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PROFILS ET TRAJECTOIRES DES RÉPONSES SEXUELLES CHEZ LES FEMMES RAPPORTANT UN HISTORIQUE D'AGRESSION SEXUELLE À L'ÂGE ADULTE

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Résumé substantiel en français

L'agression sexuelle à l'âge adulte (ASA), définie comme tout contact sexuel non consenti, tenté ou complété, impliquant la force, une incapacité à consentir ou la coercition après l'âge de 16 ans, constitue un phénomène fréquent, touchant environ 33 à 39 % des femmes. L'ASA est associée à des difficultés de santé mentale, notamment le trouble de stress post-traumatique (TSPT), la dépression, l'anxiété et une consommation problématique de substances. De plus, l'ASA est liée à divers effets sur la sexualité, tels que des dysfonctions sexuelles, l'évitement sexuel et la compulsivité sexuelle. Cependant, ces conséquences sont hétérogènes : certaines survivantes ne rapportent aucune difficulté sexuelle particulière, tandis que d'autres présentent un évitement sexuel ou, à l'inverse, une compulsivité sexuelle. Il importe donc de mieux saisir la complexité de cette hétérogénéité des réponses sexuelles chez les femmes ayant vécu une ASA.

Compte tenu de la nature interpersonnelle de ce type de traumatisme, les femmes ayant vécu une ASA présentent un risque accru de développer un trouble de stress post-traumatique complexe (TSPT-C). Ce diagnostic inclut trois dimensions symptomatiques majeures : les symptômes classiques du TSPT (p. ex., reviviscence, évitement, hypervigilance) les représentations négatives de soi et des autres, et la dysrégulation affective. Ces dimensions pourraient influencer le fonctionnement général des survivantes, notamment leur sexualité.

Objectifs

Cette étude visait à examiner les profils et les trajectoires sur 12 mois de l'évitement sexuel et de la compulsivité sexuelle chez les femmes ayant vécu une ASA, ainsi que leurs associations avec quatre prédicteurs clés : le TSPT, l'évitement et l'anxiété d'attachement, et la dysrégulation affective.

Méthode

Un échantillon de 316 femmes ayant subi une ASA a été recruté via les réseaux sociaux, courriels et organismes communautaires, afin de compléter des questionnaires autorapportés à quatre reprises sur une période de 12 mois (T1, T2 : 3 mois, T3 : 6 mois, T4 : 12 mois). Au T1, elles ont décrit les agressions subies (*Sexual Experiences Survey*) et complété des instruments validés mesurant : les symptômes de trouble de stress post-traumatique (PDS-5), l'attachement évitant et anxieux (ECR-S) ainsi que la dysrégulation affective (sous-échelle de l'IASC). À chaque temps, l'évitement sexuel (*Sexual Aversion Scale*) et la compulsivité sexuelle (*Sexual Compulsivity Scale*) ont été évalués. L'âge, le nombre d'années de scolarité, le statut relationnel et les antécédents d'abus sexuel durant l'enfance ont servi de variables contrôles. Les données manquantes ont été prises en charge par l'estimation du maximum de vraisemblance avec informations complètes (FIML). Les statistiques descriptives ont été produites avec SPSS 28. Les analyses principales avec Mplus 8.9 avec l'estimateur robuste MLR. Pour l'objectif 1, des analyses de profils latents fondées sur l'évitement sexuel et la compulsion sexuelle au temps initial ont comparé des solutions de 1 à 8 classes (AIC, BIC, VLRT, BLRT,

entropie), puis un modèle multinomial à trois étapes a testé les quatre prédicteurs en incluant également les quatre variables contrôles. Pour l'objectif 2, des modèles de croissance latente (*latent growth curve model,* LGCM) inconditionnel puis conditionnel (c-.à-d., sans puis avec les quatre prédicteurs simultanément ainsi que les variables contrôles) incluant des estimés fixes et aléatoires des intercepts, pentes linéaire et pentes quadratique ont modélisé l'évolution de l'évitement sexuel et de la compulsion sexuelle.

Résultats

Quatre profils distincts de comportements sexuels ont été identifiés par analyse de profils latents : (1) un profil de sexualité sécurisée regroupant environ 65 % des participantes, caractérisé par de faibles niveaux d'évitement sexuel et de compulsivité sexuelle; (2) un profil de sexualité évitante (17 %), marqué par un évitement sexuel élevé et une faible compulsivité; (3) un profil de sexualité compulsive (14 %), montrant une compulsivité sexuelle élevée et un faible évitement; et (4) un profil de sexualité désorganisée (5 %), combinant des niveaux élevés des deux comportements. Les analyses ont révélé que les femmes du profil évitant présentaient davantage de symptômes de TSPT, tandis que celles du profil compulsif rapportaient une dysrégulation affective plus marquée. Les femmes appartenant au profil désorganisé rapportaient à la fois davantage des symptômes de TSPT et d'anxiété d'attachement. En ce qui concerne les analyses longitudinales et les trajectoires observées sur la période de 12 mois, l'évitement sexuel est resté relativement stable au cours des 12 mois alors que la compulsivité sexuelle a diminué légèrement durant les six premiers mois avant de se stabiliser. Cette diminution

de la compulsivité sexuelle était spécifiquement associé à une anxiété d'attachement initialement plus élevée. De plus, les symptômes initiaux de TSPT et l'évitement d'attachement étaient associés à des niveaux initiaux plus élevés d'évitement sexuel, tandis que l'anxiété d'attachement et la dysrégulation affective étaient corrélées à des niveaux initiaux plus élevés de compulsivité sexuelle. Ces résultats soulignent l'hétérogénéité des comportements sexuels chez les femmes survivantes d'ASA et mettent en évidence les associations complexes entre les symptômes de TSPT, les représentations de soi et des autres, la dysrégulation affective et les comportements sexuels chez les femmes ayant vécu une ASA. La coexistence d'évitement sexuel et de compulsivité dans le profil désorganisé souligne particulièrement l'ambivalence de certaines survivantes face à l'intimité et à la sexualité. Enfin, ces résultats invitent les cliniciens à adopter une approche individualisée et sensible aux diverses manifestations de la sexualité post-traumatique chez les survivantes d'ASA.

Article scientifique

Profiles and Trajectories of Sexual Responses Among Women Reporting a History of Adult Sexual Assault

Profiles and Trajectories of Sexual Responses Among Women Reporting a History of Adult Sexual Assault

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Abstract

This study examined profiles and 12-months trajectories of sexual avoidance and sexual compulsivity among 316 women with a history of adult sexual assault (ASA). We also examined their associations with four key predictors: post-traumatic stress disorder (PTSD), attachment avoidance, attachment anxiety, and affect dysregulation. Four profiles emerged: secure sexuality (5%), avoidant sexuality (17%) linked to higher PTSD, compulsive sexuality (14%) linked to affect dysregulation, and disorganized sexuality (5%) linked to higher PTSD and attachment anxiety. Although sexual avoidance remained stable over 12 months, sexual compulsivity initially decreased and then stabilized, with initial higher attachment anxiety associated with this decrease. These results highlight that women survivors of ASA report varying levels of sexual avoidance and compulsivity, that are related to PTSD, attachment avoidance, attachment anxiety, and affect dysregulation.

Keywords: Adult sexual assault, sexual behaviors, sexual avoidance, sexual compulsivity, women, attachment, affect dysregulation, post traumatic stress disorder.

Introduction

Adult sexual assault (ASA), defined as any attempted or completed non-consensual sexual contact involving force, incapacitation, or coercion with individuals aged at least 16 years, the minimum legal age of consent (Dworkin et al., 2023), is a prevalent issue affecting a significant proportion of women. National representative samples have shown that ASA affects about one in three women (33 to 39%; Perreault, 2020). ASA is known to be associated with enduring negative effects on mental health including post traumatic stress disorder (PTSD), depression, anxiety, and problematic substance use (Campbell et al., 2004). Given the sexual nature of this trauma, ASA is unsurprisingly related to sexual difficulties, including a higher risk of sexual dysfunction and dissatisfaction (Turchik & Hassija, 2014; van Berlo & Ensink, 2000). However, research indicates significant variability in sexual responses following sexual assault (SA, i.e., including child sexual abuse (CSA) and ASA).

