



Comparison of risk of recidivism among sexual offenders with and without sexual preference disorders using the STATIC-99R instrument

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Abstract

Purpose: The STATIC-99 instrument is one of the tools used for the assessment of the risk of recidivism, in line with the actuarial approach. One of the risk factors indicated by the scientific literature as having the greatest significance is sexual preference disorder. The aim of the study was to verify whether sexual offenders diagnosed with sexual preference disorders have a higher risk of recidivism. The study also aimed to present, for the first time in Poland, a quantitative scoring of individual risk factors in STATIC-99R and their prevalence, allowing for the verification of the theoretical validity of the STATIC-99R instrument in the analysis of the population of sexual offenders in Poland.

Methods: The study material consisted of 100 court and penitentiary files of perpetrators of crimes against sexual freedom from 11 Polish penal institutions and remand centers. We used the STATIC-99R to evaluate each case.

Results: The distribution of the individual STATIC-99R risk factors in the population of the Polish sexual offenders is presented. The diagnosis of sexual preference disorders had no influence on the total STATIC-99R score but was associated with its individual factors.

Conclusions: It can be concluded that the theoretical validity of the STATIC-99R tool is also relevant to the Polish study population and may be used in clinical practice.

Key words: sexual offenders, paraphilic disorders, STATIC-99R.

INTRODUCTION

Estimating the risk of recidivism among perpetrators of sex crimes belongs to the area of competence of court sexology experts. In Poland, most often, the assessment is performed at the end of the sentence if the perpetrator has been diagnosed with sexual preference disorders, personality disorders, or intellectual disability. In these cases, the estimated risk of recidivism may determine whether post-penal measures, such as the transfer to the National Center for Dissocial Behavior Prevention, are applied [1].

Estimating the risk of recidivism should be performed in line with the actuarial approach [2]. This approach consists in performing a series of psychological tests and identifying the factors that have a statistically significant effect on the risk of recidivism. Based on the results of the tests, lists of factors are created, and subsequently risk factors with the best psychometric properties are extracted.

For a number of reasons, a structured clinical interview in the assessment of sexual offender recidivism tends to be more subjective compared to a statistical approach. In a structured clinical interview, the information gathered is largely based on the interpretation of the clinician or evaluator. Their judgments about the individual's behavior, responses, and demeanor can influence the overall assessment. This subjectivity can introduce bias or variation in how different clinicians interpret the same information. Moreover, clinical interviews typically lack quantifiable measures. They may focus on qualitative information, narrative accounts, and clinical impressions rather than statistical data or specific risk assessment tools that have been validated through empirical research.

One of the tools for the assessment of the risk of recidivism, in line with the actuarial approach, is the STATIC-99 instrument [2]. The STATIC-99 tool is completed by sexology experts based on official data regarding the nature

of the committed sexual offense. These include court and penitentiary files, as well as case files. In Poland, in selected cases, they can also be supplemented with data from the online register of sex offenders. Studies on the development of STATIC-99 were conducted in late the nineties in Canada and Great Britain, and its introduction was preceded by the analysis of the criminal files of a group of 1301 perpetrators of crimes against sexual freedom. STATIC-99R is available in several versions (STATIC-99, STATIC-99R) but there is no difference in accuracy of risk assessment between the versions [2]. The ten areas that are taken into account during the assessment include significantly the criminal history of the offender, as well as their age and characteristics of the victims.

