Original article

Quality of records on sexual violence against women in the Information System for Notifiable Diseases (Sinan) in Santa Catarina, Brazil, 2008-2013*

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Abstract

Objective: to describe the quality of records on cases of sexual violence against women, reported in the Information System for Notifiable Diseases (Sinan), in Santa Catarina State, Brazil, from 2008 to 2013. **Methods**: normative assessment with data from records of sexual violence cases against women (≥10 years old); data quality was described according to the dimensions 'non-duplicity' (acceptable when >95%), 'completeness' (good when >75%), and 'consistency' (excellent when >90.0%) of information. **Results**: 2,010 cases of sexual violence against women were studied, after the exclusion of four duplicate records; the percentage of non-duplicity was 99.9% (acceptable); of completeness was 93.3% (good) and of consistency was 98.9% (excellent). **Conclusion**: the results presented point out the usefulness of Sinan as a source of information for the surveillance of sexual violence against women and for planning actions to tackle this type of aggression.

Keywords: Sex Offenses; Women; Adolescent; Notification; Epidemiology, Descriptive.

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Introduction

Sexual violence against women is understood as any sexual act, attempt to obtain a sexual act, comments or unwanted sexual advances, in any way, directed against the sexuality of the woman, using coercion, practiced by any person, regardless of their relationship, in any setting, including the household and working place, but not limited to them.[1] This violence often occurs in private situations, within families and at home, in relationships between intimate partners, relatives, friends and acquaintances.[2]

The World Health Organization (WHO) estimates that one in three women suffered physical or sexual violence at some point in their lives worldwide.[3] In Brazil, in 2005, one in ten women aged 16 to 65 reported at least one occurrence of sexual violence in their lives, identifying intimate partners as their aggressors.[4]

This kind of violence is considered one of the most hideous,[5] because they are gender-related, based on machismo, on the subjugation of women's body as an object for men and, therefore, on the loss of their autonomy as individuals.[6]

> *Sexual violence against women is an event of compulsory notification in health services, whether public or private.*

The notification of sexual violence against women in the Health sector is performed by filling a notification form, whose information is included into the Information System for Notifiable Diseases (Sinan), a system of epidemiological surveillance. The filling of the violence notification form is essential to epidemiological and operational analysis, and to the analysis of sexual violence, in the construction of the case profile.

Sexual violence against women is an event of compulsory notification in health services, whether public or private. The ordinance GM/MS No. 2,406, dated November 5th, 2004,[7] approved the notification instrument and flow. Sinan is responsible for providing information for the situation diagnosis, which can subsidy actions to tackle violence. Since 2014, the notification of sexual violence, besides being compulsory, has become immediate, being communicated to the epidemiological surveillance in 24 hours at the latest, from the knowledge of the case occurrence.[8] The objective of the immediate notification is to speed up assistance for the assaulted woman and to enable her access to emergency contraception, prophylactic measures of sexually transmitted infections (STIs) and viral hepatitis within 72 hours of the aggression.[9]

It is important to highlight that a study carried out in Belo Horizonte, Minas Gerais State, in 2011,[10] identified difficulties for health professionals to report violence against women. Among the difficulties, the lack of knowledge about the notification and the actions to be taken, as well as the non-notification of violence for fear of retaliations, difficulty or embarrassment in completing the form, or even an overload in the daily routine of the service. The challenge of the Health sector and its professionals lies in the recognition of the violence and the importance of its notification as a step of attention and care in health networks. Quality information enhances the structuring of these services.

The main purpose of surveillance systems is to provide valid, reliable information and to guide the interventions.[11] Understanding and promoting the quality of sexual violence data included in Sinan can contribute to the strengthening of the surveillance system for this condition. However, there are few studies that analyze the quality of Sinan data, especially for violence.

In view of this scenario, the objective of this study was to describe the quality of the case records on sexual violence against women reported in the Information System for Notifiable Diseases (Sinan) in Santa Catarina State, Brazil, from 2008 to 2013.

