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# Prevalence of Victimization and Perpetration of Sexual Aggression in Undergraduate Students: A Systematic Review 2008-2018

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# Prevalence of Victimization and Perpetration of Sexual Aggression in Undergraduate Students: A Systematic Review 2008-2018

Prevalencia de victimización y perpetración de agresión sexual en estudiantes universitarios: una revisión sistemática 2008-2018

Prevalência de vitimização e perpetração de agressão sexual em estudantes universitários: uma revisão sistemática 2008-2018

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**Abstract:** *Introduction:* Sexual aggression (SA) is a public health problem present throughout the life of people, for this reason it is necessary to know its magnitude and scope. The objective of this study was to conduct a systematic review of empirical studies that include information on the prevalence of sexual aggression in undergraduate students. *Materials and Methods:* Two authors independently searched for publications between 2008-2018 in the Scopus®, Web of Science®, Scielo®, Redalyc® and Eric® databases. As inclusion criteria, empirical studies that report the prevalence of victimization and/or perpetration of sexual aggression in students since their admission to the university were considered. The evaluation was carried out independently by two evaluators who determined the risk of bias. In total, 35 articles were selected that met the inclusion criteria. Used methodology, sample sizes, measurement instruments, prevalence of victimization-perpetration of sexual aggression and perpetrator-victim relationship are indicated. *Results:* Although there are differences between the studies analyzed, the results indicate that unwanted sexual contact is the most frequent type of sexual aggression in both victimization and perpetration; however, several studies did not perform this subdivision and showed only general data of some type of sexual aggression. *Discussion:* The findings of the estimation of prevalence of sexual aggression and its subtypes in undergraduates since they enter university life are discussed, as well as future considerations related to terminology unification that allows to estimate more precise figures of the types of sexual aggression.

**Keywords:** Sexual aggression, undergraduate university students, systematic review, measurement instruments, prevalence.

**Resumen:** *Introducción:* la agresión sexual (AS) es un problema de salud pública que está presente en la vida de las personas, motivo por el cual es necesario conocer su magnitud y alcance. El objetivo de este estudio fue realizar una revisión sistemática de estudios que incluyeran información de prevalencia de agresión sexual en estudiantes universitarios. *Materiales y métodos:* dos autores de manera independiente realizaron la búsqueda de publicaciones entre los años 2008-2018 en las bases de datos Scopus®, Web of Science®, Scielo®, Redalyc® y Eric®. Como criterios de inclusión se consideraron estudios empíricos que reportaran prevalencia de victimización y/o perpetración de agresión

sexual en estudiantes desde su ingreso a la universidad. La evaluación fue realizada de manera independiente por dos evaluadores, quienes determinaron el riesgo de sesgo. En total 35 artículos cumplían con los criterios de inclusión. Se indica la metodología empleada, tamaños de muestra, instrumentos de medida, prevalencia de victimización-perpetración de agresión sexual y relación perpetrador-víctima. **Resultados:** aunque existen diferencias entre los estudios analizados, los resultados indican que el contacto sexual no deseado es el tipo de agresión sexual más frecuente; sin embargo, diversos estudios no realizaron esta subdivisión y mostraron únicamente datos generales de algún tipo de agresión sexual. **Discusión:** se discuten los hallazgos de la estimación de prevalencia de la agresión sexual y sus subtipos en estudiantes desde que ingresan a la universidad y se plantean consideraciones futuras relacionadas con la unificación de la terminología que permita estimar cifras más precisas de los tipos de agresión sexual.

**Palabras clave:** agresión sexual, estudiantes universitarios, revisión sistemática, instrumentos de medida, prevalencia.

**Resumo:** *Introdução:* a agressão sexual (A.S.) é um problema de saúde pública que está presente ao longo da vida das pessoas, motivo pelo qual é necessário conhecer sua magnitude e alcance. O objetivo deste estudo foi realizar uma revisão sistemática dos estudos empíricos que incluíram informação de prevalência de agressão sexual em estudantes universitários. *Materiais e métodos:* dois autores de maneira independente realizaram a busca de publicações entre os anos 2008-2018 nas bases de dados Scopus®, Web of Science®, Scielo®, Redalyc® e Eric®. Como critérios de inclusão consideraram-se estudos empíricos que reportaram prevalência de vitimização e/ou perpetração de agressão sexual em estudantes desde seu ingresso à universidade. A avaliação foi realizada de maneira independente por dois avaliadores quem determinaram o risco de sesgo. Em total foram selecionados 35 artigos que cumpriam com os critérios de inclusão. Indica-se a metodologia empregada, tamanhos de amostra, instrumentos de medida, prevalência de vitimização-perpetração de agressão sexual e relação perpetrador-vítima. **Resultados:** ainda que existem diferenças entre os estudos analisados, os resultados indicam que o contato sexual não desejado é o tipo de agressão sexual mais frequente tanto em vitimização como perpetração; no entanto, diversos estudos não realizaram esta subdivisão e mostraram unicamente dados gerais de algum tipo de agressão sexual. **Discussão:** discutem-se os resultados da estimação de prevalência da agressão sexual e seus subtipos em estudantes, desde que ingressam à vida universitária e se apresentam considerações futuras relacionadas com a unificação da terminologia que permita estimar cifras mais precisas dos tipos de agressão sexual.

**Palavras-chave:** agressão sexual, estudantes universitários, revisão sistemática, instrumentos de medida, prevalência.

## Introduction

Sexual aggression is a public health problem that can affect people at any moment in life, it produces serious consequences at physical, psychological and occupational levels, for this reason it is necessary to know its magnitude and scope (1, 2, 3).

Sexual aggression is a subtype of sexual violence, it is defined as the use of certain mechanisms like physical force, intimidation and other coercive actions to force men or women to any kind of sexual encounter, against their will, thus infringing their sexual freedom through coercion, manipulation and deceit (4, 5, 6, 7).

