A systematic review looking at anodyspareunia among cisgender men and women

Abstract

This systematic review aims to provide an up to date evaluation of the available literature on anodyspareunia and treatment interventions. It aims to identify research gaps and to evaluate treatment methods in psychosexual health care services. Electronic searches including PubMed, PsycInfo, Web of Science, and registered clinical trials, yielded 7 studies. Research centred on MSM (men who have sex with men) and women with a 6:1 ratio. The findings of this review demonstrate the paucity of research on both the condition of anodyspareunia and its treatment. Moreover, all of the primary studies used in this review are self-reported and focus on the participant's experiences. Nonetheless, outcomes among both MSM and cisgender women revealed that anxiety, performance anxiety, compromised wellbeing, lack of stimulation, lack of lubrication and lack of sexual arousal appeared commonly reported predictors of anodyspareunia. In relation to patient population diversity, whilst research has focused on anodyspareunia among cisgender gay men, limited research has targeted other genders or sexualities. No research was found on intersex, transgender, and gender non-conforming (GNC) people. Similarly, there were no articles that discussed or evaluated treatment strategies. Consequently, these research gaps would benefit from investigation using standardised assessment tools along with control group comparisons and interventions supporting anal eroticism. In turn, this would inform the development and subsequent evaluation of appropriate treatment strategies for anodyspareunia.

Key words: anodyspareunia, MSM, cis gender women, anxiety, sexual arousal, lubrication

Introduction

Anal sex involves either the penis or any other object or body part being inserted into the anus or analingus (e.g. McBride & Fortenberry., 2010). Anal sex is one mainstream sexual act that seems perpetually taboo and clouded in myth and misinformation. Such acts might be deemed as “immoral” or “depraved” or that “only gay men have anal sex”. In reality, there is evidence that people of all sexual orientations and genders have been having anal sex for centuries (Reinisch, Ziemba Davis, & Sanders., 1990). The term anodyspareunia, pain experienced during anal sex, was originally solely used for cisgender men who have sex with cisgender men (MSM) and only later applied to other population groups, such as heterosexual women in 2011 (Branwen et al., 2017). Research into cis male anal practices often centre on disease and sexual health, frequently treating it solely as a risky sexual behaviour related to the transmission of HIV (e.g. Ndinda et al., 2008).

For context, in the 2016 US National Health Statistics Report, 36% of women and 42% of men reported engaging in anal sex. Higher rates were noted among those with university degrees and those who were not white and not heterosexual. In an online survey of 600 participants consisting of MSM and cisgender women, 39% of MSM reported preferring the role of top (penetrative partner), 29% bottom (receptive partner), and 33% of both enjoying both top and bottom sexual roles (Bespokesurvey., 2018). Of these, 39% reported engaging in sex weekly, 24% monthly and 13% daily. Among cisgender women, 56% reported having anal sex approximately once per year and 1 in 4 cis women engage in anal sex monthly. Compared to MSM, cis women were less likely to use anal cleansing products prior to anal

sex (42%) compared to MSM (61%). Importantly, this data negates the myth that only gay men have anal sex. However, this survey did not make any reference to anodyspareunia.

Anodyspareunia is pain experienced in the anus or rectum during anal penetration whether via the penis, fingers, or other objects. Pain can also be experienced during analingus or rimming. However, the experience of anodyspareunia-related pain is subjective. Indeed, there are controversies about the magnitude of pain that must be experienced to define it as anodyspareunia (La Rosa., 2020, p.8). This is further complicated by the generally accepted assumption that any anal penetration is likely to be painful. Therefore some pain during anal sex is deemed acceptable and to be expected. In contrast, any pain during vaginal sex, clincally called Genito-pelvic pain/penetration disorder (GPPPD, formerly dyspareunia), is deemed in need of treatment. Compared to many other psychosexual problems, significantly fewer people seek help for pain related to anal sex (Hollows., 2007).

