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Rafaela Gonçalves da Silva

Development of hypersexuality in sexual abuse victims

Desenvolvimento de hipersexualidade em vítimas de abuso sexual

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NOME

Rafaela Gonçalves da Silva

NÚMERO DE ESTUDANTE	E-MAIL
201703924	imcalledrafaela@gmail.com

DESIGNAÇÃO DA ÁREA DO PROJECTO

Psiquiatria e Saúde Mental

TÍTULO ~~DISSERTAÇÃO~~/MONOGRAFIA (riscar o que não interessa)

Development of hypersexuality in sexual abuse victims

ORIENTADOR

Professor Doutor Manuel António Fernandez Esteves

COORIENTADOR (se aplicável)

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Assinatura conforme cartão de identificação: Rafaela Gonçalves da Silva

Dedicatória

Aos pilares desta jornada a quem chamo de progenitores.
Aos braços direitos e esquerdos que foram os amigos, a família e os amigos que considero família.
Aos passageiros a quem dei boleia por umas paragens e aos motoristas que me carregaram outras tantas.

À minha avó.
A senhora que tão pouco tempo passou na escola, mas que priorizava a educação dos netos acima de tudo e, infelizmente, não chegou a ver os frutos – espero que o orgulho lhe encha o coração.

Development of hypersexuality in sexual abuse victims

Running head: DEVELOPING HYPERSEXUALITY IN SEXUAL ABUSE VICTIMS

Authors: Rafaela Gonçalves da Silva[a], Manuel António Fernandez Esteves[b,c]

Filiations:
[a] Faculty of Medicine of the University of Porto
[b] Clinical Neurosciences and Mental Health Department, Faculty of Medicine of the University of Porto
[c] Department of Psychiatry, University Hospital Center of São João, Porto, Portugal

Corresponding author:
Rafaela Gonçalves da Silva
imcalledrafaela@gmail.com
Clinical Neurosciences and Mental Health Department, Faculty of Medicine of the University of Porto
Alameda Professor Hernâni Monteiro, 4200-319, Porto
psiquiatria@med.up.pt
(+351) 22 551 36 74

Abstract

Background: A link was found between antecedents of sexual abuse and the development of hypersexuality – defined as any compulsive sexual behavior, recurrent and intense sexual fantasies, or sexual urges, that interfere with normal living and causes severe stress on the individual.

Aim: This narrative review focus on gathering and clarifying the main conclusions about the relationship of being a victim of sexual abuse and the later development of sex addiction.

Methods: To establish the relationship between hypersexuality and sexual abuse, the main source of information was the database PubMed with no major restrictions since the existing literature about the topic is scarce. It was decided to use all age ranges and figure out the sexual abuse significances in the psychiatric area, which explains why most articles picture the effects of sexual abuse in children.

Outcomes: Relationship of being a victim of sexual abuse (child, adult and elderly) and the later development of hypersexuality, and possible theories explaining the development of hypersexuality.

Results: Most studies supported a positive relationship between child sexual abuse and compulsive sexual behavior and that this association is also consistent with development of risky sexual behavior in many different populations. This relationship was also positive for sexual abuse suffered during adult life and lifetime abuse. No relationship was found for sexual abuse perpetrated in the elderly.

Clinical Implications: Hypersexuality has proven to be a great source of distress for people who suffer from it so it should be taken seriously by medical professionals and therapists, and the creation of clear definition, criteria for diagnose and possible etiologies (such as antecedents of sexual abuse) would provide a way for more people who suffer from this disorder to come forward and seek help.

Strengths and Limitations: The lack of information and clear definition of hypersexuality are both strengths and limitations: a strength because this narrative review can create awareness to this subject, but also a limitation considering the studies available are scarce and most of them are not as recent as one would like.

Conclusion: Hypersexuality is a relevant consequence of sexual abuse, when perpetrated in children, adults, or throughout the whole life and there are several theories than might explain the development of hypersexuality, related to sexual abuse or not.

Keywords: hypersexuality, compulsive sexual behavior, sexual addiction, sexual abuse, sexual violence.

Introduction

Hypersexuality has been defined as any compulsive sexual behavior, with either a high involvement in sexual activity, recurrent and intense sexual fantasies, or sexual urges, that interfere with normal living and causes severe stress on the individual life, family, friends, loved ones, and one's work environment. People suffering from this condition, make having sex, a priority more important than family, friends, and work. This type of desire has been described based on a lifetime assessment of the frequency of sexual behavior and time spent in associated sexual fantasies [1].

Giving a closer look into hypersexuality, it's important to refer other terms as it is also known: compulsive sexual behavior, sexual addiction, sexual compulsivity, excessive sexuality, sexual dependency, sexual impulsivity, sexual disinhibition, high sexual excitation, problematic hypersexuality, hyperesthesia, hyperphilia, Don Juanism, satyriasis in males, and nymphomania in females [2].

Hypersexuality (or any of its synonyms) do not appear on the Diagnostic and Statistical Manual of Mental Disorders (DSM) [3], not even in the most recent version - it was rejected and not even included under the premise of requiring further study. However, the most recent version of the International Statistical Classification of Diseases and Related Problems (ICD-11) included "compulsive sexual behavior" as an impulse control disorder characterized by a persistent pattern of failure to control intense sexual urges and behaviors leading to several negative consequences [4].

Sexual abuse (also described as sexual violence) is defined as "any sexual action or attempt to obtain a sexual act, unwanted sexual comments, or advances, or acts to traffic or otherwise directed against a person's sexuality using coercion, regardless of their relationship to the victim" [5]. According to a study that took place between the years 1990 and 2017, the sexual abuse prevalence was higher among women, and it decreased in both genders over time across the world [6]. By the end of 2020, in England and Wales, the Office for National Statistics reported that 5 in 6 women who are raped don't report and the same is true for 4 in 5 men [7]. This is an example of why it's still hard to have realistic information about this subject, considering that many cases still go unreported.

Looking only at the possible etiologies for the development of hypersexuality, literature reports a significant but small effect size link between antecedents of sexual abuse (specifically childhood sexual abuse) and individuals with sex addiction [2, 8].

This review is going to focus on discovering any relationship between the people who have been sexual abused in the past and if one of its consequences was developing a hypersexual response.

Methods

This narrative review focus on gathering and clarifying the main conclusions about the relationship of being a victim of sexual abuse and the later development of sex addiction.

The research of information on the subject was carried out in january of 2023 and had no major restrictions since the existing literature on the topic is scarce, so an attempt was made to be as comprehensive as possible.

Because there is very little information regarding sexual abuse inflicted on adults and its consequences, it was decided to use all age ranges and figure out the sexual abuse significances in the psychiatric area, which explains why most articles picture the effects of sexual abuse in children.