Methods

This is a normative assessment, with Sinan data referring to reports of suspected and confirmed cases on sexual violence against women and adolescents living in Santa Catarina, in the period from 2008 to 2013.

Santa Catarina State, located in the South region of Brazil, has a population of 6,439,389 inhabitants, of whom 50.4% are women, according to data from Brazilian Institute of Geography and Statistics (IBGE) in 2012.[12]

The information was recorded in the notification form of violence and included into Sinan by health professionals of municipal level, in Santa Catarina State, region of this study. Sinan is a system of national coverage, decentralized to municipalities.

The municipalities insert the data of notifiable diseases and conditions – among them, the sexual violence – destined to compose the state and national data bank of the system. The adherence of health services to notification in Santa Catarina has occurred gradually, since 2007, through agreements between state and municipalities managers, under the coordination of the Epidemiological Surveillance of Non-communicable Diseases and Conditions of the State Health Department.

In this study, all the notifications of sexual violence against women aged 10 years or more – without upper age limitation – were included. The age of 10 was defined according to the National Policy of Comprehensive Care to Women's Health of the Ministry of Health[13] and to the WHO delimitation for the adolescence phase: 10 to 19 years.[14]

Data quality was described according to the following dimensions: non-duplicity, completeness and consistency of information.[15,16] The analysis of information completeness and consistency contained in the violence notification form followed the criteria established by the Ministry of Health[15] and by Abath et al.[17] Non-duplicity is understood as the proportion in which each event in the coverage universe of an information system is presented only once in a set of records.[15] According to Abath et al., a 95% of non-duplicity is acceptable.

Completeness is understood as the proportion by which the records of an information system displays not null values. The fields considered null or incomplete are those filled as unknown and those left blank.[15] For the analysis of the completeness ratio of the variables, Abath et al.[17] propose completeness equal to or higher than 75.1% as good, regular from 75.0 to 50.1%, low from 50.0 to 25.1% and very low when equal to or less than 25.0%.

According to the Ministry of Health,[15] consistency is the proportion with which related variables present coherent, non-contradictory values. Abath et al.[17] and Souza et al.[18] propose the analysis of the consistency proportion as excellent for results equal to or higher than 90.0%, regular from 70.0 to 89.0% and low when it is lower than 70.0%.

The detection of notifications duplicity was performed by exporting the report to Tabwin of possibly duplicate cases, from the following key variables: first/last name; notification number; occurrence date; mother's name; date of birth; sex; violence notification date; and notifying unit.[19] On the report of possibly duplicate cases, the analysis was performed case-by-case, manually. When duplicity was confirmed, one of the records of each duplicate case was excluded.

For the completeness analysis, we selected 59 variables from the notification form, representing 83.0% of the total variables in that document:

1. Demographic (ethnicity/skin color; education level; marital status; occupation; municipality of occurrence);
2. If the woman has any type of disability/disorder.
3. If the woman is pregnant;
4. Time of occurrence and place of occurrence;
5. It happened other times (repetition of violence);
6. Other sexual violence (if it happened, which type: another sexual violence; sexual exploitation; pornography; sexual offense; sexual harassment);
7. Procedure performed (abortion as provided by law; emergency contraception; collection of vaginal secretion; semen collection; blood collection; hepatitis B prophylaxis; HIV prophylaxis; bacterial STI prophylaxis.
8. Lesion (nature of lesion; part of the body struck);
9. Relationship with the assaulted woman (other relationships with the assaulted woman; the woman herself; police officer/law agent; person with institutional relationship; boss/employer; caregiver; friends/acquaintances; brother/sister; unknown person; son/daughter, ex-boyfriend/ex-girlfriend; boyfriend/girlfriend; ex-partner; partner; stepfather; mother; father);
10. Number of involved (aggressors)
11. Probable sex of the aggressor;
12. Suspicion of alcohol use;
13. Referral to the health sector;
14. Referral to other sectors (Forensic Medicine Institute [FMI], Specialized Reference Center for Social Assistance [CREAS], Women's Reference Center, Prosecution Office; other police station, Specialized Police Station for Child and Adolescent Protection [DPCA]; Specialized Police Station for Women [DAM]; Sentinel Service, Shelter House, Child and Youth Court, Guardianship Council); and
15. Evolution of the case.