This variability includes both hypersexual and hyposexual behaviors, reflecting the complex and often contradictory ways survivors may respond to sexual trauma. Hypersexual behaviors can include sexual compulsivity, preoccupations with sex, engaging in multiple casual sexual encounters, unprotected sex, or using sex as a coping mechanism (Campbell et al., 2004; Turchik & Hassija, 2014). In contrast, hyposexual behaviors are characterized by reduced sexual desire, sexual avoidance, difficulties with arousal or orgasm, and sexual pain (van Berlo & Ensink, 2000). Some survivors may experience a mix of these opposed sexual behaviors in a complex pattern of sexual

ambivalence or disorganized sexuality, or none at all, highlighting the large spectrum of sexual responses and the deeply individual nature of SA survivors' experiences (Labadie et al., 2018; Vaillancourt-Morel et al., 2016).

Sexual behaviors could also change over time, as developmental or interpersonal factors may influence how survivors relate to sexuality and to others (e.g., younger survivors and those in low commitment relationships report more sexual compulsivity; Vaillancourt-Morel et al., 2016). These mixed results highlight the heterogeneity in women's sexual responses to ASA and the need for a deeper understanding of their sexual response profiles and trajectories over time. Indeed, patterns of sexual behaviors may change over time, even over a short period of time, as women navigate a changing environment and different life situations: post-traumatic growth (Rahmandani et al., 2025), therapeutic interventions (Ford & Courtois, 2020) and, developmental or interpersonal factors (Vaillancourt-Morel et al., 2016). Moreover, most studies investigated the impact of CSA on adult sexual behaviors (Labadie et al., 2018; Vaillancourt-Morel et al., 2016), while only a handful of studies focused on the association between ASA and sexual avoidance or compulsivity. To address this gap, this study aimed to examine profiles and trajectories of sexual avoidance and sexual compulsivity in women with an ASA history and to investigate their associations with key predictors.

Sexual Responses to ASA: Sexual Avoidance and Compulsivity

Systematic reviews conceptually organized the corpus of sexual responses following a SA in two distinct potential pathways of responses: hypersexual or compulsive and hyposexual or avoidant behaviors (Aaron, 2012; Colangelo & Keefe-Cooperman, 2012). Although sexual avoidance and compulsivity appear to represent opposite ends of the behavioral spectrum, both may reflect a common underlying dynamic: a strategy to avoid intimacy and vulnerability in the aftermath of SA. Sexual avoidance serves as a protective mechanism (Campbell et al., 2004; Noll et al., 2003), where individuals withdraw from sexual or intimate encounters entirely to shield themselves from re-experiencing trauma, confronting emotional pain, or facing relational vulnerabilities. Sexual compulsivity can also function as a mechanism to avoid true intimacy and vulnerability. In this context, sexual engagement becomes devoid of emotional closeness or connection, instead serving as mean to numb emotional pain, distract from internal distress, or achieve a sense of pseudo-intimacy (Gewirtz-Meydan & Godbout, 2023). In some cases, compulsive sexual behaviors could also represent a way to re-enact the trauma giving the survivors a sense of control over their bodies and sexual life (Fontanesi et al., 2021; Meyer et al., 2017). Both responses align with trauma theories that emphasize survivors' attempts to regain control, minimized distress, and protect themselves from perceived or actual threats (Aaron, 2012; Briere, 2002; Herman, 1992). The shared underlying function of sexual avoidance and compulsivity emphasizes the importance of a nuanced understanding of these seemingly opposing responses, as both behaviors may stem from similar psychological processes tied to trauma, self-protection, and the avoidance of vulnerability.

This complex dynamic of sexual responses in SA survivors highlights the need to examine sexual avoidance and compulsivity profiles and trajectories over time in adult women with a history of ASA. Exploring these profiles and their evolution could help uncover complex patterns, and offer a better understanding of psychological factors associated with sexual compulsivity and sexual avoidance.

Predictors of Sexual Responses of ASA

The interpersonal and intentional nature of a trauma like ASA is related to higher odds of developing a complex form of PTSD (American Psychiatric Association [APA], 2013; Herman, 1992). Introduced in the ICD-11 in 2018, complex PTSD is defined as a potential consequence of exposure to highly threatening events, such as ASA, from which escape is difficult (World Health Organization [WHO], 2024). The diagnostic criteria include three major symptom groups—PTSD symptoms, negative self and other representations, and affect dysregulation—that can impact a survivor's functioning, including sexual behaviors, as outlined in trauma models such as Briere's self-trauma model (2002). Theses three major symptoms groups may relate to both sexual avoidance and compulsivity profiles and trajectories in women with an ASA history.

PTSD symptoms are characterized by (a) re-experiencing the trauma (i.e., intrusive memories, flashbacks, nightmares, overwhelming or absence of emotions, and strong physical sensation); (b) behavioral and cognitive avoidance of elements reminiscent of the events; (c) negative alterations in cognitions and mood (i.e., dissociative amnesia;

persistent negative beliefs or expectations; distorted self- or other-blame; persistent negative affect such as fear, horror, anger, guilt, or shame; markedly diminished interest; detachment or estrangement; inability to experience positive emotions); and (d) marked alterations in arousal and reactivity (i.e., irritability or angry outbursts, reckless or self-destructive behavior, hypervigilance, exaggerated startle response, concentration difficulties, and sleep disturbance; APA, 2013). A recent meta-analysis indicates that approximately 31 to 52% of women reporting ASA meet PTSD criteria diagnosis over the course of their life (Dworkin et al., 2023). While PTSD is often linked to risky sexual behaviors (Kratzer et al., 2022), it may also lead to sexual avoidance or compulsivity, reflecting attempts to manage trauma-related emotions. Indeed, a handful of studies among men and women showed that PTSD symptoms are related to higher sexual avoidance and higher sexual compulsivity (Fontanesi et al., 2021; Schnurr et al., 2009). Moreover, these general population studies showed that sexual compulsivity among individuals with PTSD appears to be more pronounced in men (Fontanesi et al., 2021). According to gender-based theories - proposing more internalized behaviors (e.g., avoidance) in female survivors (Aaron, 2012) - women survivors may be more likely to attempt to regulate PTSD symptoms via sexual avoidance than via sexual compulsivity. However, no study has specifically examined how PTSD following ASA relates to sexual behaviors, let alone in women.

Negative *self* representation involves survivors perceiving themselves as diminished, defeated, or worthless, along with feelings of guilt, shame, or failure associated with the

assault. Negative *other* representation refers to a vision of others as being careless, unreliable, and/or uninvested, leading to persistent challenges in maintaining relationships and feeling close to others, relationship avoidance or dismissiveness, and low interest in social interactions (WHO, 2024). These two dimensions also describe the adult attachment system, which govern general experiences, interactions, and behaviors in intimate relationships, with negative self representation corresponds to attachment anxiety—marked by insecurities about rejection and abandonment—whereas negative other-representation corresponds to attachment avoidance—marked by discomfort with closeness and interdependence (Bowlby, 1969; Brassard et al., 2007). There is substantial evidence that major life events such as SA significantly hinders the attachment system (Ensink et al., 2020), including in adulthood (Ciocca et al., 2020). Research both within and beyond the context of SA consistently highlights a link between attachment avoidance and higher sexual avoidance (Brassard et al., 2007; Stefanou & McCabe, 2012), with some studies indicating this association is stronger in women than in men (Schachner & Shaver, 2004). Conversely, attachment avoidance and attachment anxiety are both associated with higher sexual compulsivity (Rahm-Knigge et al., 2023; Weinstein et al., 2015). For individuals with higher attachment avoidance, sexual compulsivity may serve as a mean to distance themselves from intimacy (Meyer et al., 2017). For individuals with higher attachment anxiety, sexual compulsivity may be adopted to reduce insecurity such as rejection and abandonment and foster intense closeness through sexuality even if the resulting sexual engagement lacks emotional depth (Brassard et al., 2007; Schachner & Shaver, 2004). At the same time, for these anxious attachment individuals, sexual