To establish the relationship between hypersexuality and sexual abuse, the main source of information was the database PubMed. Research was made in english using the MeSH terms “hypersexuality” and “sexual abuse”, but ultimately other terms had to be used instead of hypersexuality because of its various labels such as “compulsive sexual behavior” and/or “sex addiction”.

Exclusion criteria were inappropriate topics and opinion articles.

What is considered sexual abuse

Sexual abuse encompasses many acts: rape within marriage or in dating relationships; rape by strangers or acquaintances; unwanted sexual advances or sexual harassment (at school, work etc.); systematic rape, sexual slavery and other forms of violence, which are particularly common in armed conflicts (e.g. forced impregnation); sexual abuse of mentally or physically disabled people; rape and sexual abuse of children; 'customary' forms of sexual violence, such as forced marriage or cohabitation and wife inheritance [5].

Penetration - vaginal, anal, or oral - with a body part or foreign object; caressing as well as other ways of stimulating genitals or female breasts; voyeurism or noncontact exposure of genitalia; threatened sexual violence - verbal harassment or pressure for sexual favors; exposing someone to pornography. These are some ways in which sexual abuse can be carried out [9-12].

Who is susceptible to being sexually abused

It can happen to anyone at any age – children, adults, and even elderly people.

The most worrying cases are obviously child sexual abuse [CSA]. CSA is common among both adult men and women and the long-term impact of CSA is similar for both - indicating that everyone, regardless of their gender, is vulnerable to this form of childhood maltreatment [13].

Consequences of sexual abuse

People who endured sexual abuse in early ages are the ones who suffer from its long-term consequences.

Girls and women bear the overwhelming burden of injury and disease from sexual violence and coercion, not only because they comprise the vast majority of victims, but also because they are vulnerable to sexual and reproductive health consequences such as unwanted pregnancy, unsafe abortion, gynecological trauma, sexual dysfunction, traumatic fistulae and a higher risk of sexually transmitted infections, including HIV through vaginal and anal intercourse. However, men are also vulnerable to HIV in cases of rape [5].

Consequences of sexual abuse include a wide range of psychosocial, psychiatric, and physical health outcomes.

Psychiatric consequences of sexual abuse

The medical literature has long reported an association between sexual abuse and psychiatric symptoms, that persist regardless of sex of the victim or age at which the abuse occurred. Both men and women may experience depression, anxiety, post-traumatic stress disorder, sleep difficulties, sexualized behavior, somatic complaints, eating disorders, dissociative symptoms, low self-esteem and suicidal behavior [12]. Literature has been reporting some association between sexual abuse and schizophrenia [14].

Victims can also develop high-risk behavior, like having unprotected sex, early consensual sexual initiation, multiple partners, substance use and misuse. Eventually, men have

a higher risk of perpetrating and women of experiencing subsequent sexual violence [5, 12, 14, 15].

Considering sexual abuse may have serious effects on the victim's repertoire of social skills, including the modulation and expression of sexual behaviors, it's important to determine the emergence of sexually reactive or overt offending behaviors.

Consequences of sexual abuse in someone's sexual life

Various aspects of sexual malfunctioning are related to CSA. For example, low frequency of intercourse, or inversely heightened sexuality, negative sexual attitudes, sexual dissatisfaction, lower sexual self-esteem, higher sexual concerns, heightened risk of sexual revictimization, and a vast array of sexual dysfunctions [16].

Two pathways have been studied to establish a relation between CSA and adult sexual functioning. The first path is avoidance, either caused by abuse flashbacks, aversion, dissociation during intercourse, negative feelings, and dysfunctions. The second path leads to the development of externalized, compulsive sexual behaviors and is also referred to as hypersexuality or addictive sexuality [16].

Most information and studies available focus on the avoidant response consequent to sexual abuse. With this narrative we are looking at the other side of the fence - heightened sexual response.

Presentations of hypersexuality

A variety of clinical presentations of hypersexuality have been noted and have revealed some intricacy. Some people report using masturbation to avoid other responsibilities or to alleviate feelings of anxiety. Others engage in adultery but have low sexual desire and behaviors with the person they're in a relationship with.

Some people who have hypersexual concerns don't even engage in excessive sexual behaviors, but believe their sexual acts are out of control or addictive, even though objectively such behaviors do not appear to be impaired or dysregulated. Therefore, the lack of information regarding this sensible subject is reasonable considering how difficult it is to define what classifies as hypersexual behavior or not [2].

Data from a study performed in 2016, compulsive sexual behavior was described to be more frequent among men – reporting that the most distressing behaviors were compulsive masturbation, pornography use, casual/anonymous sex with strangers, multiple sexual partners, and paid sex. For women it was high masturbation frequency, high number of sexual partners and use of pornography [17].

Hypersexuality and its synonyms – a clash of definitions

Over the last several decades, publications referencing the study of the term have increased. Despite the growing body of research, little consensus exists among researchers and clinicians about its definition and presentation. Most terms used as synonyms are weakly defined and used interchangeably throughout literature [18].

For example, back in 2006, two authors affirmed that sexual addiction can be identified as a disorder on the impulsive-compulsive spectrum. The impulsive component - pleasure, arousal, or gratification - initiates the cycle, and then a compulsive component leads to the persistence of the behavior, thus giving compulsive sexual behavior an apparent good definition [19]. Kafka, in 2010, referred to hypersexuality and compulsive sexual behavior as a repetitive and intense preoccupation with sex, shown in the form of fantasies, urges, and behaviors, all of which may lead to adverse consequences with deep distress [20].

These are not entirely different definitions. In fact, they could complement each other. And that's what's usually used when referring to hypersexuality. Given all the variations, this narrative review serves also to emphasize the clinical usefulness of a diagnosis for this condition and to provide more information about the relationship that may exist between this form of sexual distress and previous sexual abuse.

Hypersexuality in victims of sexual abuse in childhood

CSA is a heinous and heartbreaking crime. It is an act of power and control over a vulnerable person who has no understanding of the situation and is unable to defend themselves. It is one of the most traumatic and destructive forms of sexual abuse, with devastating and long-lasting effects on the survivors. It is vital to recognize the signs of CSA in order to protect them, as well as provide support and therapy. It is also important to remember that child sexual abuse is never the child's fault, and they should never be blamed.

The trauma created by this abuse can lead to feelings of shame, guilt, fear, and betrayal, as well as difficulty trusting others, low self-esteem, depression, and substance abuse, amongst others.

