.0	17.5	39.4
Non-sexual assault – stranger	38.1	36.1	45.6	62.1	53.2	37.0	62.2	54.9	43.8	55.8	36.5	49.4
Sexual assault – family member	7.1	4.1	3.3	8.9	6.3	10.9	7.1	4.2	1.9	1.9	3.2	5.4
Sexual assault – stranger	4.8	6.2	5.6	5.6	5.1	7.6	13.3	5.6	1.9	1.9	1.6	5.7
Military combat or war zone	19.0	54.6	10.0	7.3	11.4	15.2	12.2	9.4	3.8	3.8	9.5	13.9
Sexual contact under 18	19.0	9.3	18.9	27.4	26.6	22.8	38.8	21.1	30.5	17.3	4.8	22.5
Imprisonment	61.9	35.1	57.8	60.5	29.1	42.4	54.1	39.2	43.8	73.1	61.9	48.2
Torture	23.8	14.4	8.9	7.3	32.9	13.0	14.3	30.2	13.3	23.1	17.5	18.4
Life-threatening illness	23.8	13.4	18.9	21.8	29.1	22.8	27.6	17.0	24.8	23.1	12.7	20.9
Other traumatic event	23.8	10.4	16.7	21.8	30.4	13.0	16.3	1.4	5.7	26.9	23.8	14.4

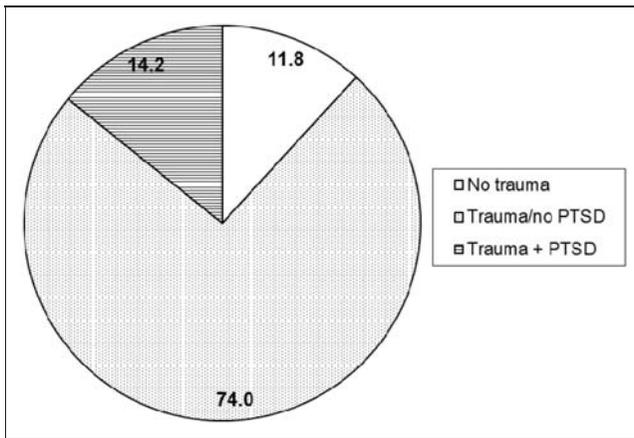


Figure 1. Trauma and PTSD in the whole sample.

the other traumatic events, we coded only the loss of caring others and the prisoner's own offence. One out of six participants reported such an event.

Figure 1 shows the prevalence of traumata in the whole sample. Participants indicated a mean of three traumata; four of them listed the maximum of ten traumata. Only 11.8 per cent did not report any trauma in the life course at all. Almost one out of six participants had developed PTSD. The highest prevalence was found in the Finnish sample with 27.8 per cent, the Croatian with 20.6 per cent and the English with 20.2 per cent. Figure 2 shows the prevalence of PTSD in all national samples.

Other psychological symptoms

The percentage of participants with psychological symptoms at a level that requires treatment is presented in Figure 3 for the national samples. A total of 58–86 per cent were in need of treatment. This means that they felt psychological strain with regard to one or more symptoms. Thus, their needs did not differ fundamentally from those of the general population. There are high scores for depressive symptoms as well as for paranoid ideation, anxiety and hostility in all national samples. In the Polish sample, all nine symptom dimensions were at a level that required treatment.

Suicidality and other auto-aggressive behaviour

Nearly one-third of the participants had attempted suicide (29.7%, see Table 4). Most of them had done so either before or during imprisonment. There were few ($N = 41$) who had attempted suicide both before and during imprisonment. The highest prevalence of suicide attempts was found in the Finnish sample (24.3%), followed by the Lithuanian and German samples (18.7% and 17.2% respectively).

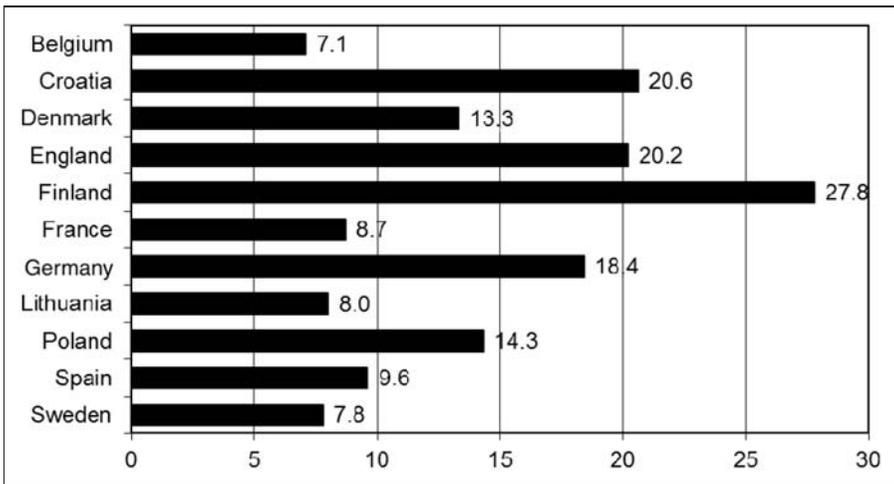


Figure 2. Prevalence of PTSD in national samples (%).