Based on the severity degree of the sexual aggression it is possible to identify four subtypes of sexual aggression: (a) sexual contact, defined as the union of sexual nature with another person, without penetration, and against her/his will by means of verbal pressure, by taking advantage of the victim's inability to resist the use, or the threat of use, of physical

force; (b) sexual coercion, understood as the use of practices such as subtle psychological and verbal pressure in order to have a sexual encounter, thus achieving oral, vaginal or anal penetration; (c) attempted rape, defined as the attempt to penetrate orally, vaginally or anally by means of exploiting the victim's inability to oppose resistance to the use, or the threat of use, of physical force; and (d) rape, understood as the violent carnal access with the penis or other objects, through the vagina, anus, and/or the mouth, including the use of physical force and/or taking advantage of the victim's inability to oppose resistance (7, 8, 9, 10).

Determining the prevalence of sexual aggression and its subtypes in the environment of higher education institutions is a task that has been done for over 30 years (9, 11). Data collection on this problematic has been carried out for a long time through researches that use self-administered tools in physical format and now also with the help of technology, in the digital format (6, 7). Current figures of sexual aggression in the university environment can be considered an estimation of the magnitude of the problem, since it is not possible to assure that all persons that have been victims or offenders of this situation report this in the investigations, and even less in the case of the victims who had denounced the occurrence before any institution or responsible entity while they were studying at the university (12).

At present, there is no updated evidence that at a global level synthesizes prevalence studies on sexual aggression in students from day one of their university life. It is relevant to know the prevalence of sexual aggression in university campuses since there is the contrasting fact that academic environments have been considered for years safe spaces for students. It is therefore necessary to have updated figures that allow synthesizing the reports on this global problematic in order to implement strategies that permit creating guidelines for helping victims and for establishing protocols for the prevention of sexual aggression. Considering the above, the research question for the present review is which is the prevalence of victimization and perpetration of sexual aggression in undergraduate students from day one at the university?

This is the first proposal developed in Latin America concerning studies conducted with samples of Latin America and other regions, whose objective was to systematically review and synthesize the findings of the studies on prevalence of sexual aggression —perpetration and victimization— in undergraduate students of both genders, from the beginning of their university life on, in the last ten years (2008-2018).

## **Materials and Methods**

The methods applied in this study are based on the PRISMA Declaration and the recommendations given by Montero and Leon on the research methodologies in psychology (13, 14). Two authors carried out the systematic and independent search in the Scopus®, Web of Science®, Scielo®, Redalyc® and Eric® databases of the researches published between January 1st 2008 and February 20th 2018, in English as well as in

Spanish. The descriptors used were University/College/Universidad, Sexual Violence/Sexual Assault/Sexual Aggression/Agresión Sexual/Violencia Sexual/Violación, and Prevalence/Prevalencia, all of them terms included in the Biblioteca Virtual en Salud (<http://bvsalud.org/es/>). One of the search strategies used in the data base Web of Science® was subject: University and college and “sexual assault” and prevalence; time span: 2008-2018; indices: SCI-EXPANDED, SSCI, A&HCI, ESCI.

Independently, two authors extracted data of the studies using an Excel® matrix with the information of the selected articles including id, author, publication year, journal, title, abstract, accepted (yes/no), and motive. On completion of the extraction, data bases were unified, verifying that both matrixes contained the same information.

Subsequently, two evaluators, HH and EC, carried out the reading of the titles and abstracts (figure 1), considering as inclusion criteria studies that, regardless of the method used, reported prevalence of victimization and/or perpetration of sexual aggression, understood as a subtype of sexual aggression including the use of some actions such as physical force, intimidation or other coercive acts to force men or women to have some kind of sexual encounter, despite his/her lack of will, attacking their sexual freedom through coercion, manipulation and deceit and subtypes thereof in university students from the moment they entered to higher education institutes, including the studies that reported perpetration and/or victimization by partners, former partners, friends, acquaintances or unknown people in university life (4, 5, 6, 7).

Victimization of the sexual aggression is understood as the self-report of having suffered any encounter of sexual nature against one's own will, as well as the self-report of having used any mechanism to force another person to have an encounter of sexual nature. Prevalence for this study was conceived as the percentage of victimization and perpetration of the sexual aggression reported by students since they entered in the university. Longitudinal studies that reported victimization and perpetration of sexual aggression in their base line as frequency measurement were included.

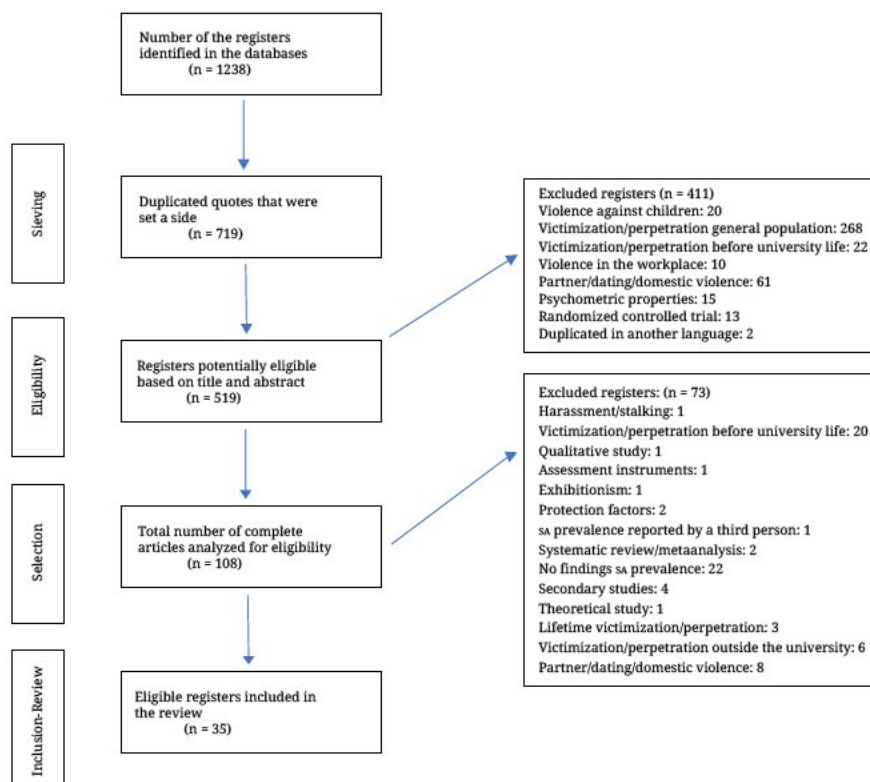
Articles that measured prevalence of sexual aggression in the lives of the students that did not discriminated possible victimization or perpetration from the moment of university entrance were excluded, as well as studies on reported sexual aggression only in dating or in dates that did not connected the occurrence to university life of the participants; studies of reports carried out by a third party like friends or colleagues of the victims or of the perpetrators, and reports from secondary studies.