UNICEF reports that CSA and exploitation were prevalent in all countries of the world, and that 1 in 8 children globally have been sexually abused or exploited at some point in their life [21]. CSA has many detrimental effects on adult intimate relationships; thus this type of violence has been implicated as one of many potential precursors for the development of hypersexuality throughout life.

A recent 2020 meta-analysis ran by Slavin and colleagues supported a positive relationship between child sexual abuse and compulsive sexual behavior and that this association is also consistent with development of risky sexual behaviors [9]. In many different populations (gay and bisexual men, heterosexual couples, gang members, among others), this positive association is also present, thus emphasizing its global nature [11, 16, 22-24].

CSA was uniquely related to compulsive sexual behavior symptoms, above physical and

emotional abuse. With so much literature supporting this relationship, CSA may be a possible etiological factor for the development of a compulsive sexual behavior later in life [23].

Children first sexually abused at age 0 through 3 years appear more likely to have been chronically sexually abused and by a caretaker and were also abused by a greater number of victimizers [15, 25]. Findings suggests that early abuse and its resultant sequelae are important issues for children who require long-term psychiatric hospitalization as it has deep effects on developing social and behavioral skills, including the modulation and expression of sexual activity. Children abused at a very early age have the highest rate of behavioral disorders, a risk factor for developing inappropriate sexual behaviors. They have significant higher rates of hypersexual, exposing, and victimizing behaviors [15].

The severity of the abuse accounted for a portion of variance in compulsive sexual behaviors symptoms [23, 25].

It's important to note that the connection to being sexually abused in infancy was weaker or not significant in adults who sought professional help regarding their hypersexual behavior [9]. This might be explained by other causes of hypersexuality, unrelated to sexual abuse (e.g., other forms of abuse or negative family dynamics).

The prevalence of the positive relationship of hypersexuality and CSA is not influenced by individual biological sex or self-reported gender [9, 11, 16, 26, 27]. However, Vaillancourt-Morel reports more sexually compulsive thoughts and behaviors in men [27].

An interesting (but not entirely surprising) fact is that the older the child is when first abused, the more likely it is to be victimized by an unrelated individual and/or had abuse histories that included intercourse [15].

Some authors, such as Chatzittofis and colleagues, do not report a relationship or a very weak one between CSA and hypersexuality, or results that may differ from what was expected. All of them also specify limitations regarding the samples and the tools that were used to either establish the occurrence of childhood sexual abuse, or the diagnose of hypersexuality [16, 28].

Chatzittofis, in a study ran in men diagnosed with hypersexuality, report that they had a higher exposure to general violence in their childhood, not just sexual, and were also more violent as adults – which may be explained by the impulsivity component present in both violent acts and in hypersexuality [28].

A different consequence of sexual abuse, but still in the line of sexual behavior, is extradyadic sexual involvement, commonly known as infidelity. Vaillancourt-Morel and colleagues showed that among people who were sexually abused, infidelity within a current relationship was 32% for female and 57% for male survivors — rates that are more than twice as high as those in nonvictims in the general population. Infidelity is related to early sexual trauma, and the higher the frequency/intrusiveness of that abuse and the closeness relationship to the abuser, the higher the risk for extradyadic sexual impulsivity. The same author also found CSA to be associated to sexual compulsion that, in turn, also predicted infidelity. Thus, CSA both directly and indirectly (via sexual compulsivity) affects extradyadic sexual involvement [27].

Understanding the development of hypersexuality in the victims of child sexual abuse

For starters, survivors of CSA have the perception of themselves altered - they have such negative sexual self-concept that makes them report higher sexual distress and impairment, although their sexual behavior may be like those who denied abuse [9].

There are many theories on why people who were sexually abused when they were kids develop hypersexuality later in life.

Schwartz defends that kids who suffer abuse have a difficulty finding strategies to regulate their emotions within their relationship with caretakers, which leads to future social inadequacy. Children must have people they run to in order to metabolize toxic negative emotions, and when they don't have that type of people, there's an open door for fearing close relationships and individuals become vulnerable to find alternative solutions, such as compulsive sexual behavior, public exposure or fetishes [25].

Individuals may begin having compulsive sexual behavior as a way to avoid the psychological distress (depressive or anxious symptoms), emotional pain and traumatic memories that the abuse left in their life, and also as an attempt to recover from those past traumatic sexual experiences [23, 27].

In CSA, kids tend to repeat elements of the traumatic event. Some try to identify with the aggressor and display assaultive behavior; others develop self-destructive strategies such as self-harm. In the re-enactments, due to memory disturbances while experiencing the abuse, some people will repeat the trauma in disguised form, unaware of its origin. The re-enactments may become a habit and work as diversionary strategies from internal emptiness and restriction, giving the person a fleeting sense of closeness, control, and relief from loneliness and despair [25, 27].

"Trauma bonding" is also a theory where men and women who have experienced sexual abuse commonly exhibit aggressive paraphilic sexual arousal and imagery, thus sexual desire is coupled with panic and violence and people may revisit the terror and high arousal as to master, finish, or understand it. Adults who survived CSA appear to be frozen at the time of the trauma, acting out the violence frequently in their destructive decisions. As a result, they often re-victimize themselves out of familiarity and expectation but also, ironically, as a way to "master" the trauma [25].

A common act among women who were abused as children in response to re-lived terror is to develop a personality who "takes control", believing that they're in control of the sexual situation this time [25].

Another theory that Schwartz describes is "trauma over tragedy" where survivors seek sexual release to fulfill their appetite with a person they have no connection with and have no empathy for themselves or the other person, often taking pleasure from humiliating the other or self [25].

Ultimately, compulsive sexual behavior in survivors of CSA can become their primary sexual outlet, where they find a way to deflect from the pain and shame of the past, cope with the "increasingly burdensome demands of selfhood in daily life" and re-enact characteristics of the original trauma, living in a paradoxical way [25].

Schwartz finishes by explaining that this addictive sexual behavior is a necessity to take

control after being neglected as a child and they may display polarities of dependency – periods of hyposexuality because of the fear of intimacy, followed by an eventual natural desire to escape their feelings of loneliness where they enter a phase of being hypersexual and being out of control – much like other addictions such as anorexic-binge type. “In some ways, after the release of orgasm, emptiness quickly follows, which requires another ‘‘hit.’’ This cycle can seem ‘‘addictive’’ because individuals quickly cycle from the high (some illusion of connection or escape from emptiness) to the deep loss of profound aloneness“ [25].