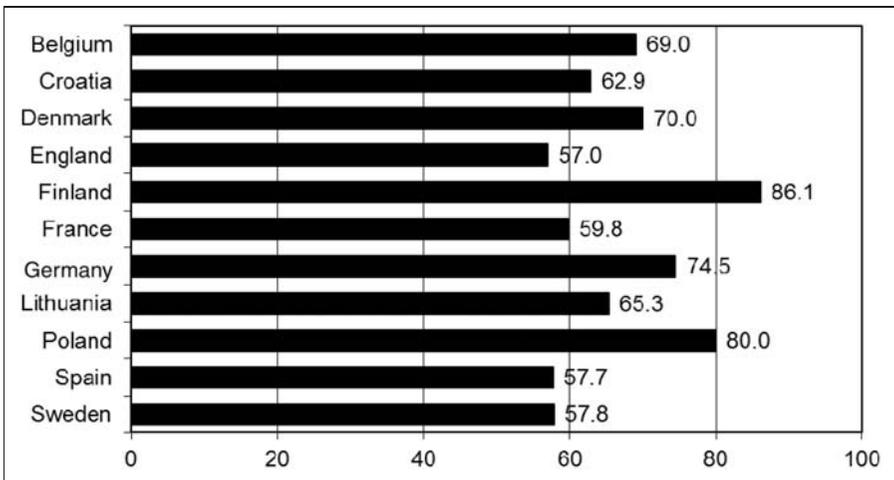


Figure 3. Need of treatment in the national samples (%).

About one-third of the whole sample reported self-harming. In the Lithuanian and Finnish samples, we found auto-aggressive behaviour in about half of the participants (54.1% and 48.6% respectively, see Table 5).

Discussion

In the present study, we examined the prevalence rates of traumata and PTSD as well as psychological distress in long-term prisoners in European countries.

Table 4. Suicidality in the whole sample (%)

Attempted suicide	%
Before incarceration	12.1
During incarceration	13.4
Both before and during incarceration	4.2

Table 5. Auto-aggressive behaviour in the whole sample

Behaviour	Rarely, N (%)	Sometimes, N (%)	Often, N (%)
Cutting	92 (13.5)	44 (6.5)	22 (3.2)
Burning	40 (5.4)	20 (2.7)	7 (0.9)
Tattooing	60 (8.8)	42 (6.2)	31 (4.6)
Swallowing objects	39 (5.7)	6 (0.9)	5 (0.7)

In a separate project, we examined German male prisoners with a prison sentence of up to three years using the same psychiatric instruments (survey of short-term prisoners, Dudeck et al., 2009). These results are a useful comparator for interpreting the findings from the survey of long-term prisoners.

A key finding of the present study is that there is a mean of three relevant traumata per long-term prisoner. It is uncontested that offenders experience significantly more frequent and more serious traumatizations than the general population (Breslau et al., 1998; Goff et al., 2007; Maercker et al., 2008). This is true even when comparing with similar age groups (Maercker et al., 2008: 242 traumata in 1230 persons aged 30 to 59 years). But our findings show that the prevalence of traumata in long-term prisoners is actually six times higher than in the general population and that they undergo significantly more traumata than forensic psychiatric in-patients (Maercker et al., 2008; Spitzer et al., 2001) and than short-term prisoners in our earlier study (Dudeck et al., 2009).

This means that long-term prisoners, like all traumatized persons but probably more intensively, try to live down past victimizations by unconsciously re-enacting them and that they persistently seek out similar situations in order to relive them over and over again. In addition, long-term imprisonment probably provides a traumatizing setting and increases the risk of new traumatizations. Neller et al. (2006) found that 67 per cent of prisoners experience violence traumatically. The participants in the current study are significantly older than Spitzer et al.'s (2001) forensic psychiatric sample and the short-term prisoners in our earlier study (Dudeck et al., 2009). The difference in age of about ten years might explain some of the other differences.

An in-depth discussion of all findings of trauma experience and an analysis of all differences between national samples would go beyond the scope of this article.