In cases of doubt concerning the initial selection of some articles by the evaluators, these articles were included in the list of accepted for an in-depth review in order to ensure consensus; when the discrepancy persisted the opinion of a third evaluator (PR) was consulted.

The reasons for article exclusion in the selection stage are reported in the Figure below. Articles mentioning victimization/perpetration outside the university and before university life, violence in the workplace, partner violence, violence in dates or domestic violence

predominated, all of them psychometric properties that did not provide data on prevalence of victimization/perpetration of sexual aggression, and secondary studies that segmented the sample for new analysis, among others. Then, in the selection stage, a comprehensive reading was undertaken to the remaining articles, setting aside articles related to harassment/stalking; victimization/perpetration in the pre-university time, as well as articles lacking a report on findings of prevalence of sexual aggression, among others.

Those articles eventually included in the review were evaluated independently by two researchers in order to establish the risk of bias according to the strobe checklist.



**Figure 1**  
Flow chart – Systematic review process

## Results

The search produced a total of 1238 articles. After passing through the different screening phases, eligibility, selection and inclusion (see figure 1), 35 articles met the established inclusion criteria. A new Excel® matrix was created indicating authors (year), design, sample, measuring instrument, findings / types of sexual aggression and relation perpetrator-victim (table 1).



**Table 1**  
Studies included in the systematic review

| ID | Study                  | Design                                   | Sample                                    | Measuring Instrument       | Findings of SA Victimization/Perpetration  | Perpetrator (P)-Victim (V) Relation  | Sample Country |
|----|------------------------|--|---|----------------------------|--|--|----------------|
| 1  | Adejimi, Sabageh (18)  | Transversal                              | n = 1538; 41.6% men; 58.4% women          | Ad hoc questionnaire       | <p>Victimization</p> <p>Any type of S.A.: 12.4%; 9.4% men, 14.6% women.</p> <p>Unwanted sexual contact: 63.3% men, 85.5% women.</p> <p>Unwanted sexual relations: 45%, 64% women.</p> <p>Unwanted oral sex: 6.7% men, 18.3% women.</p> <p>Unwanted anal sex: 5% men, 5.3% women.</p> <p>Penetration with finger or object: 5% men, 6.9% women.</p> | <p>P. acquaintance: V. men 26.7%; V. women 36.6%.</p> <p>P. friend: V. men 16.7% and V. men 17.6%.</p> <p>P. acquaintance/1<sup>st</sup> date: V. men 18.3% and V. women 13%.</p> <p>P. unknown: V. men 18.3% and V. women 12.2%.</p> <p>P. relative: V. men 6.7% and V. women 10.7%.</p> <p>P. ex romantic partner: V. men 6.7% and V. women 5.3%.</p> <p>P. current romantic partner: V. men 6.7% and V. women 4.6%.</p> <p>P. student same university: V. men 45% and V. women 42%.</p> <p>P. university employee /faculty member: V. men 13.3% and V. women 19.1%.</p> <p>P. person outside the university: V. men 41.6% and V. women 38.9%.</p> | Nigeria        |
| 2  | Carey, Durney (19)     | Longitudinal (monitorings each 4 months) | n = 483 women in the 1 <sup>st</sup> year | Reviewed SES (20)          | <p>Victimization</p> <p>Attempted rape using force: 7.3%.</p> <p>Rape using force: 6.6%.</p> <p>Attempted rape due to victim's inability to oppose resistance: 12.6%.</p> <p>Rape due to victim's inability to oppose resistance: 9.6%.</p>  | N/I  | United States  |
| 3  | Carvalho & Nobre (21)  | Transversal                              | n = 260 women                             | SABS (22)                  | <p>Perpetration</p> <p>Any S. A. type: 35.8%.</p> <p>Sexual coercion using verbal pressure: 46.2%.</p> <p>S. A. using physical force: 19.8%.</p>   | N/I  | Portugal       |
| 4  | Conley, Overstreet (3) | Transversal                              | n = 7603; 38.9% men; 61.1% women          | Life Events Checklist (23) | <p>Victimization</p> <p>Any S. A. type: 18.7%.</p> <p>Rape: 5.2%.</p> <p>Other unwanted sexual experiences: 17.5%.</p>   | N/I  | United States  |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim; SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.

See notes 3, 18, 19, 20, 21, 22, 23.