avoidance may also occur, as they often struggle to fully relax and enjoy sexual experiences, leading them to avoid sexuality because of the discomfort and distress it can cause. A profile analysis study among individuals with a history of CSA found that one group with high attachment anxiety showed no significant relationship with sexual avoidance or compulsivity. However, another group with high attachment anxiety combined with high attachment avoidance reported higher levels of both sexual avoidance and compulsivity (Labadie et al., 2018). These findings highlight the complexity and ambivalence in the sexual behaviors of some survivors, and suggest that sexual avoidance and compulsivity may represent two sides of the same coin, both reflecting efforts to manage vulnerability and regulate attachment-related distress. While these dynamics have been explored in the general and CSA populations, they remain unexamined in women with an ASA history.

Affect dysregulation is characterized by (1) affective instability such as rapid mood swings, difficulties inhibiting anger, violent outbursts or self-destructive behaviors, and (2) deficient affective control such as the inability to easily regulate dysphoric states without externalization or emotional numbing (Bigras & Godbout, 2020; Briere & Runtz, 2002). Research thoroughly supports the association between interpersonal trauma, such as ASA, and higher affect dysregulation (Briere et al., 2010). Studies have also shown that greater affect dysregulation is related to compulsive or “acting out” behaviors, such as sexual compulsivity, in the general population and in women survivors of SA (Briere, 2002; Meyer et al., 2017). For some survivors, compulsive sexual behaviors may provide

temporary relief from overwhelming emotional states by numbing distress through pseudo-intimate interactions (Kalichman & Rompa, 1995). However, no study has examined the associations between affect dysregulation and sexual avoidance in ASA survivors.

A better understanding of the associations between these three components of trauma with sexual avoidance and sexual compulsivity profiles, as well as their evolution over time, could help predict who may suffer from sexual difficulties following ASA. Additionally, this could provide deeper insights into the complex interplay of these sexual behaviors in women survivors of ASA.

Aims and Hypotheses

The first objective (Aim 1) of this study was to examine the profiles of sexual behaviors among women with an ASA history by identifying subgroups of sexual avoidance and compulsivity and examine their associations with PTSD, attachment avoidance, attachment anxiety, and affect dysregulation. We hypothesized that four profiles of sexual behaviors would emerge: (1) A profile characterized by low sexual avoidance and compulsivity, (2) a profile, characterized by high sexual avoidance and low sexual compulsivity, associated with greater PTSD symptoms and attachment avoidance, (3) a profile, characterized by low sexual avoidance and high sexual compulsivity, associated with greater attachment anxiety, attachment avoidance and affect dysregulation, and (4) a profile, characterized by high sexual avoidance and compulsivity,

associated with higher levels of the four predictors, suggesting complex PTSD. The second objective (Aim 2) was to examine the trajectories of sexual avoidance and compulsivity over 12 months in women with an ASA history and examine their associations with the four predictors. We hypothesized that (1) sexual avoidance and compulsivity would diminish over time, (2) PTSD and attachment avoidance would be related to the initial level of sexual avoidance and its trajectory over 12 months, and (3) attachment avoidance, attachment anxiety and affect dysregulation would be related to initial level of sexual compulsivity and its trajectory over 12 months.

Method

Participants

A convenience sample of 316 women who had experienced SA after the age of 16 was recruited through a variety of channels including email lists, social networking sites, and posters or flyers distributed in various community organizations, including SA centers. Sociodemographic information reported at T1 showed that the age of women varied from 19 to 69 years old, with an average of 30.22 (SD = 9.94). Most women described their cultural background as French Canadian (85.8%; n = 271), European, (7.0%; n = 22), First Nations, (1.6%; n = 5), African (1.3%; n = 4), Latin American (0.9%; n = 3), or from another cultural background (American, Middle Eastern, Caribbean, or mixed cultural backgrounds; 3.5%; n = 11). The women had completed between 7 and 30 years of education, with an average of 16.68 years (SD = 3.22). Most women (52.8%; n = 167) were students, 39.2% (n = 124) reported having a full-time or part-time job, 5.4%

(n = 17) were unemployed or on sick leave, 1.3% (n = 4) were homemakers, and 1.3% (n = 4) were retired. As for their income, 65.8% (n = 208) reported their personal annual income was below CAN$29,999, 27.2% ($n$ = 86) between CAN$30,000 and CAN$69,999, 5.7% (n = 18) between CAN$70,000 and CAN$109,999, and 0.9% (n = 3) over CAN$110,000. Regarding sexual orientation, 70.9% (n = 224) identified as heterosexual, 12.7% (n = 40) as bisexual, 11.4% (n = 36) as queer or pansexual, 3.8% (n = 12) as uncertain or confused, 0.6% (n = 2) as asexual, and 0.6% (n = 2) as homosexual (lesbian). In terms of relationship status, 38.0% (n = 120) were single, 29.4% (n = 93) were in a committed relationship and living together, 23.7% (n = 75) were in a romantic relationship but not cohabiting, and 8.9% (n = 28) were married.

Measures

Sexual Assault in Adulthood

At Time 1, to assess SA since age 16, participants completed 11 questions from the Sexual Experiences Survey – Short Form Victimization (Koss et al., 2007). Participants reported if (yes or no) they experienced ten various potential unwanted sexual contact (e.g., “someone fondled, kissed, or rubbed against the private part of my body [lips, breast, crotch, or buttock] or removed some of my clothes without my consent”; “someone had oral sex with me or made me have oral sex with them without my consent”). An extra item allowed participants to report any other unwanted sexual behaviors they deemed relevant. All participants reported at least one unwanted sexual victimization since age 16.

PTSD Symptoms

At Time 1, the severity of PTSD symptoms in the last month was assessed using the *Posttraumatic Diagnostic Scale* for DSM-5, (PDS-5; Foa et al., 2016). This 24-item measure assessed the severity of core symptoms of PTSD (i.e., intrusion, hyperarousal, avoidance, and negative alteration in cognition and mood) based on the diagnostic criteria of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 2013). Participants were asked to rate all items on a five-point Likert scale from 0 (*not at all*) to 4 (*6 times or more per week/severe*) and to refer to the most recent unwanted sexual victimization. A total score was computed and range from 0 to 96 with higher scores indicating higher severity of PTSD symptoms. The PDS-5 demonstrated excellent internal consistency ($\alpha = .95$), test-retest reliability ($r = .90$), and convergent validity with other PTSD scales ($r = .85$ to .90; Foa et al., 2016). In this sample, Cronbach's alpha was .95.

Attachment Avoidance and Anxiety

At Time 1, attachment representations were assessed using the 12-item *Experiences in Close Relationships Scale – Short Form* (ECR-S; Lafontaine et al., 2016). The attachment avoidance subscale includes six items to measure the extent to which people are uncomfortable being close to their partner in general, whereas the attachment anxiety subscale includes six items to assess the extent to which people worry about the availability and responsiveness of their partner in general. Participants reported their general feeling regarding romantic relationships on a seven-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were averaged for each

subscale and range from 1 to 7 with higher scores indicating greater attachment anxiety or avoidance. Both subscales showed good internal consistency (α = .74 to .87) and test-retest reliability over a one-year period (*r* = .53 to .82; Lafontaine et al., 2016). In this sample, Cronbach's alphas were .90 for both subscales.