All variables were analyzed with regard to their completeness from 2008 to 2013, by calculating the percentage and the average of complete fields in each

year. In order to verify if there was a difference in the proportion of fields filled as unknown and in blank, over the years studied, the same variables were tested in relation to the year of occurrence, with the linear trend test.

In order to verify the consistency, the following comparisons were made between the variables categories in the notification form of violence:

a) Age (equal to 10 years old) versus education level (5 or more years of schooling);
b) Sexual violence (yes) versus type of sexual violence (not for all types of violence);
c) Type of sexual violence (child pornography) versus age (>19 years);
d) Sex of the aggressor (male) versus relationship with the victim (mother);
e) Sexual violence (yes) versus final outcome (inconclusive/unknown/blank);
f) Relationship of the aggressor with the victim (unknown) versus relationship (yes to any other relationship with the victim).

For each comparison, the pairing of the indicated categories was considered as inconsistency.

The number of notifying units in each year of the period was also described. The notifications of sexual violence were extracted from Santa Catarina Sinan databank on May 16th, 2014, using the Tabwin software, version 3.6b. The analyses were carried out with the statistical software Stata (Stata Corp College Station, United States of America), version 13.0.

The study was approved by the Committee of Ethics in Research with Human Beings of the State Health Department of Santa Catarina (CEPSH/UDESC): Report No. 550,496, on March 26th, 2014. The data were provided after signing of the Responsibility Statement to use the database.

Results

Among the 15,508 records of violence against women aged 10 years or over, in the period from 2008 to 2013, 2,029 cases were of sexual violence, representing 13.0% of the total. Among those cases of sexual violence, 15 victims did not live in Santa Catarina, so they were not considered in this study. The analyzed database initially included 2,014 cases, of which there were four record duplicities, one in 2011 and three in 2013, resulting in a non-duplicity percentage of 99.9%, considered acceptable. After all, 2,010 notifications were analyzed.

There was an increase in the number of notifications during the analyzed period, compatible with the increase in the number of notifying units from four (2008) to 188 (2013). It is important to highlight the prevalence of notified cases in the age group from 10 to 14 years (Table 1).

The lowest completeness was observed in the variable 'time of the occurrence' (67.2%), and the highest, in the variable 'sex of the probable aggressor' (98.7%). The proportion of completeness, taking all 59 variables, was of 93.3%, considered good (Tables 2 to 4).

For 17 variables, the linear trend test showed a statistically significant difference in its completeness over the period ($p < 0.05$). Among these 17 variables, 11 presented an increase in the completeness percentage and 6 had a decrease, when observing the edges of time series (2008 to 2013) (Tables 2 to 4).

Taking the total of variables assessed in the period, the consistency percentage was of 98.9%, considered excellent. The smallest percentage was observed in the comparison between the categories of variables 'sexual violence - yes' and 'final outcome - inconclusive/unknown/blank' (96.7%) (Table 5).