The results of the studies using the STATIC-99 tool lead to the conclusion that, while the group of perpetrators against sexual freedom is not homogenous, there are general statistical features that increase the risk of sexual recidivism [4]. Generally, the younger the offender, the greater the risk of sexual recidivism, regardless of whether the victim is a minor or an adult [5]. It is indicated that the risk of sexual recidivism is lower in offenders with a history of a close relationship [6]. What is more, previous sentencing, the number of sentences and a history of violent crime (either sexual or non-sexual) are of great importance [2]. The risk of sexual recidivism is also increased in perpetrators with non-related or stranger victims, as well as with male victims [4]. STATIC-99 has been revised; the current version is STATIC-99R. Comparing the updated version of the STATIC-99R with the older STATIC-99, changes were made regarding the consideration of age for a more refined assessment of the risk of sexual offender recidivism. The inclusion of age-related adjustments in the STATIC-99R acknowledges the evolving understanding of how age influences the risk of reoffending among sexual offenders. Research has shown that the risk of recidivism might not follow a linear trajectory across all age groups. The new version accounts for this by fine-tuning the way age is factored into the overall risk assessment.

A variable that is indirectly taken into account in the STATIC-99R is the presence of paraphilic disorders (i.e. sexual preference disorders in ICD-11 [7]). Paraphilic disorders are defined as sexual preferences of a person that do not change significantly over time and are associated with a non-normative pattern of sexual arousal (the arousal can be caused by either an object or a specific situation) that cause mental distress to the person or put other individuals at risk of distress or is disabling to the person suffering from the disorder [3]. Although the risk factors assessed in the STATIC-99R include conviction for non-contact sexual offences, it cannot be stated that the instrument recognizes the very fact

of the occurrence of sexual preference disorders as a risk factor for recidivism. Non-contact sexual offences may be indirectly caused by specific sexual preferences, i.e., photographing minors to obtain pornographic material.

Pedophilic disorder and psychopathy are considered the two most important risk factors for sexual recidivism [8, 9]. Considering the definition of pedophilic disorder (assuming that it involves a permanent preference for sexual contact with minors over sexual contact with adults), this seems logical. According to the current state of knowledge, pedophilic disorder in itself is not curable, and the therapy for it is aimed at reduce sexual recidivism through teaching the offender to identify patterns of sexual arousal and investigate the factors that led to the offence [3]. It should be added that in the Polish judicial system, offenders diagnosed with sexual preference disorders are required to undergo therapy [1].

Static risk factors include those that rarely change over the course of a person's life. Dynamic risk factors include those that can change even within a few days of a person's life, for example the fact of having recently lost contact with a family member or currently undergoing a deterioration of emotional functioning. The STATIC-99R is focused on static factors, i.e., those that do not change often or do not change at all over lifetime for some people. For this reason, as good as the STATIC-99R is at making a standardized assessment of the risk of recidivism, it is frequently supplemented with other tools. An example is ACUTE-2007, which takes into account dynamic factors and is, in turn, frequently used together with another tool focusing on different static factors than STATIC-99R, STABLE-2007 [10]. Only by supplementing a STATIC-99R score with a comprehensive forensic-sexological examination, as well as other tools focused on dynamic factors, can a reliable estimate of the risk of recidivism be made [11].

The aim of the study was to determine whether the presence of sexual preference disorders can be considered a variable differentiating the STATIC-99R score. In line with the literature review undertaken, it was expected that sexual offenders diagnosed with sexual preference disorders will obtain a higher STATIC-99R score. Moreover, additional variables that may be important in the differentiation of a STATIC-99R score, including alcohol dependence, personality disorders, and education [2]. The following hypothesis was posed: "Persons diagnosed with sexual preference disorders obtain a higher STATIC-99R score than persons without these disorders".

METHODS

The analysis involved 100 court-penal cases of sexual offenders serving a sentence in one of the following facilities: Sztum Prison (Zakład Karny w Sztumie), Oleśnica Prison (Zakład Karny w Oleśnicy), Rawicz Prison

(Zakład Karny w Rawiczu), Głubczyce Prison (Zakład Karny w Głubczycach), Starogard Gdański Detention Center (Areszt Śledczy w Starogardzie Gdańskim), Warsaw-Służewiec Detention Center (Areszt Śledczy Warszawa-Służewiec), Racibórz Prison (Zakład Karny w Raciborzu), the External Department of Prison No. 2 in Strzelce Opolskie in Kędzierzyn-Koźle (Oddział Zewnętrzny Zakładu Karnego nr 2 w Strzelcach Opolskich w Kędzierzynie-Koźlu), and Prison No. 2 in Strzelce Opolskie (Zakład Karny nr 2 w Strzelcach Opolskich).