Affect Dysregulation

At Time 1, affect dysregulation was assessed using the affect dysregulation subscale of the *Inventory of Altered Self-Capacities* (IASC; Bigras & Godbout, 2020; Briere & Runtz, 2002). This subscale includes 9 items that assess (1) problems in affect regulation and control in the last six months including affective instability (i.e., rapid emotional changes) such as mood swings and difficulties inhibiting anger, and (2) deficient affective skills (i.e., deficits in affect control that underlie some affect dysregulation) in the last six months such as the inability to easily regulate dysphoric states without externalization. Items were rated on a five-point Likert-type scale ranging from 1 (*never happened in the last six month*) to 5 (*happened very often in the last six month*). A total score was computed and range from 9 to 45 with higher scores indicating higher affect dysregulation. The affect dysregulation subscale demonstrated adequate internal consistency (α = .92 to .95) and convergent validity with dysfunctional sexual behavior and depression (*r* = .37 to .74) in different populations (Briere & Runtz, 2002). In this sample, Cronbach's alpha was .93 for the affect dysregulation subscale.

Sexual Avoidance

At each time point, the tendency to avoid sexual activity was assessed using the sexual avoidance subscale of the *Sexual Aversion Scale* (Katz et al., 1989). The 10 items were rated on a four-point Likert-type scale ranging from 1 (*not at all like me*) to 4 (*very much like me*). A total score was computed and ranged from 10 to 40 with higher scores indicating greater sexual avoidance. The sexual avoidance subscale demonstrated good internal consistency (α = .87; La Rocque & Cioe, 2011) and test-retest reliability over a 1-month period (*r* = .90; Katz et al., 1989). In this sample, Cronbach's alpha was .92 at Time 1, .93 at Time 2 to Time 4.

Sexual Compulsivity

At each time point (Time 1 to Time 4), compulsive sexual behaviors including difficulties managing sexual thoughts, intrusive preoccupations or behaviors, and their effects on daily functioning was assessed using the *Sexual Compulsivity Scale* (SCS; Kalichman et al., 1994). The 10 items were rated on a four-point Likert-type scale ranging from 1 (*not at all like me*) to 4 (*very much like me*). A total score was computed and range from 10 to 40 with higher scores indicating greater sexual compulsivity. The SCS had demonstrated good internal consistency (α = .87 to .92; Kalichman & Rompa, 1995). In this sample, Cronbach's alpha was .88 at Time 1, .86 at Time 2, .92 at Time 3, and .90 at Time 4.

Control Variables

Level of education was assessed with one open-ended question "How many years of education have you completed (from the first year of primary school)". Women's age was assessed with one open-ended question "What is your age". Relationship status was assessed with one question: "What is your actual relationship status" and response options were "married", "in a relationship and cohabiting with a partner", "in a relationship with a partner (without being married or cohabiting) or "single, not engaged in a relationship". For the analyses, relationship status was coded as 0 = *single* and 1 = *in a relationship*.

CSA, which was defined as any unwanted sexual act before 16 years old or any sexual act between a child under 16 years old and a person five or more years older or in a position of authority, was assessed using 13 items from the revised version of the *Early Sexual Experience Revised questionnaire* (Vaillancourt-Morel et al., 2015). The 13 items were rated on a five-point Likert-type scale ranging from 0 (*never*) to 4 (*10 times or more*). Women who responded affirmatively to one of those items were classified as having experienced CSA on a binary variable (0 = *no CSA*; 1 = *CSA*).

Procedure

The present study was conducted as part of a larger longitudinal research project. The study was advertised as a self-report survey focusing on unwanted sexual experiences. Interested women sent their contact information via email and were contacted by a research assistant for a brief telephone screening interview to determine their eligibility to

participate. To be eligible, participants had to report their sex (assigned at birth) was female, having experienced an unwanted sexual experience after the age of 16, and be at least 18 years old. Participants were not eligible if they were unable to read French or did not want to answer questions about their unwanted sexual experience. All participants provided informed consent and ethical approval was obtained from the Institutional Review Boards of [blinded for review].

Out of the 415 women who contacted the research team, 59 (14.2%) could not be reached or declined to participate after receiving more information about the study via email, and six (1.4%) were not eligible. A link to the online Time 1 survey hosted on the Qualtrics platform was therefore sent to 350 women. Among them, 23 have not completed any questionnaires and 11 did not complete the sexual avoidance and the compulsivity scales. Thus, the final sample for this study included 316 women. At the end of each time point (Time 1, 2, 3, and 4), women were asked if they would agree to be contacted via their email addresses to complete another time point three or six months later. From the 316 participants at Time 1, 307 women agreed to be contacted at Time 2 and 265 completed the Time 2 survey for a retention rate of 83.9%. Of these, 250 women accepted to be contacted at Time 3 and 229 completed the Time 3 survey for a retention rate of 72.5%. Of these, 204 women accepted to be contacted at Time 4 and 169 completed the Time 4 survey for a retention rate of 53.5%.

Data Analysis

Descriptive statistics were computed using SPSS Version 28.0. All other analyses were performed using Mplus version 8.9 using the robust maximum likelihood estimator (MLR; Muthén & Muthén, 1998-2015). Missing data (ranging from 0.0% for sexual avoidance and compulsivity at Time 1 to 47.2% for sexual avoidance and compulsivity at Time 4, see Table 1 for sample size for each variable) were treated using the full information maximum likelihood (FIML) method.

For aim 1, latent profile analyses (LPA), which are an extension of latent class analyses for continuous observed variables, was conducted to identify naturally occurring homogenous latent profiles of women based on sexual avoidance and sexual compulsivity total scores at Time 1. One to eight solutions were extracted with 1000 random start values for each model, with the 250 bests retained for the final optimization. The best-fitting model was determined by a combination of fit indices, parsimony, size of profiles, and interpretability (Nylund et al., 2007). Regarding fit indices, the smallest Log-Likelihood (LL), the smallest Akaike Information Criterion (AIC), the smallest Bayesian Information Criterion (BIC), a significant Lo-Mendell-Rubin likelihood ratio test (VLRT), and a significant bootstrap likelihood ratio tests (BLRT) point toward the best-fitting model (Nylund et al., 2007).

Table 1

Descriptive Statistics of Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. PTSD symptoms	-	.30***	.18**	.53***	.44***	.47***	.45***	.50***	.12*	.17**	.15*	.05	.05	.13*	-.14*	-.20***
2. Attachment avoidance		-	.14*	.21***	.32***	.34***	.28***	.27***	.15**	.27***	.23***	.12	.10	.04	.01	-.29***
3. Attachment anxiety			-	.43***	.10	.20**	.17*	.20*	.25***	.18**	.08	.11	-.01	.14*	-.02	-.02
4. Affect dysregulation				-	.18**	.31***	.26***	.22**	.32***	.33***	.29***	.29***	-.06	.19**	-.16**	-.02
5. Sexual avoidance T1					-	.77***	.81***	.73***	-.07	.03	-.002	-.11	.17**	.13*	-.04	-.35***
6. Sexual avoidance T2						-	.84***	.78***	.01	.15*	.07	-.03	.16*	.13*	-.02	-.29***
7. Sexual avoidance T3							-	.79***	-.03	.07	.08	-.05	.18**	.15*	-.07	-.28***
8. Sexual avoidance T4								-	-.04	.01	-.06	-.05	.16*	.23**	-.02	-.26***
9. Sexual compulsivity T1									-	.71***	.59***	.60***	-.08	.07	-.12*	-.13*
10. Sexual compulsivity T2										-	.66***	.74***	-.08	.03	-.13*	-.14*
11. Sexual compulsivity T3											-	.71***	-.04	.04	-.12	-.22***
12. Sexual compulsivity T4												-	-.14	.04	-.16*	-.08
13. Age													-	.24***	.22***	-.02
14. CSA														-	-.01	-.08
15. Level of education															-	.07
16. Relationship status																-
N	313	315	315	315	316	263	229	167	316	263	228	167	316	315	314	316
M	2.34	3.16	4.37	2.87	17.61	17.22	17.22	16.81	16.30	14.62	14.48	14.47	3.22	0.64	16.68	0.62
(*SD*)	(17.85)	(1.50)	(1.66)	(9.03)	(7.82)	(8.11)	(8.35)	(7.99)	(6.34)	(5.35)	(6.22)	(5.80)	(9.94)	(.48)	(3.22)	(.49)
Range	0-77	1-7	1-7	9-45	10-40	10-40	10-40	10-40	10-39	10-40	10-38	10-40	19-69	0-1	7-30	0-1