Thus, we limit this analysis to findings that strike us as particularly interesting. The rates of imprisonment as a trauma are one such finding: 73 per cent of the Spanish sample and 62 per cent of the Swedish and the Belgian samples indicated imprisonment as a trauma. We expected that many Croatian participants would indicate detention as a prisoner of war as a trauma, but only relatively few, 35 per cent, did so. Answers to questions about living conditions suggested that many Finnish participants were in solitary confinement. Therefore, we expected a high percentage of imprisonment as a trauma here as well, but only 29 per cent reported experiencing their detention as traumatic. These findings illustrate that the PDS does not distinguish between current and past imprisonment. So far, there is no instrument that does so.

Non-sexual assault has been indicated frequently in all national samples with percentages ranging from 36 per cent (Croatia) to 62 per cent (Germany). Here again, we expected a higher rate in Croatia, but it seems as if Croatian participants either did not experience violence during the war as traumatic or perceived it as 'normal'. Presumably, it is important if the war was felt to be 'just'.

The item 'other traumatic event' provoked a wide range of answers of which we have only included the minor stressor 'loss of caring others' and the prisoner's own offence. As many prisoners have experienced some sort of broken home in their childhood (Enzmann and Greve 2001; Habermeyer et al., 2007; Von Schönfeld et al., 2006), it might be assumed that this is true for our sample of long-term prisoners as well. From a mental health perspective, the loss of a stabilizing person is traumatic. Concerning the prisoner's own offence, this might be experienced as traumatic, like other serious incidents, generating feelings of loss of control of reality and self-doubt about one's sanity. In order to neutralize intolerable affects, a PTSD might occur. In this context, one has to bear in mind that the construct of PTSD was developed with veterans from the Vietnam War who could be described as perpetrators, although their actions were justified by political authorities.

Almost one out of six long-term prisoners had developed a PTSD because of their traumatic experiences. This is consistent with the findings of other authors who report prevalences of 4–21 per cent (Breslau et al., 1998; Goff et al., 2007; Maercker et al., 2008). These surveys used a variety of questionnaires and did not consider different lengths of detention. The prevalence of 14 per cent of current PTSD – at examination – in our sample was lower than in a sample of forensic in-patients (17%; Spitzer et al., 2001), but three times higher than in a short-term sample (4%; Dudeck et al., 2009). Forensic in-patients by definition have a mental illness and there is a high comorbidity of psychiatric diagnoses. This may explain the more frequent diagnosis of PTSD in forensic patients. The short-term prisoners were significantly younger and incarcerated for a shorter period for less serious offences, both of which may be crucial in the development of PTSD.

Nevertheless, a prevalence of only 14 per cent in the whole sample is astonishing when there is a mean of three traumata per participant and considering that prevalences of 2–14 per cent have been found in the general population (Kessler et al., 1995; Maercker et al., 2008). Perhaps our findings underestimate the real

occurrence of PTSD. As avoidance is one of the basic symptoms of the PTSD, seriously traumatized individuals are less likely to participate in studies such as this. As participation was voluntary and there were no incentives, we may not have persuaded those most affected to participate. The fact that participants had to be literate might also have influenced the findings.

There are, however, other explanations for why only 26 per cent of those who indicated a trauma developed a PTSD. Participants may be resilient when confronted with traumatic stress (Brewin et al., 2000). This means that they have the capability – due to specific individual dispositions – to resist or overcome the potential for impairment of diverse bio-psycho-social risk factors (Antonovsky, 1987; Morrison and Bennett, 2009). Another possible explanation is psychopathy/antisocial personality characteristics, although conclusions drawn from psychiatric research are ambiguous (Cima et al., 2008; Krischer and Sevecke, 2008). Psychopathy is – in short – characterized by an arrogant style of interaction, affective deficits and impulsivity, and thus overlaps with the definition of antisocial personality disorder. Forensic research indicates that traumatic childhood experiences correlate with antisocial and aggressive behaviour (Cima et al., 2008; Poythress et al., 2006). In their study of female and male prisoners aged 14 to 19 Krischer and Sevecke (2008) found a correlation of emotional, physical or sexual abuse and psychopathy among the males.

Concerning general psychopathology, an important finding is the high percentage of participants in need of treatment. Percentages in all national samples are higher than 50 per cent. It should be noted that the BSI does not generate a psychopathological result or a sound diagnosis, but as a self-report instrument records subjective feelings of distress by physical and mental symptoms during a short period of seven days. As a screening instrument, it has a relatively low specificity and a high sensitivity. Therefore, it does not allow for definite conclusions about actual treatment needs because, from a psychiatric perspective, most symptoms need only to be treated if the individual feels psychological distress.