**Table 1 (Cont.)**

| ID | Study                     | Design      | Sample                             | Measuring Instrument | Findings of SA Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation  | Sample Country |
|----|---------------------------|-------------|------------------------------------|----------------------|---|--|----------------|
| 5  | Flack, Caron (24)         | Transversal | n = 205; 41% men; 59% women        | Reviewed ses (25)    | <p>Victimization</p> <p>Any S. A. type: men 7.1% and women 43.8%.</p> <p>Unwanted sexual contact: men 4.8% and women 29.8%.</p> <p>Attempted sexual coercion: men 1.2% and women 25.6%.</p> <p>Sexual coercion: men 1.2% and women 7.7%.</p>  | P. student of same university: 100%  | United States  |
| 6  | Flack, Hansen (26)        | Transversal | n = 373 women                      | Reviewed ses (10)    | <p>Victimization</p> <p>Any type of S. A.: 44.2%.</p> <p>Unwanted sexual contact: 39.7%</p> <p>Attempted rape: 22.5%</p> <p>Rape: 22.5%</p>   | <p>P. unknown: Unwanted sexual contact: 5.6%, attempted rape: 1.9% and rape: 2.4%.</p> <p>P. acquaintance: Unwanted sexual contact: 11.8%, attempted rape: 8.3% and rape: 7%.</p> <p>P. friend: Unwanted sexual contact 5.7%, attempted rape: 2.7% and rape 6.4%.</p> <p>P. Ex romantic partner: Unwanted sexual contact: 5.4%, attempted rape 7% and rape 5.6%.</p> | United States  |
| 7  | Flack, Kimble (27)        | Transversal | n = 208 women                      | Reviewed ses (10)    | <p>Victimization</p> <p>Any type of S. A.: 18.8%.</p> <p>Unwanted sexual contact: 16.8%</p> <p>Attempted rape: 6.7%</p> <p>Rape: 3.8%</p>   | <p>P. student same university: V. women 59%.</p> <p>P. Student another university: V. women 46.2%.</p> <p>P. exchange student: V. women 41%</p>  | United States  |
| 8  | Ford & So-to-Marquez (28) | Transversal | n = 21,185; 31.1% men; 68.9% women | Ad hoc questionnaire | <p>Victimization by sexual orientation</p> <p>S. A. using force</p> <p>Heterosexuals: men 2.4%-4.8% and women 3.9%-10%.</p> <p>Lesbian and bisexual women: lesbian 2.2%-8% and bisexual women 8%-14.4%.</p> <p>Gay and bisexual men: gay 7.4%-10.5% and bisexual men 3.3%-14.3%.</p> <p>Attempted S. A. using force</p> <p>Heterosexuals: men 4.2%-6.9% and women 9.4%-13%.</p> <p>Lesbian and bisexual women: lesbian 6.8%-9.4% and bisexual women 9.8%-25%.</p> <p>Gay and bisexual men: gay 4.2%-18.4% and bisexual men 5.3%-20%.</p> <p>S. A. due to victim's inability to oppose resistance</p> <p>Heterosexuals: men 2.6%-6.2% and women 4.6%-11.1%.</p> <p>Lesbian and bisexual women: lesbian 2.3%-6.7% and bisexual women 8%-17.8%.</p> <p>Gay and bisexual men: gay 8%-14.1% and bisexual men 2.6%-11.4%.</p> | N/I  | United States  |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim;  
SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression  
and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.  
See notes 10, 24, 25, 26, 27, 28.

Table 1 (Cont.)

| ID | Study                 | Design                                | Sample                           | Measuring Instrument                                    | Findings of sa Victimization/Perpetration  | Perpetrator (P)-Victim (V) Relation   | Sample Country            |
|----|-----------------------|---------------------------------------|----------------------------------|---|--|---|---------------------------|
| 9  | Forke, Myers (29)     | Transversal                           | n = 910 men and women            | Ad hoc questionnaire                                    | Victimization<br>S. A.: 12%; men 7.2% and women 15.6%.<br>Perpetration<br>S. A.: 1.6%; men 2.6% and women 1%.  | P. partner: 36.9%.<br>P. Other (friend or acquaintance): 62.9%.   | United States             |
| 10 | Geidam, Njoku (30)    | Transversal                           | n = 400 mujeres                  | Ad hoc questionnaire                                    | Victimization<br>Unwanted sexual contact: 41.9%.<br>Unwanted kisses: 16.6%.<br>Attempted rape: 26.8%.<br>Rape: 14.6%.  | P. partner: 33.2%.<br>P. university classmates: 14.6%.<br>P. teachers: 16.1%.<br>P. administrative staff: 11.2%.<br>P. unknown: 23.9%.                | Nigeria                   |
| 11 | Hines, Armstrong (31) | Transversal                           | n = 1916 men and women           | Modified items of previous study (32)                   | Victimization<br>At least one S. A. act: men 3.2% and women 6.6%.<br>Sexual contact using force: men 0.7% and women 3.3%.<br>Sexual contact with threats: men 0.6% and women 0.5%.<br>Sexual contact due to victim's inability to oppose resistance (alcohol/drugs): men 1.5% and women 3.7%.<br>Sexual relation using force: men 0.6% and women 0.4%.<br>Sexual relation with threats: men 0.4% and women 0.4%.<br>Sexual relation due to victim's inability to oppose resistance (alcohol/drugs): men 1.9% and women 1.8%. | P. unknown: V. men 21.4% and V. women 11.6%.<br>P. member of the university community (student, teacher, personnel): V. men 86.7% and V. women 58.6%. | United States             |
| 12 | Howard, Griffin (33)  | Longitudinal (2 months of monitoring) | n = 551; men 227; women 324      | Ad hoc questionnaire                                    | Victimization<br>S. A. associated with the use of alcohol: men 6.6% and women 20.4%.   | N/I   | United States             |
| 13 | Ilabaca, Fuertes (17) | Transversal                           | n = 1251; men 40.9%; women 59.1% | Questionnaire of Non-Consensual Sexual Experiences (34) | Victimization<br>Sexual coercion with any tactic: 24%.<br>Tactics:<br>Verbal pressure: 33.2%.<br>Use of alcohol/drugs: 21%.<br>Use of physical force: 13.5%.<br>Verbal pressure and physical force: 12.5%.<br>Verbal pressure and use of alcohol/drugs: 8.1%.<br>Use of alcohol and/or drugs and physical force: 6.4%.<br>Verbal pressure, use of alcohol/drugs and physical force: 5.1%.  | P. partner: 46.6%.<br>P. friend: 33.1%.<br>P. unknown: 20.1%.   | Spain<br>Chile<br>Bolivia |
| 14 | Ilyasu, Abubakar (35) | Transversal                           | n = 300 women                    | Modified items of previous study (36)                   | Victimization<br>Any S. A. type: 22.2%.<br>Unwanted sexual contact: 45.2%.<br>Attempted rape: 22.6%.<br>Rape: 3.2%.  | P. student same university: 59.9%.<br>P. partner: 20.9%.<br>P. unknown: 19.4%.  | Nigeria                   |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim;  
SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression  
and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.  
See notes 17, 29, 30, 31, 32, 33, 34, 35, 36.