Table 1 – Number and percentage of notified cases involving sexual violence against women (≥10 years old) according to age range and number of notifying units, Santa Catarina, 2008-2013

Age (in years)	2008		2009		2010		2011		2012		2013		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
10-14	19	70.4	70	50.0	125	50.5	202	47.2	237	44.9	297	46.7	950	47.3
15-19	4	14.8	30	21.4	51	20.5	101	23.6	115	21.7	149	23.3	450	22.4
≥20	4	14.8	40	28.6	72	29.0	125	29.2	177	33.4	192	30.0	610	30.3
Total	27	100.0	140	100.0	248	100.0	428	100.0	529	100.0	638	100.0	2,010	100.0
Notifying units	4		46		89		136		156		188			

Table 2 – Number and percentage of filled fields in the notification/investigation form of sexual violence according to characteristics of the woman (≥10 years of age) and of the aggression, Santa Catarina, 2008-2013

Variables/ Information fields	Notification year (number of cases)														p-value[a]
	2008 (N=27)		2009 (N=140)		2010 (N=248)		2011 (N=428)		2012 (N=529)		2013 (N=638)		Average		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Ethnicity/skin color	26	96.3	138	98.5	242	97.5	419	97.9	519	98.1	616	96.5	327	97.5	0.676
Education level	23	85.1	117	83.5	213	85.8	361	84.3	455	86.0	527	82.6	283	84.6	0.109
Marital status	26	96.3	117	83.5	194	78.2	388	90.6	488	92.2	582	91.2	299	88.7	0.010
Disability/disorder	27	100.0	136	97.1	241	97.1	416	97.2	514	97.1	613	96.0	325	97.4	0.924
Occupation	26	96.3	105	75.0	166	66.9	309	72.1	406	76.7	520	81.5	255	78.1	0.878
Pregnant	23	85.1	124	88.5	218	87.9	397	92.7	502	94.8	588	92.1	309	90.2	0.010
Municipality of occurrence	26	96.3	127	90.7	207	83.4	416	97.2	513	96.9	613	96.0	317	93.4	0.010
Time of occurrence	14	51.8	105	75.0	169	68.1	302	70.5	371	70.1	433	67.8	322	67.2	0.928
Place of occurrence	27	100.0	135	96.4	235	94.7	397	92.7	507	95.8	610	95.6	319	95.9	0.961
Occurred other times	25	92.5	130	92.8	230	92.7	394	92.0	502	94.9	585	91.6	311	92.8	0.195
Other sexual violence	27	100.0	133	95.0	222	89.5	410	95.7	494	93.3	617	96.7	317	95.0	0.067
Sexual exploitation	27	100.0	136	97.1	233	93.9	413	96.5	497	93.9	621	97.3	321	96.4	0.405
Pornography	27	100.0	136	97.1	234	94.3	410	95.7	498	94.1	621	97.3	321	96.4	0.787
Sexual offense	20	74.0	135	96.4	234	94.3	409	95.5	500	94.5	622	97.4	320	92.0	0.002
Rape	18	66.6	107	76.4	231	93.1	415	96.9	510	96.4	629	98.5	318	88.0	0.006
Sexual harassment	25	92.5	134	95.7	231	93.1	412	96.2	522	98.6	622	97.4	324	95.6	0.256

a) Linear trend test.

Discussion

Considering the analyzed criteria, sexual violence notifications in the studied period had percentages of non-duplicity and consistency close to 100%, which is perfectly acceptable, and completeness close to 95%, considered excellent.

For the dimensions studied, the data quality of sexual violence notifications in Santa Catarina during the analyzed period had a better result than that found by Abath et al. in the study of all types of violence recorded into Sinan bank in Recife, from 2009 to 2012,[17] when 0.3% of duplicity, 70.3% of completeness and 99.0% of consistency were detected. The most consistent results of this study corroborate Veloso et al.,[20] who, for Belém, Pará State, identified a greater commitment of health professionals with the registry when the case involved children and adolescents, especially in cases of sexual abuse, from 2009 to 2011.

In the present study, the age group from 10 to 14 years was predominant: almost half of the victims, among the reported cases, were at that age. When we add to these cases, the notifications referring to the age group from 15 to 19 years, it summed 69.7% of total notifications in the state. This percentage is higher than that found in similar studies, such as the one conducted in Belém (2009 to 2011)[20] and Recife (2012),[21] with 45.9% and 43.0%, respectively, for adolescents aged 10 to 19. The finding presented here may reflect a greater sensitivity of professionals from Santa Catarina in the identification and notification of sexual violence for this age group.