The analysis of documentation regarding sexual offenders only encompassed the records of individuals who consented to it. This approach is ethically appropriate as it respects the principle of voluntary participation in research, ensuring that individuals have the autonomy to decide whether to disclose their information or not. Respecting participants' autonomy aligns with ethical guidelines, ensuring confidentiality and protecting individuals' privacy rights. It upholds the fundamental principle of informed consent, where individuals are empowered to make choices regarding their involvement in research, maintaining ethical standards and safeguarding their rights.

The research group consisted of individuals serving a sentence due to the commission of at least one sexual offense. The data required for the assessment with STATIC-99R were based on the analysis of the court and penitentiary files of 100 persons convicted for crimes against sexual freedom. In addition to the information required for the analysis of risk factors in STATIC-99R, basic demographic data and data about the nature of the crime committed were collected.

Data were collected from the court and penitentiary files by the first author of the paper. Next, they were coded by the author in accordance with the coding STATIC-99R rules [2]. The process of collecting the files consisted of several stages. A total of 148 court and penitentiary files of persons giving their consent were included in the first stage. 100 court and penitentiary files were qualified to be used the second stage. Individual files were rejected due to a rigorous approach to the factors involved in the coding. If relevant data concerning at least one risk factor was missing, the risk of recidivism was not calculated for the offender, with the exception of, according to the coding rules, information on having stayed in a romantic relationship lasting at least 2 years.

Minimal group sizes were estimated based on similar studies [2]. Minimal group sizes were estimated. It was assumed that a group size of at least 50 study participants would be necessary to observe potential effects with a power of 0.95.

The study participants included both offenders who had sexually abused minors ($n = 72$) and those who had committed a sexual crime against an adult ($n = 37$). The sum of the number of offenders who had committed

crimes against minors and adults is greater than the total number of participants, as the study group included persons who had committed sexual crimes against both minors and adults.

The analysis of the results was conducted in accordance, as already noted, with the coding rules of the STATIC-99R instrument [2]. We used the official supplement for a revised version in a Polish adaptation. STATIC-99R consists of 10 risk factors, each of them evaluated according to strict coding rules. It is required to provide answers with a reliable justification from the files of the person concerned. The instrument enables an evaluation of the risk of recidivism of a person. STATIC-99R risk categories include low (from 0 to 1 point), low-moderate (from 2 to 3 points), high-moderate (from 4 to 5 points), and high (6 points and above). According to statistical data, on average 39% of persons with a high risk of recidivism commit another sexual crime over the next 5 years, 45% over the next 10 years, and 52% over the next 15 years. The total risk of recidivism for any violent crime is on average 44% over the next 5 years, 51% over the next 10 years, and 59% over the next 15 years. The diagnosis was not established by the authors of this paper. The criterion is met if the person's records state that there is a forensic sexological or psychiatric opinion in which the diagnosis was made.

Test-retest reliability index was 0.94 for an interval of six months. The calculation was based on the total score of the person based on STATIC-99R risk factors.

R library (version 4.0.3) was used to make calculations.

Court and penitentiary files were not included in the study if a participant expressed no consent to a parallel psychological study. The approval of the Ethical Committee of the Institute of Psychiatry and Neurology for conducting a series of studies as a part of the Diamond Grant (DI 16/003046).

RESULTS

The data of the research sample relating to demographics, education, previous psychiatric diagnoses, and the results of statistical comparisons between the group of sexual offenders depending on the diagnosis of sexual preference disorders were presented in Table 1.