Table 1 (Cont.)

| ID | Study                       | Design        | Sample                           | Measuring Instrument                           | Findings of sa Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation   | Sample Country |
|----|-----------------------------|---------------|----------------------------------|--|---|---|----------------|
| 15 | Johnson, Matthews (37)      | Transver-sal  | n = 29,295 men and women         | Ad hoc ques-tionnaire                          | Victimization<br>Unwanted sexual contact: 5.9%.<br>Attempted rape: 2.4%.<br>Rape: 1.7%.   | N/I   | United States  |
| 16 | Kimble, Flack (38)          | Transver-sal  | n = 218 women                    | Reviewed ses (10)                              | Victimization<br>Any S. A. type: 38.1%.<br>Unwanted sexual contact: 27.5%.<br>Attempted rape: 6%.<br>Rape: 4.6%.  | P. local resident not student: 86.8%.<br>P. exchange program student/resident student: 13.2%.               | United States  |
| 17 | Krebs, Lindquist (39)       | Transver-sal  | n = 5446 women                   | Ad hoc ques-tionnaire                          | Victimization<br>Any S. A. type: 19%.<br>Attempted rape: 12.6%.<br>Unwanted sexual contact using physical force: 1.4%.<br>Rape using physical force: 3.4%.<br>Unwanted sexual contact due to inability to oppose resistance: 2.6%.<br>Rape due to inability to oppose resistance: 8.5%. | N/I   | United States  |
| 18 | Marsily McNamara (40)       | Transver-sal  | n = 1648; men 30.2%; women 69.8% | Reviewed ses (10, 15)<br>Ad hoc ques-tionnaire | Victimization by the used instrument<br>SES: 2.9%.<br>Self-identification as rape victim: 15.1%; men 4.3% and women 19.7%.<br>Legal identification as rape victim: 9.4%; men 5.2% and women 11.1%.  | N/I   | United States  |
| 19 | Mess-man-Moore, Coates (41) | Longitudi-nal | n = 274 women                    | Reviewed ses (15)                              | Victimization<br>Rape: 9.5%<br>Sexual coercion using verbal pressure: 11.7%   | N/I   | United States  |
| 20 | Mezie-Okoye y Alamina (42)  | Transver-sal  | n = 413 women                    | Ad hoc ques-tionnaire                          | Victimization<br>Unwanted sexual contact: 31.6%<br>Rape: 17.6%  | P. partner: 37.3%.<br>P. classmate: 17.6%.<br>P. teacher: 17.1%.<br>P. unknown: 14.5%.<br>P. friend: 13.5%. | Nigeria        |
| 21 | Novik, Howard (43)          | Transver-sal  | n = 502; men 43.6%; women 56.4%  | 1 item part of a previous study (44)           | Victimization<br>S. A. associated with the use of alcohol: 15.6%; men 9.2% and women 20%  | N/I   | United States  |
| 22 | Palmer, McMahon (45)        | Transver-sal  | n = 370; men 48%; women 52%      | ses (11)                                       | Victimization<br>S. A.: men 31% and women 34%<br>Perpetration<br>Coercive sexual conducts: men 13% and women 6%   | N/I   | United States  |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim; SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.  
See notes 10, 11, 15, 37, 38, 39, 40, 41, 42, 43, 44, 45.

Table 1 (Cont.)

| ID | Study                 | Design       | Sample  | Measuring Instrument   | Findings of sa Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation                             | Sample Country          |
|----|-----------------------|--------------|---|--|---|---|-------------------------|
| 23 | Parks, Frone (46)     | Transver-sal | n = 509; men 50.1%; women 49.9%   | Ad hoc ques-tionnaire  | Victimization<br>S. A. associated with the use of NMUPM: women 7.1%<br>Perpetration<br>S. A. associated with the use of NMUPM: men 6.3%   | N/I   | United States           |
| 24 | Phipps & Smith (47)   | Transver-sal | n = 2058 women  | Items established based on legal definitions of the UK and previous studies (11, 15) | Victimization<br>Sexual relations against the victim's will: 8%<br>Attempted rape: 2%<br>Rape: 5%   | P. Acquaintance: 84%<br>P. student: 60% (70% same institution). | United Kindom           |
| 25 | Rogers, Gallassi (16) | Transver-sal | Group 1:<br>n = 514; men 21.6%; women 78.4%.<br>Group 2:<br>n = 152; men 22.4%; women 77.6%; S.R 5.4%.<br>Group 3:<br>n = 212; men 21.6%; women 71.8%; S.R 6.6% | Reviewed ses (10)  | Victimization<br>Group 1<br>Unwanted sexual contact: men 72.2% and women 6.2%.<br>Rape: men 1.8% and women 3.2%.<br>Group 2<br>Unwanted sexual contact: men 11.1% and women 16.4%.<br>Rape: men 2.8% and women 3.4%.<br>Group 3<br>Unwanted sexual contact: men 16.3% and women 23.9%.<br>Rape: men 4.1% and women 11.7%. | N/I   | United States<br>Mexico |
| 26 | Tora (48)             | Transver-sal | n = 374 women   | Ad hoc ques-tionnaire  | Victimization 1 <sup>st</sup> university year<br>Attempted rape: 30.9%.<br>Rape: 32.1%.<br>Victimization from the 2 <sup>nd</sup> university year on<br>Attempted rape: 11.1%.<br>Rape: 10.7%.  | Info. includes perpetrators since their childhood               | Ethiopia                |
| 27 | Wang, Dong (49)       | Transver-sal | n = 2060; men 52%, women 48%  | Ad hoc ques-tionnaire  | Victimization<br>A. S.: 4.2%; men 2.3% and women 6.3%.<br>Perpetration<br>A. S.: 11.9%; men 15.9% and women 7.7%.<br>Victimization and perpetration: 9.3%; men 10.5% and women 7.9%.  | N/I   | China                   |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim;  
SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression  
and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.  
See notes 10, 11, 15, 16, 46, 47, 48, 49.