Vaillancourt-Morel and her colleagues also described the presence of hyper and hyposexuality in CSA survivors who show both sexual compulsivity and sexual avoidance, and both symptoms coexist and create sexually ambivalent attitudes and behaviors. In response to sexual abuse sexual interactions may be organized along patterns of dominance and submissiveness – sexual submissive behaviors due to fear and threats leading to the inhibition of sexual pleasure and a phobic avoidance of sexual activities. On the other hand, compulsiveness can be considered a coping mechanism to overcome the image that they have of themselves as a helpless victim, or to explore the mind of the abuser [16].

Sexual avoidance and compulsivity in relationships where both members were abused may also manifest at different stages of the couple's relationship's evolution, with compulsivity defining the first stage and avoidance emerging as expectations of commitment rise [16].

Finally, the other sexual consequence related to sexual abuse - extradyadic sexual impulsivity - might happen also as a copying mechanism to reduce painful affects or as a reenactment of CSA, both highlighting sexual preoccupations or behaviors that are, to some extent, fueled by feelings of vulnerability, powerlessness, betrayal, or rejection [27].

Other theories behind the development of hypersexuality in non-abused individuals

Compulsive sexual behavior can also have other etiologies. For example, it may be a distraction for some individuals inherent characteristics such as shame (for other reasons besides abuse) or perfectionism – sex is used as a tension reducing strategy [25].

Swartz explained a couple more theories regarding the development of hypersexuality in people who did not sustain sexual abuse in their childhood.

Sexual compulsivity may come from the persons own temperament – for example, if they have a temperament of novelty seeking, they would probably act in an impulsive way; if they had a temperament of persistence, they would develop compulsive behaviors, including sexual [25].

In attachment theory, inadequate early attachment bonds to caretakers are highly predictive of later relationship distress. The importance of using the lens of attachment theory is that sexual disorders can be understood as difficulties with pair-bonding, courtship, attraction, love, affection, and intimacy. For example, preoccupied people resort to more sex in order to fill the needs for caretaking. People with avoidant attachment use sex “to be alone and disconnect

but still feel alive and experience some affective respite from emptiness through the intense release"[25].

In another theory, Swartz describes what happens to people that fall behind their peers during adolescence regarding the start of some courtship behavior like touching, kissing, holding hands and so on with their peers. Boys and girls who fall behind this stage develop social anxieties and fears which causes them to fall even further behind and they often turn to pornography and chat rooms, which serves as a reservoir of deviant sexual arousal training as well as a place to have aberrant encounters at a critical age [25].

Not related directly related to hypersexuality but an important point that Swartz makes is the relationship of premature exposure of children to eroticism and kids developing dangerous sexual behaviors. Early exposure of children to eroticism without sufficient guidance may lead them to have early sexual activation before they're emotionally ready, resulting in trauma as well. The media's frequent use of sexuality to get the attention of children and adolescents and the lack of parental or educational sexual guidance are the source of these exposures. In some cases, vulnerable kids may make poor decisions such as selling themselves sexually, seek contact with neighborhood pedophiles, molest siblings or peers, or engage in flirtatious behavior online [25].

Hypersexuality in people who were sexually abused as adults

Information considering abuse in this age range is very limited. Blairs conducted a study in men who were in the military and described a possible relationship between their sexual abuse in the military (as adults) and the later consequences on their sexual behavior [10].

According to Blairs, a greater distress is associated to sexual traumas that occurred while in the military than to those that happened earlier. Being abused in the military is linked to several mental health disorders such as the ones seen in survivors of CSA: PTSD, depression, anxiety, substance misuse, and the one we are focusing on – compulsive sexual behavior. Men who reported abuse in the miliary where the ones with higher rates of compulsive sexual behavior [10].

Slavin, in a different study than the one mentioned before, tried to identify gender related differences in the association between sexual abuse and hypersexuality, and studied CSA but also adolescent/adult sexual abuse. Adolescent/adult sexual abuse significantly predicted hypersexuality in both men ($B = 0.109$, $P < .001$) and women ($B = 0.061$, $P < .001$), which show some disparity considering widely suggestions that individuals abused at later ages develop sexual avoidance or disfunction [26]. However, both responses might appear simultaneously, as explained aforementioned.

Lifetime sexual abuse was more likely to predict hypersexuality than being abused at certain ages, and the relationship between cumulative abuse and hypersexuality was more significant in men [26].

Sexual victimization of adults throughout the course of their lifetimes and its impact on sexual behavior needs more extensive study.

Development of hypersexuality in elderly sexual abuse victims

Not many information exists regarding elder sexual assault as it is a challenging topic to study.

Rosen and colleagues revealed in a study that most sexual aggression against older adults happen in long-term care facilities (72%) and by other residents (69%). There's no evidence of elder people developing compulsive sexual behaviors in response to being sexually abused as older people, however it was never studied, so further investigation should take place [29].

Most victims are people who needed assistance and help with orientation to time and place and have probably also cognitive impairment prior the abuse, thus the prevalence of these abuses may be very misleading [29].

Older victims are more likely to have greater genital injury as a result of the abuse, which may also be explained by the fact that older people have other co-morbid conditions. Sexually transmitted infections are also a worry on older victims. But our focus is more on the psychological, emotional, and behavioral consequences. Victims often develop PTSD, become agitated, anxious, angry, have appetite and sleep changes, and become non-compliant, sometimes refusing personal care or attempt to wear multiple layers of clothes to protect their bodies. Some people manifest anxiety as physical complaints, raising concern that these consequences of sexual abuse could be misdiagnosed [29].

Hypersexuality in the older perpetrators of sexual abuse

The fact that most sexual abuse cases in long-term facilities happens between residents raises a different etiology for hypersexuality than the ones aforementioned.

The disinhibited hypersexual behavior of abusers can be due to dementing illness like dementia affecting the frontal or temporal lobe, Alzheimer's, or due to delusional psychosis brought on by drugs, such as dopaminergic medication for Parkinson's Disease [29].

There's a difficulty to study hypersexuality in the elderly because some behaviors in impaired people may be seen inappropriate, but they might not be motivated by sexual desire. Also, people with dementia are often unaware of their surroundings, and can start undressing or masturbating thinking they're in private but actually being in public.

Regarding solely hypersexuality, this author showed that between cognitively impaired men and women, the one's who would exhibit more hypersexual behaviors were men [29].

The growing worry is with the non-demented individuals who also engage in sexually aggressive activities with other residents or people [29]. Effort must be put into turning nursing homes in places where older people can safely express their sexuality, however allowing and facilitating sexual relationships between residents requires many rules the assessment of consent, which complex and challenging when facing a demented individual, for example [29].

Conclusion

Despite all the information about the aversive reaction to sex, heightened sexuality is a relevant consequence of sexual abuse. It may appear as if people with hypersexuality are in a comfortable psychological place and overcame the trauma of being sexually abused themselves, but this review comes to show how hurt, confused, and broken survivors can be behind their sexualized behavior.