Most commonly, anodyspareunia is an acute, shooting pain during sex or a deep burning sensation after sex. It may result in visible tears or fissures in the anus as well as itching or passing blood (Rosser et al., 1998). There are three general biological possible causes: functionality of the anus, lack of lubrication in the anus and rectum, and the sensation of pleasure not equating with readiness for penetration. The pain can be due to the anus and rectum not having evolved to easily accommodate an erect penis. The anus and rectum are made to hold and pass stools, which are of a similar size to a penis (four to eight inches) but should be of a much softer consistency. Often, when an item is first being introduced into the anus, it can be a shock to the body. The sphincter can react reflexively and, like an eyelid trying to prevent dust getting into the eye, blink or wink. This 'wink' is an autonomic contraction of the external sphincter and generally only lasts a second or so (Chia & Abrams., 2005). If the anus isn't sufficiently warmed up and stimulated, it may not relax enough to be comfortably penetrated and therefore cause the receiver pain.

In terms of lubrication, the anus and rectum are moist, as some lubrication is required to allow stools to be passed. But it has considerably less natural lubrication that the vagina and certainly not enough to be penetrated by a dry object, such as a penis or sex toy. Consequently, without lubricant, most people will experience pain during anal sex. Thirdly, many people, although not, all as we shall discover shortly, have anal sex because it's physically pleasurable yet may attempt penetration before the anus and rectum are ready. Despite the fact that the anus has the body's second highest concentration of nerve endings after the clitoris and penis, anal sensations of pleasure don't equate with the anus being sufficiently stimulated, relaxed, and lubricated, to be comfortably and safely penetrated (Chia & Abrams., 2005).

The rectum is a smooth muscle that people usually develop subconscious control over as a young child. When someone is ready to release their stool, the rectum, anus and other pelvic floor muscles relax enough to allow the stool to come out. The size and consistency of what is trying to come out (or in) and the level of relaxation and readiness contribute to how comfortable, or not, the movement through the rectum and anus is. This is not an autonomic response and therefore emotions such as fear, stress, and anxiety can influence how much someone can consciously relax their anus and rectum. In contrast, organic causes of anal pain can include hard or large stools, chronic or repeated diarrhoea or constipation,

childbirth, Crohn's disease or other bowl diseases, prostate and anal cancer, some STI's such as Syphilis, Herpes, or HPV, or other underlying medical conditions such as TB (NHS., 2021). Any of these can lead to anal pain or sensitivity which can then be inflamed by anal sex.

In an Argentinian study of 200 MSM, 89% reported some pain during anal sex, with 6% stating it was severely painful (La Rosa., 2020). In contrast, in a Belgian MSM study, only 18% of participants reported experiencing anodyspareunia (Vansintejan et al., 2013). In another study consisting of n=404 MSM, approximately 14% of men who engaged in anal sex experienced pain (Damon & Rosser., 2005). These studies rebute the myth that anal sex is always painful or painful for everyone. Among those experiencing anodyspareunia, the majority reported this as a lifelong condition which had caused psychological distress and resulted in sexual avoidance. The authors drew parallels with dyspareunia in women with regards to psychological distress and sexual avoidance. They also show that a significant proportion of people having anal sex do experience pain, with the highest proportion among those being penetrated by men. Further, treatment interventions appear scarce and mainly anecdotal.

In a correlational study consisting of n=2002 cisgender women aged between 18-30 years old, 63.2% had engaged in anal sex (Stulhofer & Ajduković., 2011). Among those who engaged in anal sex, approximately 8.7% reported severe anal pain during sex. Participants attributed this to varied factors including limited understanding of anal sex and anal eroticism and an inability to relax. Those experiencing anodyspareunia reported lower levels of general sexual satisfaction and assumed a less sexually assertive role during sex.

Whilst research has focused on anodyspareunia among cisgender gay men, limited research has targeted other genders or sexualities. This review aims to provide an up to date evaluation of the available literature on anodyspareunia along with treatment interventions. It aims to identify the research gaps along with discussing the implications of treatment in psychosexual health care services. Additionally, the absence of information on intersex, trans, and gender non-conforming (GNC) people needs to be noted in this review.

Methods

The following systematic review looked at the preliminary findings of anodyspareunia among cisgender women and men, and intersex, transgender, and GNC people along with treatment interventions. In order to minimise heterogeneity, both inclusion and exclusion criteria have been applied. Primary studies were based on the inclusion and exclusion criteria outlined below.