Table 1 (Cont.)

| ID | Study                  | Design  | Sample   | Measuring Instrument                          | Findings of sa Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation  | Sample Country |
|----|------------------------|---|--|---|---|--|----------------|
| 28 | Zinzow y Thompson (50) | Longitudinal  | n = 795 men  | Reviewed ses (10)                             | Perpetration<br>Any sexual aggression type (unwanted sexual contact, sexual coercion, attempted rape and rape).<br>1 <sup>st</sup> academic year (n = 76): 14%.<br>2 <sup>nd</sup> academic year (n = 57): 18%.<br>3 <sup>rd</sup> academic year (n = 57): 12%.<br>4 <sup>th</sup> academic year (n = 52): 21%. | N/I  | United States  |
| 29 | Jordan, Combs (1)      | Longitudinal (at the end of the 1 <sup>st</sup> semester, at the end of the 2 <sup>nd</sup> semester) | n = 750 women in the 1 <sup>st</sup> year of study | SES (11)                                      | Victimization<br>Any S. A. type at the end of the 1 <sup>st</sup> semester: 24.2%.<br>Any S. A. type at the end of the 2 <sup>nd</sup> semester: 19.6%.   | N/I  | United States  |
| 30 | Gidycz, Orchowski (51) | Longitudinal (3 months follow-up)   | n = 504 women                                      | SES (11)                                      | Victimization<br>Unwanted sexual contact: 7.9%.<br>Attempted rape: 1.4%.<br>Sexual coercion: 3.7%.<br>Rape: 1.9%.   | P. Acquaintance/first date or friend: 96.8%.   | United States  |
| 31 | Minow y Einolf (52)    | Transversal   | n = 779 women                                      | Modified items of previous study (53) SES (9) | Victimization<br>Unwanted sexual contact: 34.4%.<br>Attempted rape: 11%.<br>Rape: 20.5%.  | N/I  | United States  |
| 32 | Turchik, Probst (54)   | Longitudinal (8 weeks follow-up)  | n = 339 women                                      | Reviewed ses (15, 55)                         | Moderate victimization (sexual contact /coercion) and severe victimization (attempted rape and rape) during the academic trimester: 31.5%.  | P. unknown: V. moderate 14.3% and severe 17.6%.<br>P. acquaintance: V. moderate 28.6% y severe 23.5%.<br>P. Friend/romantic partner: V. moderate 57.1% and severe 58.8%. | United States  |

ID = Identification; S. A. = Sexual Aggression; n = Sample; Rel = Relation; P. = Perpetrator; V. = Victim;  
SES = Sexual Experiences Survey; SABS= Sexually Aggressive Behavior Scale; SAV- S = Sexual Aggression  
and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.  
See notes 1, 9, 10, 11, 15, 50, 51, 52, 53, 54, 55.

Table 1 (Cont.)

| ID | Study               | Design       | Sample                           | Measuring Instrument  | Findings of sa Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation   | Sample Country |
|----|---------------------|--------------|----------------------------------|-----------------------|---|---|----------------|
| 33 | Walsh, Banyard (56) | Transver-sal | n = 1230; men 39% and women 61%. | Ad hoc ques-tionnaire | Victimization<br>Unwanted sexual contact: 16%; men 7% and women 21%.<br>Unwanted sexual relation: 4%; men 2% and women 5%.  | P. unknown: unwanted sexual contact 34% and unwanted sexual relation 17%.<br>P. Acquaintance: unwanted sexual contact 29% and unwanted sexual relation 26%.<br>P. friend: unwanted sexual contact 21% and unwanted sexual relation 24%.<br>P. 1 <sup>st</sup> date: unwanted sexual contact 7% and unwanted sexual relation 10%.<br>P. romantic partner: unwanted sexual contact 6% and unwanted sexual relation 19%.<br>P. Other unwanted sexual contact 3% and unwanted sexual relation 4%. | United States  |
| 34 | Schuster, Krahé (7) | Transver-sal | n = 1376; men 35.6%; women 64.4% | SAV-S (57)            | Victimization: P. partner/ex-partner<br>Unwanted sexual contact: men 43.6% and women 41.1%.<br>Attempted rape: men 30.9% y women 26.6%.<br>Rape: men 23.7% and women 14.6%.<br>Other S. A. act (e.g. oral sex): men 27.7% and women 24.2%.<br>P. Friend/acquaintance<br>Unwanted sexual contact: men 30.1% and women 25.6%.<br>Attempted rape: men 19.1% and women 9.8%.<br>Rape: men 12.4% and women 3.4%.<br>Other S. A. act (e.g. oral sex): men 13.5% and women 4.9%.<br>P. unknown<br>Unwanted sexual contact: men 26.1% and women 26.8%.<br>Attempted rape: men 14.8% and women 6.1%.<br>Rape: men 10.1% and women 2.3%.<br>Other S. A. act (e.g. oral sex): men 11.6% and women 2.9%.<br>Perpetration<br>Partner/ex-partner<br>Unwanted sexual contact: men 14.6% and women 8.4%.<br>Attempted rape: men 7.5% and women 3.5%.<br>Rape: men 6.2% and women 1.7%.<br>Other S. A. act (e.g. oral sex): men 6.4% and women 1.7%.<br>Friend/acquaintance<br>Unwanted sexual contact: men 6.2% and women 3.4%.<br>Attempted rape: men 3.3% and women 0.7%.<br>Rape: men 2.2% and women 0.5%. | When the perpetrator is:<br>Partner/ex-partner: V. men 29.2% and V. women 23.6%.<br>Friend/acquaintance: V. men 28.7% and V. women 17.8%.<br>Unknown: V. men 22.2% and V. women 14.1%.<br>When the victim is:<br>Partner/ex-partner: P. men 13.5% y P. women 8.2%.<br>Friend/acquaintance: P. men 11.7% and P. women 5.8%.<br>Unknown: P. men 6.1% and P. women 3.4%.   | Turkey         |

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See notes 7, 56, 57.