More research should be conducted regarding the association between hypersexuality and sexual abuse, as well as hypersexuality by itself - it is proven to be a great source of distress for people who suffer from it. This condition should also be taken seriously by medical professionals and therapists, and the creation of clear definition and criteria for diagnose would provide a way for more people who suffer from this disorder to come forward and seek help.

For treatment, it's crucial to identify the impairments brought on by the abuse and to apply effective cognitive-behavioral therapy [25], therapies targeted at decreasing addictive behaviors, mindfulness-based practices [10], interventions focused on building self-esteem, positive sexual self-schemas, greater body awareness and connection [26]. For people who sustain lifetime sexual abuse, it’s important to assess all the episodes, because different types of trauma and the time they were inflicted may affect the person’s current presentation of hypersexuality and their responses to intervention [26].

Treatment for the other psychiatric consequences of sexual abuse - such as anxiety, depression, PTSD – should be done concurrently in order to make the healing process easier.

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Appendix A

Scale for the Assessment of Narrative Review Articles – SANRA

Please rate the quality of the narrative review article in question, using categories 0–2 on the following scale. For each aspect of quality, please choose the option which best fits your evaluation, using categories 0 and 2 freely to imply general low and high quality. These are not intended to imply the worst or best imaginable quality.

1) Justification of the article's importance for the readership

The importance is not justified. — 0
The importance is alluded to, but not explicitly justified. — 1
The importance is explicitly justified. — 2

2

2) Statement of concrete aims or formulation of questions

No aims or questions are formulated. — 0
Aims are formulated generally but not concretely or in terms of clear questions. — 1
One or more concrete aims or questions are formulated. — 2

2

3) Description of the literature search

The search strategy is not presented. — 0
The literature search is described briefly. — 1
The literature search is described in detail, including search terms and inclusion criteria. — 2

2

4) Referencing

Key statements are not supported by references. — 0
The referencing of key statements is inconsistent. — 1
Key statements are supported by references. — 2

2

5) Scientific reasoning

(e.g., incorporation of appropriate evidence, such as RCTs in clinical medicine)

The article's point is not based on appropriate arguments. — 0
Appropriate evidence is introduced selectively. — 1
Appropriate evidence is generally present. — 2

2

6) Appropriate presentation of data

(e.g., absolute vs relative risk; effect sizes without confidence intervals)

Data are presented inadequately. — 0
Data are often not presented in the most appropriate way. — 1
Relevant outcome data are generally presented appropriately. — 2

2

Sumscore 12

Fig. 1 SANRA - Scale

SANRA – explanations and instructions

This scale is intended to help editors assess the quality of a narrative review article based on formal criteria accessible to the reader. It cannot cover other elements of editorial decision making such as degree of originality, topicality, conflicts of interest or the plausibility, correctness or completeness of the content itself. SANRA is an instrument for editors, authors, and reviewers evaluating individual manuscripts. It may also help editors to document average manuscript quality within their journal and researchers to document the manuscript quality, for example in peer review research. Using only three scoring options, 0, 1 and 2, SANRA is intended to provide a swift and pragmatic sum score for quality, for everyday use with real manuscripts, in a field where established quality standards have previously been lacking. It is not designed as an exact measurement of the quality of all theoretically possible manuscripts. For this reason, the extreme values (0 and 2) should be used relatively freely and not reserved only for perfect or hopeless articles.

We recommend that users test-rate a few manuscripts to familiarize themselves with the scale, before using it on the intended group of manuscripts. Ratings should assess the totality of a manuscript, including the abstract. The following comments clarify how each question is designed to be used.

Item 1 – Justification of the article's importance for the readership

Justification of importance for the readership must be seen in the context of each journal's readership.
Consider how well the manuscript outlines the clinical problem and highlights unanswered questions or evidence gaps – thoroughly (2), superficially (1), or not at all (0).

Item 2 – Statement of concrete/specific aims or formulation of questions

A good paper will propose one or more specific aims or questions which will be dealt with or topics which will be reviewed.
Please rate whether this has been done thoroughly and clearly (2), vaguely or unclearly (1), or not at all (0).

Item 3 – Description of the literature search

A convincing narrative review will be transparent about the sources of information on which the text is based. Please rate the degree to which you think this has been achieved. To achieve a rating of 2, it is not necessary to describe the literature search in as much detail as for a systematic review (searching multiple databases, including exact descriptions of search history, flowcharts, etc.), but it is necessary to specify search terms, and the types of literature included. A manuscript which only refers briefly to its literature search would score 1, while one not mentioning its methods would score 0.

Item 4 – Referencing

No manuscript references all statements. However, those that are essential for the arguments of the manuscript – "key statements" – should be backed by references in all or almost all cases. Exceptions could reasonably be made for rating purposes where a key statement has uncontroversial face-validity, such as "Diabetes is among the commonest causes of chronic morbidity worldwide."
Please rate the completeness of referencing: for most or all relevant key statements (2), inconsistently (1), sporadically (0).

Item 5 – Scientific reasoning

The item describes the quality of the scientific point made. A convincing narrative review presents evidence for key arguments. It should mention study design (randomized controlled trial, qualitative study, etc), and where available, levels of evidence.
Please rate whether you feel this has been done thoroughly (2), superficially (1), or hardly at all (0). Unlike item 6, which is concerned with the selection and presentation of concrete outcome data, this item relates to the use of evidence and of types of evidence in the manuscript's arguments.

Item 6 – Appropriate presentation of data:

This item describes the correct presentation of data central to the article's argument. Which data are considered relevant varies from field to field. In some areas relevant data would be absolute rather than relative risks or clinical versus surrogate or intermediate endpoints. These outcomes must be presented correctly. For example, it is appropriate that effect sizes are accompanied by confidence intervals. Please rate how far the paper achieves this – thoroughgoingly (2), partially (1), or hardly at all (0). Unlike item 5, which relates to the use of evidence and of types of evidence in the manuscript's arguments, this item is concerned with the selection and presentation of concrete outcome data.

Fig. 2 SANRA—explanations and instructions document

Item 1 – Justification of the article's importance for the readership

"Most information and studies available focus on the avoidant response consequent to sexual abuse. With this narrative we are looking at the other side of the fence - heightened sexual response." – page 6.

Item 2 – Statement of concrete/specific aims or formulation of questions

"This narrative review focus on gathering and clarifying the main conclusions about the relationship of being a victim of sexual abuse and the later development of sex addiction." – page 4.