The aim of the statistical analysis was to determine whether different levels of variables – such as alcohol dependence or its absence, personality disorders or their absence, and educational levels (primary, vocational, secondary, higher) – significantly differentiated the results of STATIC-99R. A one-way analysis of variance (ANOVA) was conducted, with alcohol addiction ($F = 0.770, p = 0.466, df = 1$), personality disorders ($F = 1.449, p = 0.240, df = 1$) and education ($F = 0.399, p = 0.672, df = 3$) as factors, and total STATIC-99R score as the dependent variable. No sta-

Table 1. Basic demographic data of the study group. No percentage values were provided, as the total number of files was 100. Statistical significance between persons with sexual preference disorders ($n = 54$) and persons without these disorders ($n = 46$) was indicated

Variable	Value	Comparison between groups
Age	$M = 41.8, Me = 41, SD = 13.031$	No statistically significant difference was found ($t = 1.017, df = 98, p = 0.312$)
Region of residence	Rural ($n = 30$) Urban below 100 thousand ($n = 36$) Urban above 100 thousand ($n = 34$)	No statistically significant difference was found ($\chi^2 = 1.503, df = 2, p = 0.472$)
Education	None ($n = 2$) Primary ($n = 33$) Vocational ($n = 36$) Secondary ($n = 21$) Higher ($n = 8$)	A statistically significant difference was found ($\chi^2 = 10.258, df = 5, p = 0.036$)
Coexistence of somatic diseases	Yes ($n = 11$) No ($n = 89$)	No statistically significant difference was found ($\chi^2 = 0.363, df = 1, p = 0.547$)
Sexual preference disorders	Yes ($n = 54$) No ($n = 46$)	NA
Diagnosed with psychotic disorders	Yes ($n = 1$) No ($n = 99$)	No statistically significant difference was found ($\chi^2 = 1.164, df = 1, p = 0.281$)
Diagnosed with alcohol addiction	Yes ($n = 26$) No ($n = 74$)	No statistically significant difference was found ($\chi^2 = 2.451, df = 1, p = 0.117$)
Diagnosed with personality disorders	Yes ($n = 36$) No ($n = 64$)	No statistically significant difference was found ($\chi^2 = 1.828, df = 1, p = 0.176$)
Head injuries in the past	Yes ($n = 18$) No ($n = 82$)	No statistically significant difference was found ($\chi^2 = 0.406, df = 1, p = 0.524$)

Table 2. Data on the article under which the perpetrators were convicted

Article of the Penal Code	Number of persons convicted under the article ¹	Article of the Penal Code	Number of persons convicted under the article
art. 197 ² § 1	36	art. 200 § 3	3
art. 197 § 2	15	art. 200 § 4	2
art. 197 § 3	12	art. 200a ³ § 1	2
art. 197 § 4	1	art. 200a § 2	4
art. 198 ⁴	5	art. 201 ⁵	6
art. 199 ⁶ § 2	3	art. 201 § 1	2
art. 199 § 3	5	art. 202 ⁷ § 1	1
art. 199 § 1	2	art. 202 § 2	2
art. 200 ⁸ § 1	46	art. 202 § 3	7
art. 200 § 2	1	art. 202 § 4	15

¹The sum of the number of persons convicted under all the articles is greater than the total number of participants, as it was often the case that a person was convicted for more than one article.

²Article of the Penal Code on rape and extortion of sexual activity.

³Article of the Penal Code on electronic contact with a minor for pedophile purposes.

⁴Article of the Penal Code on sexual exploitation of another person's helplessness or insanity.

⁵Article of the Penal Code on incest.

⁶Article of the Penal Code on sexual exploitation of a dependency or critical position.

⁷Article of the Penal Code on pornography.

⁸Article of the Penal Code on sexual abuse of a minor.

tistically significant differences were found, therefore, no post-hoc tests were conducted.

Data on the article under which the perpetrators were convicted are presented in Table 2.