Inclusion criteria

Peer-reviewed journals
Quantitative research
No date limit
No limit on participant's age was applied

No limit on participant's sex, sexuality, or gender was applied
Anal intercourse

Exclusion criteria

Non-peer-reviewed articles
Meta-analysis/systematic reviews/literature reviews
Non-human studies
Research dissertations/books/grey literature
Qualitative research
Vaginal intercourse

Data collection including search strategy

A systematic search based on these criteria was conducted in July 2022 by three reviewers. PubMed, PsycINFO, Web of Science, and Cochrane Library advanced search were accessed to capture a range of research studies related to anodyspareunia in cisgender men and women & intersex, transgender, and gender non-conforming clients. This was proceeded with Boolean operations and included the following search terms:

1. ("anodyspareunia" OR "pain during anal sex") AND ("men" OR "male" OR "man" OR "MSM", "women" OR "female" OR "woman" OR "cisgender woman" OR "cisgender man" OR "trans" OR "transgender" OR "gender-diverse" OR "TGD" OR "transmen" OR "transwomen" OR "transman" OR "transwoman" OR "intersex")

2. 1# AND ("sex therapy", "psychosexual therapy", "couple counselling" OR "couple therapy", "cognitive behavioural therapy" OR "mindfulness" OR "mindful compassion therapy")

This review conformed to recommendations from the Preferred Reporting Items for Systematic Reviews (PRISMA) statement (Moher, Liberati, Tetzlaff, & Altman, 2009; see figure 1).

Initially, the titles and abstracts of the articles were selected prior to full articles being sourced based on the inclusion and exclusion criteria. Duplicate articles were removed from the search along with those which did not conform to inclusion and exclusion criteria. Cochrane RevMan 5.4 was used to conduct quality evaluation of the studies based on design, sample, and quality of the assessments used (RevMan 5., 2020).

Article selection criteria

PubMed Database Searches based on search terms 1 and 2 produced 13 studies. Following a filtering analysis based on the inclusion and exclusion criteria, there were 8 eligible studies.

PsycINFO Database Searches based on terms 1 & 2 yielded 10 studies, 5 of which were eligible. Web of Science Database Searches yielded 2 studies. Clinical.gov searches yielded 0 studies. Following a filtering analysis based on the inclusion and exclusion for all search engines including the removal of duplications, 7 studies were identified as eligible.

Of these 7 studies, focus centred on design, assessment tools, participant numbers, demographics and outcomes. This was separated into cisgender men and women.

Figure 1: A systematic review looking at anodyspareunia among cisgender men and women systematic review PRISMA flow chart.

Results

There were only seven eligible studies, ranging between 1998 to 2022, confirming the limited available data in this area. There were significantly higher numbers of MSM studies (n=6) than cisgender women (n=1). Notably, no studies targeted heterosexual men, intersex, trans, and GNC people. There were also no registered interventions for anodyspareunia.

With reference to cisgender men, MSM, there was cultural variation in the studies ranging from the United States, Belgium, and Poland (Rosser et al., 1998; Damon & Rosser., 2005; Rosser et al., 2020; Vansintejan et al., 2013; Wheldon et al., 2021; Mitchell & Ziegler., 2022; Grabski & Kasparek., 2020). The studies were mainly descriptive and correlational design studies. However, there were no control groups, randomised controlled (RCT) or longitudinal studies. The sample size ranged from 72 to 1752 participants. Assessment tools used varied from being developed for the study, including extensive demographic details which sometimes included a 7 point Likert scale. Standardised questionnaires had not been used, which highlights issues of reliability and validity. Nonetheless, these were very inclusive and descriptive studies (Rosser et al., 1998; Damon & Rosser., 2005). In a later study, Rosser et al. (2020) diversified the assessment tools and targeted post prostate cancer treatments. They included the Disease Specific Quality of Life Index, The Expanded Prostate Cancer Index Composite (EPIC) (Weir et al., 2020) (Cronbach alpha 0.82), the Physical and Mental Quality of Life (physical subscale r = .80; mental subscale r = .76) (Ware, Kosinski, & Keller., 1996) and the Gay Sexual Functioning Inventory, which was specifically developed for the study. Their findings demonstrated how sexual functioning was compromised following cancer treatment, which impacted physical and psychological wellbeing. The GAMELESS questionnaire (Vansintejan et al., 2013) used in Vansintejan et al. 2013's research, consisted of combined validated questionnaires including the Kinsey's Heterosexual–Homosexual Rating Scale (Kinsey, Pomeroy & Martin., 2003), the Index of Premature Ejaculation (Althof et al., 2006), the Erection Quality Scale (Wincze et al., 2004), the International Index of Erectile Functioning (2004) and the Female Sexual Function Index (Isidori et al., 2010). Cronbach alpha = .95.