Item 3 – Description of the literature search

"To establish the relationship between hypersexuality and sexual abuse, the main source of information was the database PubMed. Research was made in english using the MeSH terms "hypersexuality" and "sexual abuse", but ultimately other terms had to be used instead of hypersexuality because of its various labels such as "compulsive sexual behavior" and/or "sex addiction". Exclusion criteria were inappropriate topics and opinion articles." – page 4.

"Because there is very little information regarding sexual abuse inflicted on adults and its consequences, it was decided to use all age ranges and figure out the sexual abuse significances in the psychiatric area, which explains why most articles picture the effects of sexual abuse in children." – page 4.

Item 4 – Referencing

"Schwartz defends that kids who suffer abuse have a difficulty finding strategies to regulate their emotions within their relationship with caretakers, which leads to future social inadequacy. Children must have people they run to in order to metabolize toxic negative emotions, and when they don't have that type of people, there's an open door for fearing close relationships and individuals become vulnerable to find alternative solutions, such as compulsive sexual behavior, public exposure or fetishes. "– page 8.

Item 5 – Scientific reasoning

"A recent 2020 meta-analysis ran by Slavin and colleagues supported a positive relationship between child sexual abuse and compulsive sexual behavior and that this association is also consistent with development of risky sexual behaviors." – page 7.

Item 6 – Appropriate presentation of data

"Adolescent/adult sexual abuse significantly predict hypersexuality in both men (B = 0.109, P<.001) and women (B = 0.061, P<.001), which show some disparity considering widely suggestions that individuals abused at later ages develop sexual avoidance or disfunction." – page 10.

Appendix B

Author information for publishing in The Journal of Sexual Medicine

Article Type

The Journal of Sexual Medicine publishes several types of manuscripts. A brief description of each type follows:

***Original Research**—approximately 2,500 words*

Original research papers are scientific reports from original research in sexual medicine.

Each piece should include:

- Structured abstract—maximum word count: 400
- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- Completed reporting guideline(s) to demonstrate the completeness of reporting in your manuscript. Failure to adhere to reporting best practices will result in revisions being requested ahead of publication. For more information on relevant reporting guidelines, please see the section below entitled Reporting Standards: Completeness and the Use of Reporting Guidelines.
- References—no limit on number
- Tables and figures—no limit on number

***Review**—No length limit*

Review articles are timely, in-depth treatment of an issue. Though narrative reviews are welcomed, meta-analyses and systemic reviews are preferred complete with thorough adherence to the PRISMA reporting guidelines.

Each piece should include:

- Structured abstract—maximum word count: 400
- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- Completed reporting guideline(s) to demonstrate the completeness of reporting in your manuscript. Failure to adhere to reporting best practices will result in revisions being requested ahead of publication. For more information on relevant reporting guidelines, please see the section below entitled Reporting Standards: Completeness and the Use of Reporting Guidelines.
- References—no limit on number

- Tables and figures—no limit on number

ISSM Methods Update*—No length limit*

Methods updates present current best practice for research in an area of sexual medicine. They are typically commissioned by the Editors, but please contact the Chief Editor if you would like to suggest a topic.

Each piece should include:

- Structured abstract—maximum word count: 400
- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- References—no limit on number
- Tables and figures—no limit on number

Surgeons' Corner*—Maximum Word Count: 2,500*

Papers published in Surgeons' Corner will include those commissioned for the section, and those submitted as original research papers that focus on the technical aspects of a broad range of surgical procedures in male, female, and transgender sexual medicine.

Manuscripts should adhere to the following structure:

- Structured abstract—maximum word count: 400
- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- Introduction/Background—include rationale for a novel technique
- Indications for procedure
- Pre-operative preparation
- Intra-operative considerations
- Post-operative management and follow-up
- Outcomes—including a brief review of the literature
- Complications
- Take-home message
- References—no limit on number
- Tables and figures—no limit on number

Brief Communication*—Maximum Word Count: 1,200*

Each piece should include:

- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- References—maximum number of 4

Expert Opinion—*Maximum Word Count: 1,200*

Opinions present potentially controversial viewpoints, with aim of encouraging debate. These are science-based, opinion pieces that may either be commissioned or directly submitted to JSM and are subjected to peer review. They should not include abstracts.

- Authors should include 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title.
- No abstract, subheadings, figures, or tables
- References —up to 4

Perspective—*Maximum Word Count: 500*

Perspectives provide commentary and analysis of an article published in JSM. Perspectives are directly solicited by our staff.

Each piece should include:

- 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title
- References—up to 5

Letter to the Editor—*Maximum Word Count: 1,000*

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Title

Abstract
The Journal of Sexual Medicine uses structured abstracts to ensure that all essential information is presented. See below for details.

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Authors should provide 4 to 10 keywords or short phrases for cross-indexing the article. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used whenever possible. Try to avoid repeating terms in the Title.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Materials and Methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

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If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Title Page

Please include the following:

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- a short running head of 50 characters or less
- all author names, affiliations, and highest qualifications (PhD, MD, etc.)
- mailing address and email address of one corresponding author

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JSM has changed the format of its abstract in an effort to permit the reader to glean a greater degree of understanding of the research by simply reading the abstract without reading the full manuscript. The aim is to expand the Methods and Results sections to facilitate a more meaningful interpretation of the research. Abstracts have a maximum length of 400 words and must not contain reference citations or abbreviations.

- Abstracts should have the following headers (with suggested lengths):
- Background (one sentence)
- Aim (one sentence)
- Methods
- Outcomes (one sentence)
- Results
- Clinical Implications (clinical papers) or Clinical Translation (basic science papers) (one sentence)
- Strengths and Limitations
- Conclusion (one sentence)

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Below the abstract authors should provide, and identify as such, 4 to 10 key words or short phrases that will assist indexers in cross-indexing the article and may be published with abstract. Terms from the Medical Subject Headings (MeSH) list of Index Medicus should be used; if suitable MeSH terms are not yet available for recently introduced terms, present terms may be used. Try to avoid repeating terms in the Title.

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Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

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- Supplementary material must be cited in the text of the main manuscript.
- Supplementary material will be available online only and will not be copyedited or typeset.
- Style and formatting of supplementary material should be consistent with that of the manuscript.

- Supplementary material should be formatted to function on any internet browser.
    - Documentation and online appendices should be submitted in PDF file format.
    - Data files should be submitted in a .zip file format.

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All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed.

Reporting Standards: Completeness and the Use of Reporting Guidelines

In an attempt to improve the quality of research reports in the journal, *The Journal of Sexual Medicine* now recommends a completed reporting guideline checklist is included with an article submission. The purpose of various reporting guidelines is to provide a guide—in the form of a checklist—to authors and editors alike on essential elements that should be included in a paper to ensure all stakeholders can properly validate results and replicate studies. We expect authors to not only use the reporting guidelines to improve the quality of reporting in their submission, but also use the associated guideline checklist to demonstrate the paper does include essential reporting criteria. Ultimately, this task is about improving a manuscript, not filling out a checklist for administrative purposes.