There was a large increase in the number of notifications of sexual violence against women in Santa Catarina during the period studied, which suggests the strengthening of the surveillance on sexual violence against women by health services. The actions developed by the State Health Department in partnership with the Ministry of Health and municipalities, from the decentralization of Sinan, as well as the qualification programs carried out by the state during this period, aimed at raising awareness and preparing health

Table 3 – Number and percentage of filled fields in the notification/investigation form of sexual violence against women (≥10 years of age) according to performed procedures, injury suffered and referrals, by notification year, Santa Catarina, 2008-2013

Variables/ Information fields	Notification year (number of cases)														p-value[a]
	2008 (N=27)		2009 (N=140)		2010 (N=248)		2011 (N=428)		2012 (N=529)		2013 (N=638)		Average		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Nature of lesion	7	25.9	107	76.4	214	86.2	348	81.3	421	79.5	525	82.2	270	71.9	0.009
Part of the body struck	15	55.5	122	87.1	238	95.9	395	92.2	497	93.9	594	93.1	310	86.3	0.027
Abortion provided by law	21	77.7	98	70.0	184	74.1	385	89.9	465	87.9	592	92.7	291	82.1	0.000
Emergency contraception	21	77.7	105	75.0	198	79.8	403	94.1	478	90.3	604	94.6	302	85.3	0.042
Collection of vaginal secretion	21	77.7	101	72.1	193	77.8	396	92.5	474	89.6	590	92.4	296	82.6	0.027
Semen collection	27	100.0	130	92.8	221	89.1	400	93.4	471	89.0	593	92.9	307	92.9	0.627
Blood collection	27	100.0	135	96.4	226	91.1	411	96.0	479	90.5	605	94.8	314	94.8	0.023
Hepatitis B prophylaxis	27	100.0	136	97.1	227	91.5	405	94.6	474	89.6	601	94.2	312	94.5	0.082
HIV[b] prophylaxis	27	100.0	136	97.1	233	93.9	409	95.5	473	89.4	606	94.9	314	95.1	0.273
STI[c] bacterial prophylaxis	27	100.0	136	97.1	233	93.9	407	95.0	474	89.6	601	94.2	313	95.0	0.020
Referral to the health sector	27	100.0	137	97.8	234	94.3	409	95.5	484	91.4	586	91.8	313	95.1	0.176
FMI[d]	27	100.0	134	95.7	240	96.7	415	96.9	500	94.5	619	97.0	323	96.8	0.330
CREAS[e]	27	100.0	132	94.2	236	95.1	416	97.2	500	94.5	620	97.1	322	96.3	0.429
Women's reference center	27	100.0	132	94.2	239	96.3	414	96.7	501	94.7	620	97.1	322	96.5	0.205
Prosecution Office	27	100.0	130	92.8	237	95.5	416	97.2	506	95.6	620	97.1	323	96.3	0.007
Other office	26	96.3	135	96.4	239	96.3	418	97.6	510	96.4	622	97.4	325	96.7	0.458
DPCA[f]	26	96.3	133	95.0	240	96.7	417	97.4	507	95.8	624	97.8	325	96.5	0.602
DAM[g]	27	100.0	132	94.2	239	96.3	416	97.2	510	96.4	619	97.0	324	96.8	0.011
Sentinel service	27	100.0	131	93.5	237	95.5	416	97.2	501	94.7	621	97.3	322	96.4	0.031
Shelter House	27	100.0	132	94.2	239	96.3	416	97.2	504	95.2	620	97.1	323	96.7	0.908
Child and Youth Court	27	100.0	131	93.5	237	95.5	418	97.6	514	97.1	620	97.1	325	96.8	0.912
Guardianship Council	27	100.0	132	94.2	244	98.3	425	99.3	516	97.5	622	97.4	328	97.8	0.365
Evolution of the case	27	100.0	132	94.2	214	86.2	406	94.8	512	96.7	609	95.4	317	94.6	<0.001