Anxiety played a significant causal role with anodyspareunia. Predictors of anodyspareunia include inadequate lubrication and lack of sexual stimulation prior to penetration. In a large correlational design study in Poland (n=1443 MSM and engage in anal sex), age, performance anxiety, and internalised homophobia were the main predictors of anodyspareunia among MSM (Grabski & Kasparek., 2020). The subjective unit of pain experienced used a 5 point Likert scale. Further assessments included the Sexual Minority Stress Scale based on Ilan Meyer's Minority Stress Model (Meyer., 2003, with Cronbach alpha .95).

With reference to cisgender women, an online correlational study included n=2002 women 18–30 years of age (Stulhofer & Ajduković., 2011). Among this cohort, n=1265 engaged in anal sex, where n=505 reported anal sex on more than two occasions. Of these, n=44 reported anodyspareunia. Extensive demographics were included and Likert scales assessing both frequency of anal sex and levels of subjective pain. A Sexual Satisfaction Scale was used (Stulhofer et al., 2010) (Cronbach α .93). Relationship intimacy was assessed using the Miller Social Intimacy Scale (Miller & Lefcourt., 1982).

Higher levels of anxiety were reported along with lower levels of sexual satisfaction and sexual assertion.

Discussion

This review aimed to look at the predictors of anodyspareunia among cisgender men and women and intersex, GNC, and trans individuals. Among the small but informative selection of studies available, research has centred on MSM men followed by heterosexual women with a 6:1 ratio. Indeed, research looking at anodyspareunia among heterosexual men is scarce and no research has targeted intersex, trans, and GNC people. Clearly, there is huge scope for research being conducted in this area.

Interestingly, across all studies, the incidence of anodyspareunia among MSM and cisgender women appears similar (e.g. Damon & Rosser., 2011). Within the existing research, mention of performance anxiety, depression, and compromised well-being is made. Other key factors included a lack of lubrication and preparation (foreplay), relationship difficulties, and a limited understanding of anal eroticism. Looking at these two population groups, there are two noteworthy parallels. Both have ambivalent anxiety about, and expectations of, pain during anal sex. Both face social norms that prevent them voicing their pain to their partner and/or seeking treatment. A closer examination of these variables among diverse groups would provide better insight into the predictors of anodyspareunia. Internalised homophobia was also reported as an aggravate to anodyspareunia (Grabski & Kasparek., 2020). Despite Section 28, along with the abolition of universal sodomy laws in the US in 2003 (Jacobson., 2018), internalised homophobia persists (Preston., 2020). Arguably, internalised homophobia exists in a heterocentric society that stigmatises or condemns LGBTQIIA+ communities (Preston., 2020). This can become compounded among those for whom anal sex and/or homosexuality may still be illegal in the country or culture they are from, or at least socially and religiously frowned upon.

Among MSM, Jacobson (2018) describes how the sexual role of a top or bottom, or BDSM roles such as ‘fister’ or ‘cum slut’, can form a significant part of a person’s personal and social identity. In turn, this can impact the levels of anal pain during sex an individual is willing to endure. For those who continue to have painful anoreceptive intercourse (ARI), there may be a desire to ignore, try to enjoy, or to find ways to overcome the pain. Many use poppers, alcohol, and other substances to numb or soothe the pain (called Chemsex), rather than seeking professional help (Cheng., 2022). According to Hibbert et al., (2019), sexual pain is reported more often among Chemsex users compared to non-Chemsex users. The use of recreational drugs can minimise pain and might extend to mediating internalised homophobia and shame (e,g Ruiz-Robledillo et al., 2021). Further studies including demographics in relation to Chemsex might establish whether there is any relationship between internalised homophobia and anodyspareunia that is moderated by the individual through drug use (pain management e.g. Khanzian., 1996).