Note. PTSD = post-traumatic stress disorder. T1 = Time 1. T2 = Time 2. T3 = Time 3. T4 = Time 4. CSA = childhood sexual abuse. * $p < .05$. ** $p < .01$. *** $p < .001$

A non- significant VLRT and non- significant BLRT indicate that, as compared to a more parsimonious model with one less profile, improvements in model fit obtained by adding another profile should be rejected. The precision of individual classification was assessed using an entropy value ranging between 0 and 1, with a high entropy corresponding to a clear profile separation. Because individuals may belong to more than one latent profile, the quality of profile allocation was examined through the average latent profile probabilities, with values above .80 indicating satisfactory classification. Once the optimal number of profiles was identified, the four predictors were used simultaneously as predictors of the obtained profiles using multivariate multinomial logistic analyses using the automated three-step method implemented in Mplus. This model included education, age, relationship status, and CSA as control variables. This method estimates a second model without affecting the latent profile membership of the previous model and take into account the inaccuracies in profile separation.

For aim 2, first, an unconditional latent growth curve model (LGCM) including fixed- and random estimates of intercepts, linear slopes, and quadratic slopes for sexual avoidance and compulsivity was performed, and the best-fitting model was selected. Within the structural equation model framework, the LGCM with four time points may include three growth factors, the intercept (i.e., level at the beginning of the study), the linear slope (i.e., linear trajectory from Time 1 to Time 4), and the quadratic slope (i.e., acceleration or deceleration in the linear slope from Time 1 to Time 4). Overall model fit was tested by considering several fit indices: non-significant chi-square value, a

Comparative Fit Index (CFI) of .95 or higher, a root mean square error of approximation (RMSEA) below .06, and a standardized root-mean-square residual (SRMR) below .08 (Kline, 2011). Second, a conditional LGCM was computed to examine the associations between each predictor and sexual avoidance and compulsivity over time including education, age, relationship status, and CSA as control variables. This LGCM included all predictors simultaneously as time-invariant covariates with fixed effects to predict women's intercepts, linear slope variances, and quadratic slope variances when present.

Results

Descriptive Statistics

Preliminary correlation analyses were conducted to examine the associations between sociodemographic variables and sexual outcomes at Time 1. Sexual avoidance at Time 1 was significantly correlated with age, CSA, and relationship status. Sexual compulsivity was significantly correlated with level of education, and relationship status. Therefore, age, CSA, level of education, and relationship status were included as covariates in all models. Sample size, means, standard deviations, and range for all four predictors (i.e., PTSD symptoms, attachment avoidance, attachment anxiety, and affect dysregulation), the two sexual outcomes (i.e., sexual avoidance and sexual compulsivity) at Time 1, 2, 3, and 4, and the four control variables (i.e., age, CSA, level of education, relationship status) are presented in Table 1. Correlations between all these variables are also shown in Table 1.

Identification and Description of Latent Profiles

The fit indices for the one- to eight-profile solutions in our sample are provided in Table S1 of the Supplemental Materials. An examination of fit indices indicated that the best fitting model was the four-profile solution which was also theoretically coherent. In comparison to the one-, two-, and three-profile solutions, the four-profile model showed lower LL, AIC, and BIC values, as well as a significant VLRT and BLRT *p*-values. In all solutions with more than four profiles, the VLR *p*-values were nonsignificant and in solutions with six profiles or more the BLRT *p*-values were nonsignificant. Moreover, the five-, seven-, and eight-profile solutions included profiles that represented a small proportion of the sample (i.e., 3 to 4%). Thus, the four-profile solution was selected as the best fitting and more parsimonious solution. The value of entropy for the four-profile solution was .89 and the average latent profile probabilities for the most likely latent profile membership were satisfactory, ranging from .88 to .96.

According to the most likely latent profile membership, the first profile, labeled as the *secure sexuality* profile, included 64.2% ($n = 203$) of the sample and was characterized by low levels of sexual avoidance ($M = 14.08$, $SE = 0.37$) and compulsivity ($M = 14.07$, $SE = 0.33$). The second profile, labeled as the *avoidant sexuality* profile, defined 17.4% ($n = 55$) of the sample and was represented by high levels of sexual avoidance ($M = 29.81$, $SE = 1.07$) and low levels of sexual compulsivity ($M = 12.77$, $SE = 0.50$). The third profile, labeled as the *compulsive sexuality* profile, comprised 13.6% ($n = 43$) of the sample and was characterized by high levels of sexual compulsivity ($M = 28.20$,

SE = 1.15) and low levels of sexual avoidance (*M* = 13.99, *SE* = 0.64). The fourth profile, designated as the *disorganised sexuality* profile, included 4.7% (*n* = 15) of the sample and was represented by high scores on sexual avoidance (*M* = 30.27, *SE* = 2.36) and compulsivity (*M* = 24.07, *SE* = 1.54). Comparatively, sexual avoidance was lowest in the compulsive profile (*M* = 13.99, *SE* = 0.64, $p < .001$) and highest in the disorganised profile (*M* = 30.27, *SE* = 2.36, $p < .001$), whereas sexual compulsivity was lowest in the avoidant profile (*M* = 12.77, *SE* = 0.50, $p < .001$) and highest in the compulsive profile (*M* = 28.20, *SE* = 1.15, $p < .001$).

Predictors of Latent Profiles Membership

Results of the multivariate multinomial logistic regression model examining the associations between the predictors (i.e., PTSD symptoms, attachment avoidance, attachment anxiety, and affect dysregulation) and latent profiles membership including age, level of education, CSA, and relationship status as control variables are reported in Table 2.

Table 2

Multivariate Multinomial Logistic Regression Model for the Associations Between Predictors and Latent Profiles