a) Linear trend test.
b) HIV: human immunodeficiency virus.
c) STI: sexually transmitted infections.
d) FMI: Forensic Medicine Institute.
e) CREAS: Specialized Reference Center for Social Assistance.
f) DPCA: Specialized Police Station for Child and Adolescent Protection.
g) DAM: Specialized Police Station for Women.

professionals for violence notifications, may have contributed to this result. The positive influence of the qualification of professionals is corroborated by a study conducted in Ceará in 2011 and 2012, which pointed out the association between the act of notifying and questions regarding knowledge and training on the subject among the professionals involved.[22]

According to the 2014 Public Security Yearbook, Santa Catarina ranked 5th in the Brazilian sexual violence ranking, with record (in the police reports) of 42.8 cases of rape per 100,000 inhabitants, whilst the national average is of 23.5 cases per 100,000 inhabitants.[23] These data suggest that the health sector does not identify or notify all sexual violence, with the aggravating fact that 75% of the Santa Catarina's population is covered by Family Health Strategy teams, composed of professionals responsible for the health care of the local population, for conducting

Table 4 – Number and percentage of filled fields in the notification/investigation form of sexual violence against women (≥10 age years) according to aggressor's characteristics, by notification year, Santa Catarina, 2008-2013

Variables/ Information fields	Notification year (number of cases)														p-value[a]
	2008 (N=27)		2009 (N=140)		2010 (N=248)		2011 (N=428)		2012 (N=529)		2013 (N=638)		Average		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Other relationships with the assaulted woman	27	100.0	135	96.4	230	92.7	413	96.5	501	94.7	613	96.0	320	96.0	0.452
Herself	27	100.0	138	98.5	236	95.1	416	97.2	498	94.1	619	97.0	322	97.0	0.287
Police Officer / Law Agent	27	100.0	138	98.5	237	95.5	415	96.9	497	93.9	617	96.7	322	96.9	0.133
Person with institutional relationship	27	100.0	138	98.5	237	95.5	413	96.5	494	93.3	619	97.0	321	96.8	0.123
Boss/Employer	27	100.0	138	98.5	237	95.5	414	96.7	496	93.7	618	96.8	322	96.9	0.028
Caregiver	26	96.3	138	98.5	237	95.5	413	96.5	496	93.7	617	96.7	321	96.2	0.193
Friends/acquaintances	27	100.0	138	98.5	237	95.5	414	96.7	500	94.5	616	96.5	322	96.9	0.309
Brother/sister	27	100.0	138	98.5	237	95.5	414	96.7	495	93.5	618	96.8	322	96.8	0.376
Unknown person	27	100.0	139	99.2	239	96.3	411	96.0	497	93.9	620	97.1	322	97.1	0.656
Son/daughter	27	100.0	138	98.5	236	95.1	416	97.2	497	93.9	618	96.8	322	96.9	0.079
Ex-boyfriend/ex-girlfriend	27	100.0	138	98.5	237	95.5	413	96.5	496	93.7	618	96.8	322	96.8	0.013
Boyfriend/girlfriend	27	100.0	138	98.5	238	95.9	412	96.2	500	94.5	618	96.8	322	97.0	0.200
Ex-partner	27	100.0	138	98.5	237	95.5	415	96.9	497	93.9	618	96.8	322	96.9	0.541
Partner	27	100.0	138	98.5	237	95.5	415	96.9	496	93.7	617	96.7	322	96.9	0.072
Stepfather	27	100.0	138	98.5	238	95.9	415	96.9	500	94.5	618	96.8	323	97.1	0.601
Mother	27	100.0	138	98.5	237	95.5	415	96.9	498	94.1	617	96.7	322	96.9	0.679
Father	27	100.0	138	98.5	238	95.9	409	95.5	496	93.7	618	96.8	321	96.7	0.117
Number of involved (aggressors)	27	100.0	138	98.5	239	96.3	410	95.7	515	97.3	618	96.8	325	97.4	0.150
Sex of the probable aggressor	27	100.0	139	99.2	243	97.9	421	98.3	524	99.0	624	97.8	330	98.7	0.050
Suspicion of alcohol use	23	85.1	116	82.8	192	77.4	344	80.3	427	80.7	506	79.3	268	80.9	0.290