For Reviews and Original Research articles, authors are required to complete one of the reporting checklists listed below. This ensures a higher standard of reporting and will enhance the prospects of a manuscript being accepted for publication. Authors should upload a completed copy of the reporting checklist(s) with their submission.

STUDY TYPE	STUDY TYPE CATEGORY	CHECKLIST FOR REPORTING STANDARDS	CHECKLIST NAME
Randomized controlled pharmacotherapy trials	RCT (Pharmacotherapy)	CONSORT-Consolidated Standards of Reporting Trials	CONSORT Statement
Other pharmacotherapy and herbal medicinal trials (noninferiority trials, pragmatic trials, cluster trials, reporting of harms)	RCT (Other)	CONSORT extensions (tailored versions of the main CONSORT Statement produced by	CONSORT Checklist
Observational epidemiology studies	Observational Epidemiological Studies	STROBE-Strengthening the reporting of observational studies in epidemiology	STROBE Checklist
Qualitative Research	Qualitative Research	COREQ-Consolidated criteria for reporting qualitative research	COREQ Checklist
Diagnostic Accuracy Studies	Diagnostic Accuracy Studies	STARD-Standards for reporting diagnostic accuracy	STARD Checklist

Systematic reviews	Systematic Reviews	PRISMA (formerly known as QUOROM)-Improving the quality of reports of meta-analyses of randomized controlled trials	PRISMA Checklist
Meta-analyses of controlled trials	Meta-analysis of Controlled Trials	PRISMA (formerly known as QUOROM)-Improving the quality of reports of meta-analyses of randomized controlled trials	PRISMA Checklist
Quality improvement reports	Quality Improvement Reports	SQUIRE-Standards for quality improvement reporting excellence	SQUIRE Checklist
Erectile Function Recovery analysis following radical pelvic surgery	All relevant studies	ERF-Erectile Function Recovery Checklist	ERF Checklist

STUDY TYPE	STUDY TYPE CATEGORY	CHECKLIST FOR REPORTING STANDARDS	CHECKLIST NAME
Pre-Clinical Studies	Animal Studies	Animal Research: Reporting In Vivo Experiments	ARRIVE
JSM Guidelines for Protein Detection and PCR	JSM Guidelines for Protein Detection and PCR	JSM Guidelines + MIQE Checklist	JSM PCR Guidelines and MIQE Checklist
Transgender-Related Research	Transgender-Related Research	JSM Instructions for Authors of Transgender-Related Research	JSM Instructions for Authors of Transgender-Related Research

JSM expects that all prospective, randomized, controlled trials with patient enrollment be registered in a public database that meets the requirements of the World Health Organizat

Currently, such registries include the following: http://www.actr.org.au, http://www.clinicaltrials.gov, http://www.ISRCTN.org, http://www.umin.ac.jp/ctr/index/htm, and http://www.trialregister.nl.

For more information, please refer to the guidelines at http://www.icmje.org/#clin_trials. Upon submission, please provide the registration identification number and the URL for the trial's registry in your cover letter.

Cell Line Authentication

To ensure the highest standards of quality and accuracy, The Journal of Sexual Medicine strongly encourages the authentication of cell lines used in the research submitted. Manuscripts based

on research using cell lines must include a statement addressing the following points in the Methods section of the manuscript:

- Where the cells were obtained from
- Whether the cell lines have been tested and authenticated via the method by which the cells were tested

If cells were obtained directly from a cell bank that performs cell line characterizations and passaged in the user's laboratory for fewer than 6 months after receipt or resuscitation, re-authorization is not required. In these cases, please include the method of characterization used by the cell bank. If the cell lines were obtained from an alternate source, authors must provide authentication of the origin and identity of the cells. This is best achieved by DNA (STR) profiling. The DNA profile should be cross-checked with the DNA profile of the donor tissue (in case of a new cell line) or with the DNA profile of other continuous cell lines.

Gene Names and Genetic Profiling Data

Please mark all gene names in italics. However, only the gene names should be written in italics, to distinguish them from gene products, gene segments, clusters, families, complexes, or groups. Authors should only use the official gene name as assigned by the respective gene nomenclature committee. Regarding comprehensive data sets of genetic profiling (microarray) studies, raw data must be in a publicly available database that requires MIAME format (for example, “GEO” or “Array Express”) upon submission of a paper. Nucleotide sequence data can be submitted in electronic form to any of the three major collaborative databases: DDBJ, EMBL or GenBank. It is only necessary to submit to one database as data are exchanged between DDBJ, EMBL and GenBank on a daily basis. The suggested wording for referring to accession-number information is: ‘These sequence data have been submitted to the DDBJ/EMBL/GenBank databases under accession number U12345.’

Statistical Guidelines

All submitted manuscripts containing data analyses will be evaluated for the integrity of the statistical methods as well as a sufficient description of the methodological approach. This will entail evaluation of the study design, statistical analysis and presentation, and interpretation of study results. As a general guideline, readers of the manuscript should be able to replicate the analysis with the same data based on the description given in the Methods section. Authors are encouraged to carefully select language in the Discussion that is appropriate given the study design and refrain from causal inferences from observational (nonrandomized) studies.

Authors should also be explicit about the limitations of the study. Failure to disclose important limitations upon submission may be grounds for rejecting the manuscript.

The editors of the JSM recommend the shared set of "Guidelines for Reporting of Statistics for Clinical Research in Urology" by Assel et al[1], and adopted by four leading urology journals (*European Urology*, *The Journal of Urology*, *Urology*, and *British Journal of Urology International*). While this guideline is not indented in any way to be prescriptive, it can serve as a didactic roadmap for researchers who seek to improve the quality of their reporting of statistics in urological manuscripts before submitting them for peer-review and publication.

The following are the key considerations when reporting statistics, adapted for JSM from the "Guidelines for Reporting of Statistics for Clinical Research in Urology" by Assel et al [1] :

1. The Golden Rule

1.1 Break any of the guidelines if it makes scientific sense to do so.

2. Reporting Of Design And Statistical Analysis

2.1 Follow existing reporting guidelines for the type of study you are reporting, such as CONSORT for randomized trials, ReMARK for marker studies, TRIPOD for prediction models, STROBE for observational studies, or AMSTAR for systematic reviews.

2.2 Describe cohort selection fully.

2.3 Describe the practical steps of randomization in randomized trials.

2.4 The statistical methods should describe the study questions and the statistical approaches used to address each question.