	Avoidant sexuality vs Secure sexuality			Compulsive sexuality vs Secure sexuality			Disorganized sexuality vs Secure sexuality		
Predictors	Est. (*SE*)	*p*	OR [95% CI]	Est. (*SE*)	*p*	OR [95% CI]	Est. (*SE*)	*p*	OR [95% CI]
PTSD symptoms	**0.07 (0.02)**	**.001**	**1.07 [1.03, 1.11]**	0.01 (0.02)	.396	1.01 [0.98, 1.05]	**0.08 (0.04)**	**.034**	**1.08 [1.01, 1.16]**
Attachment avoidance	0.11 (0.14)	.458	1.11 [0.84, 1.47]	0.13 (0.16)	.419	1.14 [0.83, 1.57]	0.58 (0.43)	.179	1.79 [0.77, 4.16]
Attachment anxiety	-0.03 (0.16)	.844	0.97 [0.71, 1.33]	0.24 (0.19)	.201	1.27 [0.88, 1.85]	**0.99 (0.46)**	**.033**	**2.68 [1.09, 6.60]**
Affect dysregulation	-0.02 (0.04)	.595	0.98 [0.91, 1.05]	**0.06 (0.03)**	**.036**	**1.06 [1.00, 1.13]**	-0.02 (0.06)	.760	0.98 [0.88, 1.10]
Age	**0.05 (0.02)**	**.027**	**1.05 [1.01, 1.09]**	0.001 (0.03)	.964	1.00 [0.95, 1.06]	-0.03 (0.04)	.523	0.97 [0.90, 1.06]
CSA	-0.21 (0.51)	.681	0.81 [0.30, 2.21]	-0.22 (0.43)	.608	0.80 [0.34, 1.87]	0.83 (0.91)	.365	2.29 [0.38, 13.71]
Level of education	-0.04 (0.08)	.602	0.96 [0.83, 1.12]	-0.06 (0.06)	.324	0.94 [0.83, 1.06]	0.14 (0.12)	.222	1.16 [0.92, 1.46]
Relationship status	-0.87 (0.45)	.054	0.42 [0.18, 1.01]	-0.65 (0.44)	.134	0.52 [0.22, 1.22]	**-3.69 (1.40)**	**.008**	**0.03 [0.002, 0.39]**
	Avoidant sexuality vs Compulsive sexuality			Avoidant sexuality vs Disorganised sexuality			Compulsive sexuality vs Disorganized sexuality		
	Est. (*SE*)	*p*	OR [95% CI]	Est. (*SE*)	*p*	OR [95% CI]	Est. (*SE*)	*p*	OR [95% CI]
PTSD symptoms	**0.05 (0.02)**	**.010**	**1.06 [1.01, 1.10]**	-0.01 (0.04)	.849	0.99 [0.93, 1.07]	-0.06 (0.04)	.083	0.94 [0.88, 1.01]
Attachment avoidance	-0.02 (0.18)	.895	0.98 [0.68, 1.39]	-0.47 (0.43)	.273	0.62 [0.27, 1.45]	-0.45 (0.45)	.312	0.64 [0.27, 1.53]
Attachment anxiety	-0.27 (0.20)	.176	0.76 [0.51, 1.13]	**-1.02 (0.46)**	**.027**	**0.36 [0.15, 0.89]**	-0.74 (0.48)	.120	0.48 [0.19, 1.22]
Affect dysregulation	**-0.08 (0.04)**	**.038**	**0.92 [0.85, 1.00]**	-0.003 (0.06)	.963	1.00 [0.89, 1.12]	0.08 (0.05)	.150	1.08 [0.97, 1.20]
Age	0.05 (0.03)	.088	1.05 [0.99, 1.10]	0.07 (0.04)	.069	1.08 [0.99, 1.16]	0.03 (0.04)	.517	1.03 [0.95, 1.12]
CSA	0.01 (0.56)	.984	1.01 [0.34, 3.04]	-1.04 (1.00)	.299	0.35 [0.05, 2.51]	-1.05 (0.97]	.277	0.35 [0.05, 2.32]
Level of education	0.02 (0.08)	.780	1.02 [0.88, 1.19]	-0.18 (0.13)	.144	0.83 [0.65,1.06]	-0.21 (0.12)	.090	0.81 [0.64, 1.03]
Relationship status	-0.21 (0.51)	.676	0.81 [0.30, 2.20]	**2.83 (1.38)**	**.041**	**16.87 [1.12, 253.26]**	**3.04 (1.42)**	**.032**	**20.90 [1.30, 336.15]**

Note. PTSD = post-traumatic stress disorder. CSA = childhood sexual abuse.

Results showed that, relative to the secure sexuality profile, greater PTSD symptoms were related to higher odds of being in the avoidant and disorganized sexuality profiles. Greater PTSD symptoms were also related to higher odds of being in the avoidant sexuality profile compared to the compulsive sexuality profile. Greater attachment anxiety was related to higher odds of being in the disorganized sexuality profile compared to the secure and the avoidant sexuality profiles. Greater affect dysregulation was related to higher odds of being in the compulsive sexuality profile compared to the secure and the avoidant sexuality profiles. Attachment avoidance was not significantly related to profile membership.

Unconditional Latent Growth Curve Model

Unconditional dyadic LGCM fixed and random estimates of intercept, slope, and quadratic estimates of sexual avoidance and compulsivity are presented in Table S2 of the Supplemental Materials. The model including the quadratic function provided good fit indices: $\chi 2(5) = 2.31$, $p = .805$; CFI = 1.00; RMSEA = 0.00 [CI = 0.00, 0.05]; SRMR = 0.01. Sexual avoidance mean score started at 17.60 and remained stable over time as neither the slope nor the quadratic functions were significant. Sexual compulsivity mean score started at 16.26 and significantly declined of 5.76 over the 12-month follow-up (linear slope) with a deceleration of 3.95 over time (quadratic slope). The trajectories of sexual avoidance and compulsivity over the 12-month follow-up are depicted in Figure S1 of the Supplemental Materials. Random estimates of the intercepts were significant, indicating variability in the initial levels. However, no random estimates of

the slope and quadratic functions were significant, indicating that all women reported a similar pattern of change over time.

Conditional Latent Growth Curve Model

Next, PTSD symptoms, attachment avoidance, attachment anxiety, and affect dysregulation scales were included as predictors of sexual avoidance and compulsivity over time including age, CSA, level of education, and relationship as control variables. This model provided good fit indices: $\chi 2(32) = 35.30$, $p = .315$; CFI = 1.00; RMSEA = 0.02 [90%CI = 0.00, 0.05]; SRMR = 0.03. Results presented in Table 3, showed that PTSD symptoms and attachment avoidance were associated with higher initial levels (i.e., intercept) of sexual avoidance whereas no predictors were significantly related to the slope and quadratic function of sexual avoidance. Attachment anxiety and affect dysregulation were associated with higher initial levels of sexual compulsivity. Moreover, attachment anxiety was associated with a decrease over time in sexual compulsivity (i.e., slope), while no predictors were significantly related to the quadratic function of sexual compulsivity.

Table 3

Conditional Latent Growth Curve Model for the Associations Between Predictors and Sexual Avoidance and Compulsivity

	Sexual avoidance								
	Intercept			Slope			Quadratic		
Predictors	b(SE)	*p*	β	b(SE)	*p*	β	b(SE)	*p*	β
PTSD symptoms	**0.16 (0.03)**	**< .001**	**.41**	-0.01 (0.11)	.942	-.05	-0.003 (0.11)	.977	-.02
Attachment avoidance	**0.70 (0.27)**	**.010**	**.15**	0.22 (0.90)	.805	.11	-0.30 (0.94)	.752	-.15
Attachment anxiety	0.17 (0.26)	.508	.04	0.63 (0.77)	.414	.33	-0.52 (0.77)	.499	-.29
Affect dysregulation	-0.04 (0.06)	.533	-.05	0.19 (0.18)	.300	.53	-0.15 (0.19)	.416	-.46
Age	**0.09 (0.04)**	**.036**	**.13**	0.10 (0.14)	.458	.32	-0.15 (0.14)	.294	-.48
CSA	0.55 (0.82)	.505	.04	-0.78 (2.05)	.704	-.12	1.83 (2.18)	.401	.30
Level of education	0.01 (0.12)	.916	.01	-0.12 (0.39)	.748	-.13	0.27 (0.35)	.446	.29
Relationship status	**-3.59 (0.82)**	**< .001**	**-.25**	4.63 (2.68)	.084	.71	-3.75 (2.68)	.162	-.61
	Sexual compulsivity								
	Intercept			Slope			Quadratic		
	b(SE)	*p*	β	b(SE)	*p*	β	b(SE)	*p*	β
PTSD symptoms	-0.04 (0.02)	.075	-.15	0.07 (0.08)	.415	.23	-0.04 (0.07)	.521	-.26
Attachment avoidance	0.37 (0.25)	.137	.11	1.25 (0.90)	.165	.37	-1.45 (0.84)	.083	-.74
Attachment anxiety	**0.49 (0.22)**	**.028**	**.16**	**-1.80 (0.87)**	**.038**	**-.59**	1.11 (0.77)	.152	.62
Affect dysregulation	**0.20 (0.06)**	**< .001**	**.35**	-0.003 (0.18)	.986	-.01	0.002 (0.16)	.989	.01
Age	-0.03 (0.03)	.290	-.06	0.03 (0.11)	.828	.05	-0.06 (0.10)	.556	-.21
CSA	0.15 (0.73)	.837	.01	-1.29 (2.52)	.608	-.12	1.49 (2.27)	.512	.24
Level of education	-0.14 (0.09)	.120	-.09	0.02 (0.29)	.938	.01	-0.01 (0.25)	.966	-.01
Relationship status	-1.41 (0.74)	.057	-.13	1.08 (2.44)	.658	.10	-0.94 (2.20)	.670	-.15

Note. PTSD = post-traumatic stress disorder. CSA = childhood sexual abuse.