a) Linear trend test.

active search and recording diseases and conditions of compulsory notification,[24] including violence against women.[7] It is also important to highlight that the population may not see the importance of this issue for Public Health, either due to professionals' misinformation or due to the little initiative of the services to talk about the subject.

The completeness of the fields in the present study (93.3%) was higher than that found by Abath et al. in Recife's study (2009-2012),[17] in which the proportion of completeness was considered regular (70.3%) and the comparison between the edges of the time series studied showed a reduction in most variables. In the current study, the field with the lowest percentage of completeness – 67.2% – was 'time of occurrence' of sexual violence; it is possible that their filling was influenced by the fact that the violence reported in this study was largely practiced in the household, repeatedly, and by someone living with the victim.

With regard to the type of sexual violence suffered, if there was 'rape' or 'sexual offense', there may have been a misclassification. During the studied period, Brazilian Penal Code was amended on what is considered rape. The law No. 12,015, dated August 7th, 2009,[25] established the concept of rape as 'to constrain someone through violence or serious threat, to have carnal conjunction or to practice or to allow with the same person the practice of another libidinous act'. Thus, the sexual offense also came to be considered rape. Although this concept is explicit in Sinan's instructive provisions,[26] the professionals could have doubts at the moment they were filling the

Table 5 – Number and consistency percentage in the filling of notification/investigation form of sexual violence against women (≥10 years of age) according to variables/information fields and notification years, Santa Catarina, 2008-2013

Variables/ Information fields	Notification year (number of cases)												
	2008 (N=27)		2009 (N=140)		2010 (N=248)		2011 (N=428)		2012 (N=529)		2013 (N=638)		Average
	N	%	N	%	N	%	N	%	N	%	N	%	%
Age (equal to 10 years) versus Education level (5 or more years of schooling)	27	100.0	137	97.8	246	99.1	419	97.9	516	97.5	628	98.4	98.4
Sexual violence (yes) versus Type of sexual violence (not for all types)	27	100.0	137	97.8	246	99.1	422	98.6	525	99.2	628	98.4	98.8
Type of sexual violence (child pornography) versus Age (>19 years)	27	100.0	140	100.0	247	99.6	426	99.5	529	100.0	638	100.0	99.8
Sex of the probable aggressor (male) versus Relationship (mother)	27	100.0	139	99.2	248	100.0	425	99.3	528	99.8	635	99.5	99.6
Sexual violence (yes) versus Final outcome (inconclusive/unknown/blank)	25	92.5	136	97.1	242	97.5	418	97.6	521	98.4	618	96.8	96.7
Relationship of the aggressor with the assaulted woman (unknown) versus Relationship (yes for any other relationship)	27	100.0	140	100.0	247	99.6	428	100.0	529	100.0	634	99.3	99.8
												Overall average:	98.9

field, hence the option to fill it as 'unknown' or simply to leave it blank. This difficulty comes from the use of a legal concept as information base in a notification form of the health area. A possibility to minimize this type of doubts would be to modify this variable in the notification form to the type of contact that the aggressor had with the victim, such as, if there was penetration and which type, if the victim had contact with blood and/or semen of the aggressor. In the file updated by the Ministry of Health in 2014, for violence investigations,[27] the field 'type of penetration' for sexual violence was excluded. The withdrawal of this information impairs the analysis of the care performed by health professionals from the notification form, given that the need for prophylaxis procedures for sexually transmitted infections is related to the type of exposure suffered.