2.5 The statistical methods should be described in sufficient detail to allow replication by an independent statistician given the same data set.

3. Inference and P values

3.1 Do not accept the null hypothesis.

3.2 P values just above 5% are not a trend, and they are not moving.

3.3 The P values and 95% confidence intervals do not quantify the probability of a hypothesis.

3.4 Do not use confidence intervals to test hypotheses.

3.5 Take care to interpret results when reporting multiple P values.

3.6 Do not report separate P values for each of two different groups in order to address the question of whether there is a difference between groups.

3.7 Use interaction terms in place of sub-group analyses.

3.8 Tests for change over time are generally uninteresting.

3.9 Avoid using statistical tests to determine the type of analysis to be conducted.

3.10 When reporting P values, be clear about the hypothesis tested and ensure that the hypothesis is a sensible one.

4. Reporting of study estimates

4.1 Use appropriate levels of precision.

- Report P values to a single significant figure unless the P value is close to .05 (say, .01 - .2), in which case, report two significant figures. Do not report "not significant" for P values of .05 or higher. Very low P values can be reported as P < .001 or similar. A P value

can indeed be 1, although some investigators prefer to report this as > .9. For instance, the following P values are reported to appropriate precision: < .001, .004, .045, .13, .3, 1.

- Report percentages, rates, and probabilities to two significant figures, for example, 75%, 3.4%, 0.13%.
- Do not report P values of 0, as any experimental result has a non-zero probability.
- Do not give decimal places if a probability or proportion is 1 (eg, a P value of 1.00 or a percentage of 100.00%). The decimal places suggest that it is possible to have, say, a P value of 1.05. There is a similar consideration for data that can take only integer values. It makes sense to state that, for instance, the mean number of pregnancies was 2.4, but not that 29% of women reported 1.0 pregnancy.
- There is generally no need to report estimates to more than three significant figures.
- Hazard and odds ratios are normally reported to two decimal places, although this can be avoided for high odds ratios (eg, 18.2 rather than 18.17).

4.2 Avoid redundant statistics in cohort descriptions.

4.3 For descriptive statistics, median and quartiles are preferred over means and standard deviations (or standard errors).

4.4 Report estimates for the main study questions.

4.5 Report confidence intervals for the main estimates of interest.

4.6 Do not treat categorical variables as continuous.

4.7 Avoid categorization of continuous variables unless there is a convincing rationale.

4.8 Do not use statistical methods to obtain cut-points for clinical practice.

4.9 The association between a continuous predictor and outcome can be demonstrated graphically, particularly by using nonlinear modeling.

4.10 Do not ignore significant heterogeneity in meta-analyses.

4.11 For time-to-event variables, report the number of events but not the proportion.

4.12 For time-to-event analyses, report median follow-up for patients without the event or the number followed without an event at a given follow-up time.

4.13 For time-to-event analyses, describe when follow-up starts and when and how patients are censored.

4.14 For time-to-event analyses, avoid reporting mean follow-up or survival time, or estimates of survival in those who had the event.

4.15 For time-to-event analyses, make sure that all predictors are known at time zero or consider alternative approaches such as a landmark analysis or time-dependent covariates.

4.16 When presenting Kaplan-Meier figures, present the number at risk and truncate follow-up when numbers are low.

5. Multivariable models and diagnostic tests

5.1 Multivariable, propensity, and instrumental variable analyses are not a magic wand.

5.2 Avoid stepwise selection.

5.3 Avoid reporting estimates such as odds or hazard ratios for covariates when examining the effects of interventions.

5.4 Rescale predictors to obtain interpretable estimates.

5.5 Avoid reporting both univariate and multivariable analyses unless there is a good reason.

5.6 Avoid ranking predictors in terms of strength.

5.7 Discrimination is a property not of a multivariable model but rather of the predictors and the data set.

5.8 Correction for overfit is strongly recommended for internal validation.

5.9 Calibration should be reported and interpreted correctly.

5.10 Avoid reporting sensitivity and specificity for continuous predictors or a model.

5.11 Report the clinical consequences of using a test or a model.

5.12 Interpret decision curves with careful reference to threshold probabilities.

6. Conclusions and interpretation

6.1 Draw a conclusion, do not just repeat the results.

6.2 Avoid using words such as "may" or "might".

6.3 A statistically significant P value does not imply clinical significance.

6.4 Consider sources of potential bias and the mechanism for their effect on findings.

6.5 Consider the impact of missing data and patient selection.

6.6 Consider the possibility and impact of ascertainment bias.

6.7 Do not confuse outcome with response among subgroups of patients undergoing the same treatment: patients with poorer outcomes may still be good candidates for that treatment.

6.8 Be cautious about causal attribution: correlation does not imply causation.

7. Use and interpretation of P values

Refer to either the full statement:

[https://www.tandfonline.com/doi/full/10.1080/00031305.2016.1154108] or the summary [https://www.amstat.org/asa/files/pdfs/P_ValueStatement.pdf] of the American Statistical Association statement on P values. In particular, we emphasize that a P value is just one statistic that helps interpret a study; it does not determine our interpretations. Drawing conclusions for research or clinical practice from a clinical research study requires evaluation of the strengths and weaknesses of study methodology, results of other pertinent data published in the literature, biological plausibility, and effect size. Sound and nuanced scientific judgment cannot be replaced by just checking whether one of the many statistics in a paper is or is not < .05.

For further information, please refer to the full paper:

1 Assel M, Sjoberg D, Elders A, Wang X, Huo D, Botchway A, Delfino K, Fan Y, Zhao Z, Koyama T, Hollenbeck B, Qin R, Zahnd W, Zabor EC, Kattan MW, Vickers AJ. Guidelines for Reporting of Statistics for Clinical Research in Urology. Eur Urol. 2019;75(3):358-67. PMID: 30580902; PMCID: PMC6391870.

Drugs and Devices

Use of generic drug names (or generic name followed by trade name in parentheses) may be used. Include manufacturer and their location (city and country) for drugs and devices.

Manuscript Submission Checklist

Please use the Manuscript Submission Checklist to ensure that the manuscript has all the information necessary for successful publication.

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- Full author names and the highest qualifications (PhD, MD, etc.) for all authors
- Institution, city, and country details for each author
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3. Abstracts for Original Research articles must be structured as follows: Background (one sentence), Aim (one sentence), Methods, Outcomes (one sentence), Results, Clinical Implications (one sentence), Strengths & Limitations, Conclusion (one sentence).

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- Generate all graphs in professional software (e.g., R) and save these directly in vector format (.pdf or .eps). Images in vector format are always sharp no matter how far you zoom in
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