Table 1 (Cont.)

| ID | Study               | Design       | Sample                       | Measuring Instrument | Findings of sa Victimization/Perpetration   | Perpetrator (P)-Victim (V) Relation   | Sample Country |
|----|---------------------|--------------|------------------------------|----------------------|---|---|----------------|
|    |                     |              |                              |                      | Other S. A. act (e.g. oral sex): men 2.4% and women 0.5%.<br>Unknown<br>Unwanted sexual contact: men 4.9% and women 2%.<br>Attempted rape: men 2.9% and women 0.5%.<br>Rape: men 1.6% and women 0.7%.<br>Other S. A. act (e.g. oral sex): men 2.7% and women 0.6%.  |   |                |
| 35 | Schuster, Krahé (6) | Transver-sal | n = 1135; men 22%; women 78% | SAV-S (57)           | Victimization<br>P. partner/ex-partner<br>Unwanted sexual contact: men 25% and women 18.5%.<br>Attempted rape: men 21.7% and women 15.5%.<br>Rape: men 21.8% and women 13.4%.<br>Other S. A. act (e.g. oral sex): men 22.1% and women 13.7%.<br>P. Friend/acquaintance<br>Unwanted sexual contact: men 26.1% and women 15.7%.<br>Attempted rape: men 20.9% and women 10.6%.<br>Rape: men 17.8% and women 8.1%.<br>Other S. A. act (e.g. oral sex): men 21.7% and women 8.2%.<br>P. unknown<br>Unwanted sexual contact: men 20.4% and women 13.7%.<br>Attempted rape: men 15.2% and women 6.8%.<br>Rape: men 13% and women 4.5%.<br>Other S. A. act (e.g. oral sex): men 15.2% and women 5.3%.<br>Perpetration<br>Partner/ex-partner<br>Unwanted sexual contact: men 10.9% and women 7%.<br>Attempted rape: men 8.7% y women 3.6%.<br>Rape: men 7.8% and women 2.9%.<br>Other S. A. act (e.g. oral sex): men 6.1% and women 2.8%.<br>Friend/acquaintance<br>Unwanted sexual contact: men 10.4% and women 5.2%.<br>Attempted rape: men 7.4% and women 2.9%.<br>Rape: men 6.1% and women 2.5%.<br>Other S. A. act (e.g. oral sex): men 7% and women 2.8%.<br>Unknown<br>Unwanted sexual contact: men 5.7% and women 3.2%.<br>Attempted rape: men 5.3% and women 1.9%.<br>Rape: men 3.9% and women 1.1%.<br>Other S. A. act (e.g. oral sex): men 4.8% and women 1%. | When the perpetrator is:<br>Partner/ex-partner: V. men 44.8% and V. women 45.1%.<br>Friend/acquaintance: V. men 31.1% and V. women 26.4%.<br>Unknown: V. men 27.1% and V. women 26.7%.<br>When the victim is:<br>Partner/ex-partner: P. men 16.2% and P. women 9.4%.<br>Friend/ acquaintance: P. men 6.7% and P. women 3.4%.<br>Unknown: P. men 4.9% and P. women 2.2%. | Chile          |

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and Victimization Scale; N/I = No information; NMUPM = Non-Medical Use of Prescription Medicine.

See notes 6, 57.

Prevalence of victimization and of perpetration of the sexual aggression identified in the studies ranged between 0.4 %-85 % and 0.6 %-46.2 %, respectively, these reports varied according to the subtype of sexual aggression and to the victim's/perpetrator's gender (table 1).

The most used design in the selected studies was the transversal design (n = 28), followed by longitudinal studies (n = 7). Most analyzed studies assessed victimization (n = 27); followed by studies on victimization and perpetration (n = 6), and only on perpetration (n = 2). Considering the characteristics of the studies' samples, 51.4 % (n = 18) included men and women; 45.7 % (n = 16) only women, and 2.9 % only men.

22.9 % (n = 8) of the studies reported figures on victimization and/or perpetration in general, not specifying subtype nor seriousness of the event. The remaining studies (n = 27) reported that the most frequent aggression type is the unwanted sexual contact, both in persons who have been aggression victims and in those who have perpetrated the aggression. Regarding the relation perpetrator-victim, 48.6 % (n = 17) of the studies concluded that the most frequent perpetrator was the one who was within the most immediate sphere of the victim, being this a friend, partner or acquaintance; the other studies did not report this information (n = 18).

A total of 17 studies used only one measuring tool for sexual aggression: *ad hoc* questionnaires or an adjustment of questions of instruments of previous studies. The most used instrument (n = 13) was the Sexual Experiences Survey in its different versions (10, 11, 15).

Out of the 35 articles included for the review, 5.7 % (n = 2) were studied with a transcultural sample of Chile, Bolivia, Mexico and the US (16, 17). The remaining 33 studies were reviewed with samples from the US (n = 23), Nigeria (n = 4), Portugal (n = 1), Ethiopia (n = 1), Turkey (n = 1), the UK (n = 1), China (n = 1), and Chile (n = 1).

Although the review period covered the last ten years (2008-2018), 45.7 % of the articles included in this review (n = 16) were published between the years 2014 and 2016.

## Discussion

The currently used figures of sexual aggression in the university context range between 85.5 % and 0.4 % for sexual aggression victimization, and between 46.2 % to 0.5 % for perpetration of sexual aggression (7, 18, 21, 31). Nevertheless, these figures in different studies are confusing since they use diverse classifications of sexual aggression that can be understood as rape or sexual coercion, an example of this is when the presented figure relates to an unwanted sexual relation, or a sexual relation under threat, or unwanted anal sex, among others (18, 31, 56).

This can be considered as an estimate of the scope of the problem because there are factors that can influence the prevalence ranges of



victimization and perpetration of sexual aggression reported by the studies included in the review. Among these, the assessed definitions and sub-categories of sexual aggression stand out, as well as the proposed research designs (transversal/longitudinal); the representativeness the selected sample could have of the study's target population; the gender of the respondents, and the used measurement instruments. In spite of these differences, and in light of the numbers collected in this review, it is clear that sexual aggression in university students is a frequent phenomenon that affects both women and men.

In all researches, including the present review, the used collection method for data on sexual aggression was the self-report, mainly through digital means, a fact that provided security for the students in terms of confidentiality in their answers. However, the reason why this is the most frequently used method is because in most cases the education institutes have neither instruments nor resources for assisting victims in the institutions, that is why the reports on possible accusations are limited (12, 58).