However, the values found in our sample correspond with those of psychiatric patients. Compared to our sample of short-term prisoners, the treatment needs of long-term prisoners are increased by 50 per cent – not only for eight of the nine BSI dimensions, but also for the global index. To what extent this is due to characteristics of this particular prison population, to the length of incarceration, to adverse living conditions or to insufficient mental health care, is open to further investigation. Our findings do not support the hypothesis that symptoms will be reduced when prisoners adapt to prison life and accept their sub-cultural roles (Kopp et al., 2010).

The high values for the dimension ‘depression’ in all national samples may be related to the deprivation of liberty and to living conditions that promote depressive symptoms. It is highly probable that high values for depression increase the risk of suicide and self-harm.

Long-term prisoners presented high values on the dimensions ‘paranoid ideation’ and ‘psychoticism’. While the first would be expected, given the high level of

surveillance and control in prison, and may not relate directly to mental illness, high values of psychoticism might be a risk factor for specific reactions to the deprivation of liberty and even for a 'prison psychosis' (*Haftpsychose*), a concept that is discussed in the German literature (Göbbling and Konrad, 2004). Probable explanations for this are an increased occurrence of psychiatric symptoms in offenders before incarceration as well as the effects of imprisonment on mental health.

The findings for phobic anxiety probably underestimate the actual frequency. In one of the French prisons, questions on this symptom were blocked by the prison governor. Questions about being in a cinema or taking the bus were not customized for long-term prisoners. Here again, it is evident that there is a need for further research including the adaptation to prison populations of questionnaires that are designed for the general population. In the daily routine of a psychiatric clinic, we have met prisoners who have developed a phobic anxiety disorder (phobia related to certain places or situations) in response to being imprisoned.

Nearly every third participant stated that he had attempted suicide at least once in his life. Participants did this either before or during imprisonment. There was only a small overlap (of 4%) of prisoners who did so both before and during imprisonment. This is not consistent with the explanatory model of importation of suicidality. The hypothesis of this model is that suicidal prisoners have already had psychological problems or even mental disorders, such as substance abuse, compulsive behaviour, major depression or schizophrenia, before incarceration. These psychological problems that go along with a high risk of suicide are still present after incarceration. The fact that one out of six participants attempted suicide at least once during imprisonment corresponds with the model of deprivation according to which the loss of social structure and relations may lead to isolation and suicidality (Ashraf, 1999; Backett, 1987; Frottier et al., 2001; Ivanoff and Jang, 1991). There is clearly interaction of importation and deprivation factors.

Auto-aggressive behaviour such as cutting and burning was found considerably less often than in the sample of short-term prisoners. It might be that more short-term prisoners had a borderline disorder – there are no such data for the sample of long-term prisoners. But during long terms of imprisonment, self-harming may escalate to suicidal behaviour – that has been suggested by those who self-harm – which would correspond with the extent of depressive symptoms that we found in our sample.

For this project, it was important to use well-established self-report instruments. To the best of our knowledge, this is the first survey of psychiatric morbidity where prisoners were not granted any incentives for their participation. The questionnaires were completed with researchers present.

Still, there are some critical matters that limit the validity of our findings. Self-report instruments tend to overestimate the severity of symptoms and are prone to intentional deceit. Items in self-report instruments are unidimensional, meaning that high values reflect high degrees of symptom severity, and there is no lie-scale. Using retrospective self-reports of past traumata is another important

limitation. Self-report instruments are vulnerable to defective memory, inaccuracy, denial and inclination to externalize. Weeks and Widom (1998) pointed out that in cases of serious traumata retrospective data collection is prone to social desirability as well as to unconscious denial and thus to bias.

Furthermore, it has to be noted that only prisoners who understood the questions were eligible for participation. It may be assumed that a large proportion of those who could not participate were also traumatized at least once in their life, but we do not know whether they suffer the same amount of distress or more.

We collected data only at one point in time, so this study is cross-sectional. Every participant had completed diverse prison terms and/or treatment measures. Thus, it is not possible to draw firm conclusions from our data as to the chronological sequence or any changes of psychopathological phenomena. Nonetheless, the levels of mental distress that we found are relatively high. Although the rate of self-reported PTSD is low given the high rate of multiple trauma experience, this finding still is alarming because trauma experience is also a risk factor for many other mental disorders (Peleikis et al., 2005; Spataro et al., 2004; Spitzer et al., 2008). In addition, prisoners reported high scores for psychological symptoms in the BSI and a high rate of suicide attempts in prison. This suggests that the recommendations of the Council of Europe on mental health care in prison mentioned above are not implemented well (Melzer et al., 2002; Singleton et al., 1999), although the same therapeutic standards should apply for prisoners as for the general population. In addition to psychopharmacotherapy, there are other effective forms of psychotherapeutic treatment that could be used (Salize and Dressing, 2008).

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