Discussion

The aim of the current study was to examine profiles and trajectories of sexual avoidance and sexual compulsivity among women with an ASA history and examined their predictors (i.e., PTSD, attachment avoidance, attachment anxiety, and affect dysregulation). Our findings identified four distinct sexual behaviors profiles, based on a bidimensional model of sexual avoidance and sexual compulsivity. Women in the avoidant sexuality profiles had higher PTSD symptoms, those in the compulsive sexuality profile had higher affect dysregulation, and those in the disorganized sexuality profile had higher PTSD symptoms and higher attachment anxiety. PTSD and attachment avoidance were associated with higher initial levels of sexual avoidance, while attachment anxiety and affect dysregulation were associated with higher initial levels of sexual compulsivity. Sexual avoidance showed no significant change over 12 months, but sexual compulsivity decreased slightly in the first six months and then stabilized. Lastly, greater attachment anxiety was linked to a sharper decline in sexual compulsivity over time. Overall, our results suggest that women survivors of ASA are a heterogeneous group manifesting varying levels of sexual avoidance and sexual compulsivity, and reflect the complex associations between PTSD symptoms, attachment styles, affect dysregulation, and post-trauma sexuality.

Sexual Responses Profiles

Our analysis revealed four distinct profiles, with a predominant *secure sexuality* profile representing nearly 65% of women and characterized by lower sexual avoidance

and sexual compulsivity. The second profile, *avoidant sexuality* was characterized by higher sexual avoidance and lower sexual compulsivity and included around 17% of women. The third profile, *compulsive sexuality* was characterized by lower sexual avoidance and higher sexual compulsivity and includes around 14% of women. Finally, the fourth profile, the *disorganized sexuality* profile characterized by both higher sexual avoidance and sexual compulsivity, includes around 5% of women. Thus, 65% of women with a history of ASA reported lower levels of sexual avoidance and compulsivity, suggesting that many may show sexual resilience post-ASA. This finding appears to align with previous studies indicating that some survivors show few or no evident negative sexual outcomes at certain life stages (Labadie et al., 2018; Noll et al., 2003). However, this interpretation warrants caution as the time elapsed between ASA and the study was not taken into consideration. Consequently, the 65% may include a proportion of survivors for whom a considerable period since the last ASA had passed, allowing them to process the experience and develop adaptive strategies related to sexuality and intimacy. Nevertheless, the remaining 35% of women exhibited sexual responses indicative of significant impacts on their sexual realm, highlighting that a considerable proportion still faces notable challenges. Despite their differences, both behaviors suggest underlying difficulties with intimacy, vulnerability and affect regulation and serve as strategies to cope and manage these challenges.

Our result also emphasizes the heterogeneity of sexual behaviors in women survivors of ASA with some reporting sexual compulsivity, others avoidance, a mix of both, or none.

Interestingly, almost as many women survivors of ASA exhibit sexual compulsivity as sexual avoidance. This adds to previous research highlighting the presence of sexual compulsivity in women survivors of CSA (Meyer et al., 2017; Vaillancourt-Morel et al., 2015), and not only sexual avoidance. Notably, our results also reveal a complex pattern of behaviors, including both sexual avoidance and sexual compulsivity, which have been identified in previous CSA research (Noll et al., 2003; Vaillancourt-Morel et al., 2016), but have not been previously observed ASA women survivors. This result highlights the diverse ways women cope with ASA and emphasizes the need for a deeper understanding of post-ASA sexual behaviors.

Predictors of Sexual Responses Profiles

First, results showed that greater PTSD symptoms were related to the *avoidant sexuality* and the *disorganized sexuality* profiles, which aligns with past studies linking PTSD symptoms to both sexual avoidance and compulsivity (Fontanesi et al., 2021). Given the sexual nature of the trauma, sexual avoidance could be understood as behavioral avoidance of elements reminiscent of the events, and in this way, as a symptom of PTSD (WHO, 2024). This can be further explained by research showing that sexual activity itself can be highly triggering for individuals with PTSD, often evoking intrusiveness, flashbacks, and hypervigilance, which reinforce avoidance as a coping mechanism (Gewirtz-Meydan & Lassri, 2023). On the other end, sexual compulsivity, present in the disorganized profile, may also serve as a way to regulate PTSD symptoms, as sexual activity can trigger the release of oxytocin, providing a pseudo-feeling of connection and

closeness that temporarily alleviates distress (Gewirtz-Meydan & Godbout, 2023). However, while examining this contradictory disorganized sexuality profile (higher sexual avoidance and compulsivity), it is worth considering whether these PTSD symptoms are triggered by the sexual act itself or by the intimacy and vulnerability tied to the assault. This contradiction suggests that, while engaging in compulsive sexual behavior, women would avoid the intimate aspects of sexuality – rather than the sexual act – and use it compulsively without true emotional engagement or intimacy (Canan & Levand, 2019).

Second, higher attachment anxiety was related to the *disorganized sexuality* profile. Attachment anxiety, or negative self representation (i.e., perception of being diminished, defeated or worthless; Mikulincer & Shaver, 2003), is known to be associated with higher sexual compulsivity (Weinstein et al., 2015). Individuals with anxious attachment tend to rely on frequent reassurance to alleviate fears of abandonment and affirm relational security. In this context, sexual compulsivity may serve as a maladaptive strategy to seek reassurance and foster emotional closeness. Yet it often fails to provide enduring feelings of security, instead perpetuating an unfulfilled need for validation (Gewirtz-Meydan & Godbout, 2023). Furthermore, this preoccupation with reassurance may also explain the avoidance behaviors observed in the disorganized sexuality profile. For individuals with anxious attachment, sexual activity may be perceived as a "test" of their partner's affection and commitment, which can provoke feelings of vulnerability and fear of rejection. These concerns may inhibit the ability to relax and fully engage in sexual intimacy, as the act becomes emotionally charged and associated with heightened anxiety rather than

enjoyment. Consequently, avoidance behaviors may emerge as a means of coping with these distressing dynamics (Gewirtz-Meydan & Ofir-Lavee, 2020).

Lastly, greater affect dysregulation was associated to the compulsive sexuality profile, consistent with past studies showing its connection to compulsive or acting out behaviors (Briere, 2002). Individuals reporting greater affect dysregulation may turn to sexual behaviors to manage difficult-to-identify and distressing emotions, as these behaviors may temporarily dull overwhelming emotions or traumatic memories by redirecting focus to a physical and immediate experience. In turn, using sexuality to deal with emotions may lead individuals to feel more distressing emotions (e.g., powerlessness, shame) reinforcing the cycle of engaging in sexual behaviors to deal with these emotions (Rahm-Knigge et al., 2023). For ASA survivors, sexuality may be used compulsively as a way of regulating trauma-related feelings such as a powerlessness over their body and sexuality (Kalichman & Rompa, 1995). In this context, sexual compulsivity could be interpreted as attempts to regain a sense of control over one's body and sex life (Fontanesi et al., 2021).