With reference to heterosexual individuals, there has been a marked increase in reported experiences of anal sex in the United Kingdom, Croatia, and Sweden (e.g. Johnston et al., 2001; Lewin., 2000). Sadly, this does not seem to be matched by an increase in psychosexual education about anal sex. For example, although most people know the difference between their orifices, the anus has been mistaken for the vagina by more than one couple, with one couple trying to conceive for five years before discovering they were only having anal sex (Bodansky & Bodansky., 2001, p. 174). Sociological reasons were given for this rise in anal sex, including 'saving' the woman's virginity, as well as medical myths, such as avoiding stretching the vaginal canal and a perceived reduced risk of STI transmission (Ussher & Baker., 1993, p.136). According to Stulhoffer & Ajdukovic (2011), anal sex in pornography has 'normalised' this activity and has perhaps played a role in anal sex experimentation. Interestingly, in a UK study, the main two reasons for having anal sex reported were to copy what they saw in pornography and that, "it's tighter" (Marston & Lewis., 2014). Most male participants expected their partners to find anal sex painful. Many held the contradictory opinion that people must enjoy anal sex as so many people are doing it, yet, simultaneously assumed it would be painful for their partner, and admitted that they rarely experienced any pleasure themselves (Marston & Lewis., 2014). Heterosexual women in the study frequently talked about being coerced or "accidentally" anally penetrated by their partner, which made many feel anxious. Moreover, "women experiencing pain were often depicted as naive or flawed" and female participants seldom talked to their partner about the pain (Marston & Lewis., 2014). This was echoed in another heterosexual study, which noted that "large proportions of Americans do not tell their partner when anal sex hurts" (Herbenick et al., 2015). Indeed, among those experiencing anodyspareunia in the 2011 Stulhofer & Ajdukovic study, approximately half of the sample had discontinued their first ARI experience because of pain. Despite the increased interest in anal sex, this review identified only one study about women experiencing anodyspareunia. Of interest, this study was conducted in 2011 leaving an 11 year research gap, which clearly indicates the need for further research.

With reference to co-morbidities and anodyspareunia, these fall into three main groups: general and performance anxiety, related psychosexual presentations, and unrelated mental or physical health conditions (e.g. Damon & Rosser., 2005; Rosser et al., 2020; Vansintejan et al., 2013; Wheldon et al., 2021; Mitchell & Ziegler., 2022; Grabski & Kasparek., 2020; Stulhofer & Ajduković., 2011). As stated above, anxiety was often reported in the research studies in which performance anxiety was highlighted. Anxiety can be both the result of and cause of stress and tension in the body, lack of arousal, and an internal sense of pressure to perform or endure pain (Hollows., 2007). Also, previous experiences of anodyspareunia are likely to increase both situational anxiety and the chances of experiencing further pain (Ussher & Baker., 1993). This is unsurprising, as anxiety is recognised as a major contributing factor to dyspareunia/GPPPD and vaginismus in cisgender women (Skrine & Montford., 2001, p.161). Certainly in the 2011 Stulhofer & Ajdukovic study, over half of the sample did not reengage in the activity following a single anal sex attempt. In the studies of MSM with prostate cancer, anodyspareunia was often reported with erectile difficulties, anorgasmia, and urinary problems (Mitchell & Ziegler., 2022). Among cisgender heterosexual women, anodyspareunia was most often reported among women with GPPPD and/or vaginismus (Herbenick et al., 2015). In both the research and anecdotal articles about couples, the

related presentation was in the partner rather than the individual. Jacobson (2018) gave the example of one partner experiencing anodyspareunia and the other experiencing performance anxiety and erectile dysfunction, which caused him to rush penetration, which was why it was painful for the receiving partner. Thus, if the presenting patient is partnered, it's important to consider the sexual functioning, and dysfunction, of each person individually and how these interact within the relationship.

There are medical and psychological conditions, including certain medications, that can also increase the chances of pain during anal sex. Research suggests that in MSM and gay and bisexual men (GBM) populations with prostate cancer, one-third met the criteria for anodyspareunia (Rosser et al., 2020). This is all the more important when working with these clients in psychosexual services, as the overwhelming majority of patients receive little or no information from their healthcare providers about anodyspareunia (Wheldon., 2021). In addition to these comorbidities, neurodivergent clients may also have sensory processing issues (SPD), obsessive compulsive disorder (OCD), or related conditions such as arachibutyrophobia (the phobia of stickiness on skin), which can prevent them from using lubricant and further increase anxiety and thus pain.