As shown in Table 2, the subjects were most frequently convicted of committing a crime under the art. 200 § 1 of the Polish Penal Code: "Whoever has a sexual inter-

course with a minor [...]" Another frequent reason for conviction was a crime under art. 197 § 1: "Whoever forces another person to sexual intercourse by violence, unlawful threat, or deceit [...]". It is also worth noting that the most prevalent non-contact sexual offence was a crime under art. 202 § 4: "Whoever records pornographic content involving a minor [...]".

Table 3. Distribution of STATIC-99R risk factors in the study group

Item	STATIC-99R category (risk factor)	Number of points in each category ¹
1	Score according to the offender's age at time of release – flat minimum release date	0 points (<i>n</i> = 82) ² 1 point (<i>n</i> = 8) -1 point (<i>n</i> = 10)
2	Ever lived with lover for at least 2 years	0 points (<i>n</i> = 52) ³ 1 point (<i>n</i> = 48)
3	Index non-sexual violence – any convictions	0 points (<i>n</i> = 67) ⁴ 1 point (<i>n</i> = 33)
4	Prior non-sexual violence – any convictions	0 points (<i>n</i> = 83) ⁵ 1 point (<i>n</i> = 17)
5	Prior sexual offences	0 points (<i>n</i> = 73) ⁶ 1 point (<i>n</i> = 25) 2 points (<i>n</i> = 1) 3 points (<i>n</i> = 1)
6	Number of prior sentencings	0 points (<i>n</i> = 91) ⁷ 1 point (<i>n</i> = 9)
7	Any convictions for non-contact sexual offences	0 points (<i>n</i> = 76) ⁸ 1 point (<i>n</i> = 24)
8	Any unrelated victims	0 points (<i>n</i> = 32) ⁹ 1 point (<i>n</i> = 68)
9	Any stranger victims	0 points (<i>n</i> = 76) ¹⁰ 1 point (<i>n</i> = 24)
10	Any male victims	0 points (<i>n</i> = 81) ¹¹ 1 point (<i>n</i> = 19)

¹Detailed coding rules are presented in the coding manual (Harris et al., 2018). Only general coding rules are presented in order to further discuss the characteristics of the study group.

²1 point if the subject was aged 18 to 34.9, 0 point if the subject was aged 35-39.9, -1 point if the subject was aged 40 to 59.9.

³0 points if the subject has ever lived with a lover for at least two years, 1 point if the subject has never lived in such a relationship.

⁴0 points if no, 1 point if yes.

⁵0 points if no, 1 point if yes.

⁶0 points if there were no charges and no convictions, 1 point if there were 1-2 charges or 1 conviction, 2 points if there were 3-5 charges or 2-3 convictions, 3 points if there were 6+ charges or 4+ convictions.

⁷0 points if 3 or less, 1 point if 4 or more.

⁸0 points if no, 1 point if yes.

⁹As above.

¹⁰As above.

¹¹As above.

Results in individual categories of the STATIC-99R are presented collectively for all the sexual offenders in Table 3.

The conducted tests for the normal distribution show that the data does not have a normal distribution (the Lilliefors adaptation of the Kolmogorov-Smirnov test was 0.133, *p* < 0.001), being clearly right-skewed (coefficient of skewness was 0.442) and platykurtic (-0.376).

Using the Student's *t*-test, a comparison of the mean total STATIC-99R score in the group of subjects with sexual preference disorders and in the group of subjects without sexual preference disorders was performed¹.

¹ In the case of an independent samples *t*-test, the assumption of normality in the distribution of scores can be disregarded if the sample size is sufficiently large. Larger sample sizes tend to lead to robustness against violations of normality assumptions, allowing the *t*-test to remain valid and reliable. This assertion is based on the central limit theorem, which suggests that with larger sample sizes, the distribution of sample means tends to approach a normal distribution, even if the underlying population distribution may not be perfectly normal (see Cohen J, Cohen P, West SG, Aiken LS. Applied multiple regression/correlation analysis for the behavioral sciences. Routledge; 2003).