Sexual Responses Trajectories and Predictors

Even if no validated cutoff exists for our sexual behavior measures, women in our sample displayed higher scores on sexual avoidance and sexual compulsivity compared to women in the general population (Vaillancourt-Morel et al., 2016) and even women reporting CSA (Labadie et al., 2018). Sexual avoidance did not show a significant change over 12 months. Avoidance strategies tend to reinforce the status quo, which may explain

why sexual avoidance is stable over a short period of time (MacIntosh et al., 2020). However, sexual compulsivity slightly decreased during the first six months and then stabilized. Sexual compulsivity can significantly disrupt daily functioning, including social relationships and professional responsibilities (Kalichman & Rompa, 1995). These disruptions, together with stronger social sanctioning and stigma toward compulsive sexual behavior in women (Ralston, 2021), may accelerate the extinction of compulsive behaviors and motivate individuals to adopt alternative coping strategies. By contrast, even when sexual avoidance has substantial relational costs, it is often less visible and faces less social censure in women than compulsive behavior; this relative social tolerance, combined with the short-term anxiety reduction that avoidance provides, can reduce external pressure to change and help maintain avoidance behaviors over time. Our results further show that the three components of complex PTSD (i.e., PTSD symptoms, negative self and other representations, and affect dysregulation) may help understand what factors are related to these trajectories over time.

First, greater PTSD symptoms and attachment avoidance were related to higher initial levels of sexual avoidance. As noted, and consistent with past studies (Fontanesi et al., 2021), higher sexual avoidance in presence of PTSD symptoms may reflects behavioral avoidance of trauma-related elements, in this case, sexuality or intimacy (WHO, 2024). The link between attachment avoidance and sexual avoidance is also supported by past studies, showing both a correlation with sexual avoidance (Brassard et al., 2007) and with lower sexual intercourse frequency (Stefanou & McCabe, 2012). Greater attachment

avoidance, or more negative perceptions of others, increases distrust of romantic partners and a desire for independence and emotional distance (Mikulincer & Shaver, 2003). Women survivors with these representations may perceive sexuality as threatening and implying closeness, leading them to avoid it.

Second, greater attachment anxiety and affect dysregulation were associated with higher initial levels of sexual compulsivity. As noted, higher attachment anxiety may support compulsive sexual behaviors as a way to seek closeness and avoid abandonment, temporarily alleviating attachment insecurities (Schachner & Shaver, 2004). Additionally, compulsive sexual behaviors may represent a coping mechanism for women with greater affect dysregulation, helping them manage the overwhelming emotions resulting from the ASA. It may also serve as an attempt to regain a sense of control over their sex lives and bodies (Fontanesi et al., 2021). Lastly, higher attachment anxiety was related to a steeper decline in sexual compulsivity over time. However, this result may be explained by the fact that participants with greater attachment anxiety reported higher sexual compulsivity at the beginning of the study, allowing for greater improvement over time.

Clinical Implications

Our results highlight that survivors' sexual outcomes are diverse and associated with predictors such as PTSD symptoms, attachment avoidance, attachment anxiety and affect dysregulation. Practitioners should assess for a more complex interplay of sexual behaviors, including a disorganized profile, in women survivors of ASA and not only

expect sexual avoidance. Notably, sexual avoidance and compulsivity can be understood as adaptive attempts to navigate trauma-related distress. Our results may help reduce the stigma surrounding sexual compulsivity in this population, who are often judged harshly for such behaviors (e.g., slut-shaming). Clinicians should be mindful of these biases and understand compulsive sexual behavior in survivors as an often maladaptive yet understandable attempt to cope with ASA-related distress. These behaviors should instead be understood within the broader context of ASA-related factors. Results suggest that women survivors of ASA with PTSD and attachment avoidance show higher sexual avoidance, which may persist over time, increasing their risk for long-term sexual difficulties and in need of professional support. On a positive note, 65% of women in this study reported low levels of sexual avoidance and compulsivity. Thus, clinicians should avoid assuming that all ASA survivors will experience sexual avoidance or sexual compulsivity.

Limitations and Future Research

The results should be considered in light of this study's limitations. The generalizability of the findings is limited by the use of a convenience sample with little cultural diversity and self-identified ASA, which may not represent the population of survivors or the range of their experiences. Only women assigned at birth were included in this study, excluding transgender women. Future studies should recruit all gender and examine potential gender differences. Moreover, the number of participants who dropped out between time point is significant and may be explained by the method used to respect

consent at each time point. Yet, even if we used an appropriate strategy do deal with missing data, it may affect the representativeness of our sample at following time points. Reliance on self-report measures may have introduced biases related to social desirability or recall accuracy. Even if we used a longitudinal design, it remains correlational. No causal inferences can be made from our results, and future research is needed to determine the directionality of the associations between sexual avoidance and sexual compulsivity with PTSD, attachment anxiety, attachment avoidance, and affect dysregulation. Our findings highlight the need to examine compulsive sexual behavior in women, as they raise questions about gender-based theories that frame women's responses as predominantly internalizing (i.e., avoidance). Given the association between relationship status and the disorganized profile, future studies should also explore how the profiles identified in this study relate to interpersonal functioning.

Conclusion

Our findings highlight the complexity of sexual behaviors among women survivors of ASA. Most survivors tend to demonstrate resilience regarding sexual behaviors, as they reported lower levels of sexual avoidance and sexual compulsivity. However, the study identifies three other sexual behaviors profiles, with women in the avoidant sexuality profiles reporting higher PTSD symptoms, those in the compulsive sexuality profile reporting higher affect dysregulation, and those in the disorganized sexuality profile reporting higher PTSD symptoms and attachment anxiety. PTSD and attachment avoidance were associated with higher initial levels of sexual avoidance, while attachment

anxiety and affect dysregulation were associated with higher initial levels of sexual compulsivity. Sexual avoidance was stable over 12 months, while sexual compulsivity showed a slight decrease in the initial months, correlating with higher attachment anxiety. These findings highlight the diverse sexual responses to ASA and the need for interventions that address the complexity of post-trauma sexual experiences. The alternation observed between sexual avoidance and compulsivity challenges traditional gendered expectations and underscores the importance of non-judgmental, context-sensitive clinical interventions.

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Supplemental Materials

Table S1

Fit Indices for Latent Profile Analysis

	Proportion of sample size in profiles	LL	AIC	BIC	VLRT *p*-value	BLRT *p*-value	Entropy
1 profile	1.00	-2129.42	4266.84	4281.86	NA	NA	NA
2 profiles	.78/.22	-2072.61	4159.22	4185.51	$p < .001$	$p < .001$	.89
3 profiles	.66/.21/.13	-2034.20	4088.41	4125.97	$p = .032$	$p < .001$	.87
4 profiles	**.14/.05/.64/.17**	**-2015.10**	**4056.20**	**4105.02**	***p* = .027**	***p* < .001**	**.89**
5 profiles	.56/.08/.15/.04/.17	-1995.58	4023.16	4083.26	$p = .053$	$p < .001$	.89
6 profiles	.49/.15/.07/.15/.05/.09	-1984.05	4006.09	4077.45	$p = .155$	$p < .001$	.87
7 profiles	.12/.05/.03/.07/.09/.46/.18	-1976.63	3997.26	4079.89	$p = .367$	$p = .008$	.88
8 profiles	.40/.12/.03/.17/.05/.07/.07/.10	-1968.91	3987.81	4081.71	$p = .741$	$p = .004$	.87

Note. The row that is **bolded** represent the best solution. Profile proportions reflect the proportion of the total sample in each profile.

LL = loglikelihood. AIC = Akaike information criterion. BIC = Bayesian information criterion. VLRT = Vuong- Lo- Mendell-Rubin likelihood ratio test. BLRT = bootstrap likelihood ratio test.

Table S2

Unconditional Latent Growth Curve Model of Sexual Avoidance and Compulsivity

	Intercept		Slope		Quadratic	
	Mean	Variance	Mean	Variance	Mean	Variance
Sexual avoidance	17.60***	39.53***	-1.26	-56.01	0.67	-8.02
Sexual compulsivity	16.26***	28.24***	-5.76***	23.56	3.95***	3.23

Note. *** $p < .001$

Figure S1

Sexual Avoidance and Compulsivity Over the 12-month Follow-Up