Although most studies measured the forms of sexual aggression separately (sexual contact, sexual coercion, attempted rape and rape), some researches used for these measurements only one question. For example, the study carried out by Forke, Myers, Catallozzi and Schwarz (29) was aimed at establishing the prevalence of victimization and perpetration of sexual aggression before and during university life, according to the type of victim-perpetrator relation, using a broader definition of sexual aggression and asking the respondent if he/she was "pressured, coerced or forced to have sexual relations with someone", which produced lower figures of prevalence of sexual aggression victimization and perpetration (12 % and 1.6 %, respectively), compared with the study carried out by Geidam, Njoku and Bako (30), in which the figures of sexual aggression and their reported subtypes exceeded 30 percentage points.

Likewise, there is no evidence of consensus on the studied types of sexual aggression, a fact that could indicate an underestimation of the numbers reported by the students, and with it a generalization of the results in relation to the sexual aggression type is not possible; this could in turn be considered a risk of bias in the given results. For example, in the study carried out by Philipps and Smith the aggression types considered where sexual relations against the victim's will, attempted rape and rape, disregarding the subtype unwanted sexual contact (47). Something similar happened with the study by Adejimi, Sabageh and Adedokun, where the subcategories "unwanted sexual contact", "unwanted sexual relations", "unwanted oral sex", "unwanted anal sex", and "penetration with finger or object" were included; these categories do not allow an adequate assessment of whether the case was coercion and/or rape (18).

Another factor to be considered is the design of the studies. For instance, in the study conducted by Flack, Kimble, Campbell, Hopper, with a transversal design, prevalence of any type of sexual aggression was 18.8 % (27). In contrast, in the study of Turchik, Probst, Irvin, Chau and

Gidycz, with a longitudinal design, prevalence of any sexual aggression type was 31.5 %, with a difference of over ten percentage points with respect to the transversal study, something that can be related to an underreporting of the event, to social desirability or to recall bias (54).

Likewise, in the majority of the studies included in this review, the female gender was the prevailing sample. In some studies the prevalence of victimization of sexual aggression is higher among women than among men, with substantial percentage differences (3, 7, 9). However, in other studies, such as the study conducted in Chile by Schuster, Krahe, Ilabaca and Muñoz-Reyes, this difference tends to disappear, thus evidencing that both men and women are victims of sexual aggression and that, depending on its subtype, men reported a higher victimization than women in the last twelve months of university life (6) (table 1).

Comparing the present review with previous studies, it was established that prevalence of victimization of sexual aggression and its subtype were similar to the reported in our study. A review conducted in 2016 in the us, for example, synthesized the studies on prevalence of victimization of sexual aggression in us university campuses published between 2000 and 2015, establishing a total of 34 studies, out of which 22 had a transversal design, 11 longitudinal and one was a randomized controlled trial; the sample of most studies was composed of only women ( $n = 22$ ); the results on prevalence of victimization of sexual aggression varied in each study (59). Unwanted contact ranged between 1.8 % and 34 %; reported sexual coercion oscillated between 1.7 % and 32 %; attempted rape varied between 1.1 % and 3.8 %; rape ranged between 0.5 % and 8.4 %, and finally any form of sexual aggression measured in a broad manner as just one type oscillated between 6 % and 44.2 % (59).

Another research that showed findings similar to this study was conducted by Krahé, Tomaszewska, Kuyper and Vanwesenbeeck, it documented available evidence on perpetration and victimization of sexual aggression in young people between 12 and 25 years old in 27 countries of the European Union (60). Results registered a total of 113 studies, in which Germany ( $n = 17$ ), followed by Spain ( $n = 14$ ) and the Netherlands ( $n = 11$ ), have developed a higher number of studies on this problem (60). Data on prevalence of victimization and perpetration of sexual aggression were divided according to gender of the sample: in the case of women, victimization ranged between 0.3 % and 58.9 %, and in men, it oscillated between 0.3 % and 59.5 % for the last year (60). In the case of perpetration of sexual aggression, women reported figures ranging between 0.1 % and 48.2 %, and men figures between 0.1 % and 62.2 % (60).

Even having these reviews, the study conducted by Fedina, Holmes and Backes considered only studies carried out in the United States; on the other hand, the study of Krahé, Tomaszewska, Kuyper and Vanwesenbeeck considered a broader sample than only the universities that, although it included studies conducted only with university students, does not allow assessing prevalence of victimization and



perpetration of sexual aggression in this population specifically during their university life (59, 60, 61).

The present systematic review allows identifying and synthesizing evidence that provides support to the hypothesis of the existence of sexual aggression in the university environment, proving that, regardless of the environment or the culture, this problematic exists and therefore it is necessary to take actions for creating protocols for the prevention of sexual aggression in the university environment against students when they start their university life. At the same time, it allows knowing the limitations of the different studies, such as not generalizing the results since the samples are not representative of the studied population, a fact that implies a selection bias; the designs used (transversal/longitudinal); the measurement instruments; and the sample specific characteristics.

These findings allow opening a new field of study in order to produce new evidence on the prevalence of victimization and perpetration of sexual aggression against students when they start their university life, around the world and more specifically in Latin America.

## Limitations

Although the present review is updated for the last ten years, one of the main limitations this study had was the exclusion of other sources of information, such as grey literature, that would have provided further proof. Other limitations that were evidenced in this review are related to the criterion of the time in which the event took place, for this reason it is possible that some studies do not have prevalence data of sexual aggression from the moment the students started their university life on; therefore it is necessary to specify in future studies if the event takes place along university life or from the moment the university life started. As to the studies including students from their day one in college and that assessed the sexual aggression during the last twelve months, a wrong classification phenomenon took place and, therefore, these reports could relate to situations previous to university life.

Further research could investigate in a greater number of data bases and consult grey literature that provide further information on prevalence of sexual aggression in university students (e.g. national surveys, documents of non-profit organizations, foundations).

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## Conflict of interest declaration

The authors declare no conflicts of interests for publishing this article.

## Additional information

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