Table 4. Descriptive statistics of the total STATIC-99R score of the studied group of perpetrators of offences against sexual freedom

	Statistics for all subjects	Statistics for sexual offenders diagnosed with paraphilic disorders
Sum	<i>n</i> = 100	<i>n</i> = 54
Mean	<i>M</i> = 2.80	<i>M</i> = 2.70
Standard deviation	<i>SD</i> = 1.676	<i>SD</i> = 1.436

There was no statistically significant difference between the groups (*p* = 0.536; see also Table 4). In Table 1, differences in the distribution of the demographic variables between the groups were also taken into account. The groups differed only in the level of education; there were no differences in other aspects between the groups.

Using the chi-square test of independence, an analysis of the frequency distribution was performed. For the following pairs of variables, the result was not statistically significant: sexual preference disorders and risk factor

Table 5. Comparison of the incidence of risks factors in persons with and without sexual preference disorders

Risk factor no. 3 (index non-sexual violence – any convictions)	Persons diagnosed with sexual preference disorders more frequently scored 0 points in risk factor no. 3 ($\chi^2 = 11.316$, $df = 1$, $p = 0.001$). The effect size was small ($\Phi = 0.334$).	0 points	1 point
	Sexual preference disorder	44 (81.5%) ¹	10 (18.5%)
	No sexual preference disorder	23 (50%)	23 (50.0%)
Risk factor no. 4 (prior non-sexual violence – any convictions)	Persons diagnosed with sexual preference disorders more frequently scored 0 points in risk factor no. 4 ($\chi^2 = 7.883$, $df = 1$, $p = 0.005$). The effect size was small ($\Phi = 0.277$).	0 points	1 point
	Sexual preference disorder	50 (92.6%)	4 (7.4%)
	No sexual preference disorder	33 (71.7%)	13 (28.3%)
		0 points	1 point
	Sexual preference disorder	34 (63.0%)	20 (37.0%)
	No sexual preference disorder	42 (91.3%)	4 (8.7%)
Risk factor no. 7 (any convictions for non-contact sex offences)	There was a statistically significant difference in the occurrence of risk factor no. 7 between subjects diagnosed with sexual preference disorders and without a diagnosis of such ($\chi^2 = 11.847$, $df = 1$, $p = 0.001$). The effect size was small ($\Phi = 0.331$).	0 points	1 point
	Sexual preference disorder	34 (63.0%)	20 (37.0%)
	No sexual preference disorder	42 (91.3%)	4 (8.7%)
Risk factor no. 10 (any male victims)	There was a statistically significant difference in the occurrence of risk factor no. 10 between subjects diagnosed with sexual preference disorders and without a diagnosis of such ($\chi^2 = 6.253$, $df = 1$, $p = 0.012$). The effect size was small ($\Phi = 0.242$).	0 points	1 point
	Sexual preference disorder	39 (72.2%)	15 (27.8%)
	No sexual preference disorder	42 (91.3%)	4 (8.7%)

¹The percentages refer to the variable of the presence of the sexual preference disorder.

no. 2² related to the absence of a romantic relationship ($\chi^2 = 2.699$, $df = 1$, $p = 0.100$), no. 8 related to committing a crime against an unrelated victim ($\chi^2 = 1.381$, $df = 1$, $p = 0.240$), no. 9 related to committing a crime against a stranger victim ($\chi^2 = 0.203$, $df = 1$, $p = 0.652$). No calculations for the following risk factors were performed due to an insufficient number of observations: no. 1a (concerning the age of the offender), no. 5 (concerning prior sexual offences), and no. 6 (concerning the number of prior sentences). The following frequency distribution tables present the statistically significant results with their statistics (see Table 5). The risk of recidivism based on the total STATIC-99R score is shown in Table 6.

DISCUSSION

A study was conducted involving the analysis of the court and penitentiary files of Polish perpetrators of crimes against sexual freedom, aiming to determine whether the presence sexual preference disorders may influence the STATIC-99R score. The aim of the study was also to present the prevalence of individual STATIC-99R risk factors in the Polish population of sexual offenders. This is the first study of this kind on a group of Polish sexual perpetrators.