The information field about the procedure 'abortion provided by law' also presented significant variation in its completeness. The abortion procedure, according to article 128, item II of the Brazilian Penal Code,[28] is a lawful procedure when the pregnancy results from rape; however, despite being a procedure recognized by the country's legislation, it is surrounded by attitudes and personal values capable of interfering in the access of women sexually assaulted to a regulated right in the Brazilian National Health System (SUS), by the Ordinance GM/MS No. 1,508, dated September 1st, 2005,[29] and may also influence the filling of this information in the notification form.

Another field that stands out for the significant variation during the studied period is the 'nature of the lesion' suffered, whose fulfilling is required in cases where the violence practiced affects the physical structure of the victim. In this situation, the main lesion, that is, which motivated the search for the health service,[26] must be considered. The difficulty in filling this field may be related to the non-visualization of physical injury, since sexual violence, in most cases, does not result in extra-genital physical lesions.

Furthermore, the field 'evolution of the case' presented significant variation in the completeness during the studied period. The technical rule of assistance to victims of sexual violence determines the follow-up for, at least, six months after the first assistance, when the evolution can be concluded. However, if the form is filled and completed on the first visit, this information may not be available, and may

influence the filling of this field. It should be highlighted that in the update of the notification of violence, which was renamed as 'notification form of interpersonal violence/self-violence',[27] the field 'evolution' was excluded, so the notification form should be closed on the first visit. Thus, the notification form will not have information resulting from the follow-up of the care given to the victim of sexual violence since the first visit, as, for example, death resulting from this type of aggression.

With regard to the consistency of the analyzed data, it was above 90% in all correlated variables, evaluated as excellent. The quality of data on consistency was better than on completeness; however, the variables available for consistency analysis in Sinan bank, which include sexual violence against women, are lower than those available for completeness analysis.

Moreover, it is important to highlight the duplicity found by the present study. Although there have been few notifications, they suggest that the identification routine to find duplicities followed by the surveillance services can still be strengthened, so that all duplicate cases could be identified and excluded.

With regard to the improvement in the filling of the violence notification form in Sinan, it is important to develop permanent education processes to raise awareness and give tools to the health professionals to generate quality information. Another relevant aspect is the need to provide feedback to the professionals on the information constructed from the data they notified.

Among the limitations of the study, it is necessary to consider its restriction to the study of duplicity, completeness and information consistency, given the importance of quality analysis on information of violence notifications using these criteria. Lima et al.[16] emphasize the small number of quality analyses in Sinan that use consistency and completeness criteria in the filling of information over time.

The presented results point to the possibility of using Sinan as a source of information for diagnosis, planning, monitoring, evaluating and performing public policies. The Information System for Notifiable Diseases (Sinan) demonstrates quality in the filling of notifications, concerning the criteria of completeness, consistency and duplicity. We emphasize that the study is innovative when analyzes the data quality for sexual violence against women and adolescents obtained from a state information system. This approach was not found in other studies on this matter.

We expect that this work contributes to reinforce Sinan's potential as a surveillance strategy for sexual violence, by subsidizing the planning and evaluation of public policies, as well as by raising awareness of managers, professionals, scholars and professors of the health area for the importance of the notification as an instrument to increase the visibility of sexual violence and of actions to tackle violence against women.

Authors' contributions

Delziovo CR and Coelho EBS contributed in the conception and design of the manuscript, in the analysis and interpretation of the data, and in the writing of the manuscript's first version. Bolsoni CC and Lindner SR contributed in the analysis and interpretation of the data and critical review of the manuscript. All authors approved the final version to be published and declared to be responsible for all aspects of the study, ensuring its accuracy and integrity.

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