² Individual risk factor numbers correspond to Table 3.

Table 6. Risk of recidivism based on the total STATIC-99R score

Qualitative representation	Frequency, <i>n</i>	Cumulative percentage
Low risk	27	27
Low-moderate risk	41	68
High-moderate risk	24	92
High risk	8	100

The distribution of the total STATIC-99R score is not a normal one. There is a significant overrepresentation of persons who scored 1 point in total (see Table 3). The results obtained after the transformation into a qualitative interpretation are presented in Table 6. These results are generally consistent with results obtained on the population of sexual offenders from other countries, namely in Canada, USA, and Sweden [12]. Sexual offenders most frequently score from 0 to 3, and higher scores are less common (for example, 2 points correspond to the 20th percentile).

The interpretation of these results, assuming that the study only included subjects who agreed to participate in a parallel psychological examination, may be relatively simple. The court and penitentiary files of subjects who have not issued their consent, as well as incomplete data, were not included in the study. Consequently, the results

may be biased because of the selection of the files for the study. It may be assumed that persons who are more conciliatory and whose offence was less damaging to the victim were more likely to participate in the study. However, it should be noted that in studies on different clinical populations, including the population of sexual offenders against minors, the percentage of subjects refusing to participate or excluded from the study due to a failure to meet other criteria set by researchers usually reaches several dozen percent (in this study, 48 persons, i.e. 32.4% of the initial study population, were excluded). For example, in a study on incarcerated sexual offenders against minors conducted by Maria Beisert, the final analysis included 248 of 389 initially selected persons, i.e., 36.2% were rejected [13].

According to the hypothesis, persons diagnosed with sexual preference disorders obtain higher STATIC-99R scores than those without the diagnosis. It is indicated that the occurrence of sexual preference disorders, along with psychopathy, significantly increases the risk of sexual recidivism [14]. One of the reasons for this is that sexual preference disorders are, according to the current state of knowledge, incurable [15]. Also, according to the recommendations of the Polish Sexological Society [16] on the treatment of sexual offenders, the aim of the therapy of sexual perpetrators is not to cure the sexual preference disorders themselves, but to develop the ability to control sex drive. Both psychotherapy [9] and pharmacological therapy [17] are considered effective in the treatment of sexual offenders.

Interestingly, the diagnosis of sexual preference disorders had no influence on the total STATIC-99R score but was associated with its individual factors. There were no statistically significant differences for some factors, such as with living with a lover for at least 2 years and having a victim that was unrelated or a stranger to the perpetrator. The results suggesting that sexual offenders diagnosed with sexual preference disorders are not more likely to have sexual intercourse with an unknown or unrelated victim are not surprising, and similar results can be found in other papers [2]. However, no statistically significant relationship concerning the history of living with a lover for at least two years is particularly interesting. Based on a literature review [18], it was expected that subjects diagnosed with sexual preference disorders will be less likely to have a history of this kind of relationship.

Due to an insufficient number of data points, the relationship between having previously committed sexual crimes and the occurrence of sexual preference disorders was not conducted. According to the characteristics of sexual preference disorders [19] such a relationship could be expected. However, subjects diagnosed with sexual preference disorders were more likely to obtain 0 points for risk factors no. 3 and no. 4, i.e. they were less likely to commit a non-sexual violent crime (see

Table 5). These results are consistent with the observations suggesting that non-preferential perpetrators (which often include perpetrators found guilty of sexual violence against adults) may be characterized by a higher level of general violence [20] when compared to preferential perpetrators, whose aim is to satisfy their sexual needs through contact with a minor.

There was a statistically significant relationship between sexual violence against male victims and having been convicted for non-contact sexual offences (see Table 5). This is consistent with the observation that offenders diagnosed with sexual preference disorders are more likely to commit a non-contact sexual offence [21]. Moreover, perpetrators diagnosed with sexual preference disorders are more likely to engage in sexual contact with minors of both sexes [22].

There are publications on the accuracy of risk of sexual recidivism, conducted on a population of sexual offenders in Switzerland [23], a selected state in the USA [24], and Germany [25]; however, similar studies have not been conducted in Poland. In general, the original STATIC-99R was found to be suitable for use in various countries, though one study pointed to the fact that developing local standards could provide more accurate results [24]. This type of research is important, because referencing STATIC-99R results for the local population of sexual offenders may be the basis for using this tool in a given country.

In the context of these results, attention should be brought to a study by a Polish team of researchers who conducted an analysis of the forensic and sexological files of Polish sexual offenders [26]. The results indicated that the majority of sexual offenders against minors (73%) committed the crime for reasons unrelated to sexual preference disorders. Comparing our results to the results by Heitzman *et al.* [26], it can be observed that the prevalence of sexual preference disorders in our study group is different; however, this is a consequence of the deliberate selection of the study participants for our study. Nonetheless, it should be noted that in the study by Heitzman *et al.* [26] a relatively small proportion of sexual offenders had personality disorders (16.3% vs. 36.0% of our study population), which may be the consequence of the deliberate selection of the participants for our sample; however, the personality disorders were not associated with the occurrence of sexual preference disorders.

As presented in Table 3, most frequently, the points in STATIC-99R were given for an offence against an unrelated victim, as well as a negative history of a lover of at least 2 years. These observations are consistent with the distribution of the risk factors presented for other populations [23-25].

Based on the results, it can be concluded that the diagnosis of sexual preference disorders significantly differentiates individual partial STATIC-99R scores. This observation suggests that the theoretical validity

of the STATIC-99R tool is also relevant to the Polish study population. Therefore, the results of the study allow us to conclude that this instrument in its Polish adaptation of the STATIC-99R can be used for the examination of Polish perpetrators against sexual freedom. The theoretical validity of the STATIC-99R tool can be assumed to correspond to the characteristics of Polish population.

The limitations of the study include using STATIC-99R as the only tool for risk assessment. A STATIC-99R score is often complemented by results of other tools, such as ACUTE-2007, which does not analyze static risk factors (as is the case for the STATIC-99R) but takes into account factors that may change over the life of the subject [27]. Static risk factors include those that rarely change during a lifetime, such as the number of sentences or history of male victims. Dynamic risk factors include those that can change even within a few days of a person's life, for example the fact of having recently lost contact with a family member or currently undergoing a deterioration of emotional functioning. Taking into account both static and dynamic factors allows an expert to create a comprehensive overview of the functioning and history of the person examined and their risk of recidivism. What is more, the clinical risk assessment includes a forensic and sexological interview, which is an integral part of the opinion issued for the forensic proceedings.

Another limitation of the study is the fact that the results were coded by one person. The study's limitation

lies in the single evaluator conducting the assessments. The work had to be solitary due to its preparation for a doctoral dissertation. The individual conducting the evaluations had received formal education in sexology at the time of the assessments. However, this seems to not have had a major impact on the results, as the consistency rate for two experts, understood as a double coding of the same cases by two different experts, is high for STATIC-99R [28].

CONCLUSIONS

Continuing further scientific research on estimating the risk of sexual offender recidivism is crucial for several reasons. Firstly, ongoing research allows for the improvement and refinement of existing risk assessment tools. Continuous study and analysis help in identifying more accurate predictors and factors associated with sexual recidivism, leading to the development of better assessment methods. Secondly, deeper research helps enhance our understanding of the complex nature of sexual offending behavior, contributing to the development of more effective prevention strategies. Finally, insights gained from ongoing research can inform the design and implementation of treatment for sexual offenders. Understanding the factors that contribute to recidivism helps in tailoring interventions that address these specific risk factors.

Conflict of interest

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