Among MSM populations, estimates have ranged from between 10-14% up to 60% in relation to reported lifelong anodyspareunia, despite it being treatable (Rosser et al., 1998). The use of the term anodyspareunia has been used to mirror dyspareunia as a sexual pain disorder (Rosser et al., 1998). Rosser and colleagues proposed anodyspareunia being introduced to the DSM-5 criteria. Since symptoms are part of a diagnosis, this could provide a very useful guideline for suitable treatment intervention. Indeed, treatment interventions appear limited and remain mainly anecdotal consisting of medical/organic assessments, biological/sex education, psychosexual education, psychosexual therapy, and relationship therapy. These divisions are more to ensure that all the necessary aspects of the treatment are covered rather than as a sequence of session topics. Even though the number of sessions provided can vary, it's typically only 6 or 8 in the UK on the NHS, unless the client can afford longer-term private psychosexual therapy. The treatment strategies chosen should reflect the specific needs of the presenting patient. However, it's worth remembering the high level of misinformation about anal sex, and the possible need to offer more sexual educational information than might be provided on other topics (Jacobson., 2018).

Hollows (2007) suggests anal sex should include relaxation, sexual stimulation, sexual arousal, plenty of lubrication, and a slow "stop start" approach. The absence of any of these five elements may result in anal discomfort or pain. Mindfulness and Sensate Focus have anecdotally been discussed in reducing symptoms of anodyspareunia in regard to relaxation. More generally, mindful compassion activities are gaining popularity in health care as they target anxiety, and improve wellbeing and self-acceptance (Vosper et al., 2021). Mindful compassion consists of mindfulness, humanity, and self-kindness which attends to the inner critical voice (Neff., 2003). A mindful compassion study for dysphagia and vaginismus was incorporated into psychosexual therapy for 23 women over 6 group sessions (Saunders et al., 2022). Levels of subjective pain were reduced over the 6 sessions along with higher levels of self-confidence, sexual wellbeing, and levels of self-compassion being reported. Whilst analogies between MSM anal intercourse and heterosexual vaginal

intercourse have been disputed (Hollows., 2007), parallels have been drawn between MSM and female anodyspareunia (Damon & Rosser., 2011). Whether a mindful compassion intervention for both men and women experiencing anodyspareunia would support anal eroticism and greater comfort during ARI has yet to be explored.

Conclusion

In conclusion, the limited research available frequently paints patchy or even contradictory pictures, with the only point that all researchers agree on being that anodyspareunia does not receive sufficient attention. All of the primary studies are self-reported and focus on the participant's experiences; none evaluate related treatment strategies. Standardised assessment tools would complement this area of research along with control group comparisons and interventions supporting anal eroticism. Research needs to develop across all age groups and among diverse populations including trans, intersex and GNC people. Whilst psychosexual services have attended to GPPPD, they appear to have shied away from anodyspareunia. Perhaps low numbers presenting to healthcare providers might reflect views on anal sex being a 'taboo subject', or, possibly the absence of a formal diagnosis minimises referrals from primary care to psychosexual services. The lack of available evidence leaves us speculating. Anxiety was often reported among both MSM and heterosexual women. Thus further clarification regarding general and/or performance anxiety would support a better understanding of its mediating effect on anodyspareunia. Clinical trials assessing suitable interventions including psychosexual education are needed. Perhaps an RCT looking at how mindful compassion might support anal eroticism would be of interest. This could inform psychosexual and relationship therapy by supporting those in sexual relationships to extend their sexual repetoire and ensure all activites are consensual and pleasurable for all parties.

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Table 1: A systematic review looking at anodysparxeunia among cisgender men and women

Author/Year	Country	Study design	Sample	Outcomes

Male Studies				
Rosser et al., 1998	United States	Descriptive. Survey consisted of demographics. For example, Levels of l lubrication Penis size, sexual arousal, sexual position and condom use. Pain included both frequency and Severity of pain during anal intercourse and was measured using a 7-pt Likert scale.	N= 277 men who have sex With men (MSM) Aged 18 years and above	Factors which impacted anodyspareunia included depth and thrusting of intercourse. Anxiety Increases pain. The authors suggested the development of a clinical criteria not dissimilar to that used for Sexual pain disorder
Damon & Rosser., 2005	United States	Descriptive survey Extensive demographics Including lifelong or situational anodyspareunia. Anodyspareunia was assessed using a 7-item Likert scale. Sexual situational Scale using a 7 point Likert assessment. Satisfaction with Sexual relationships/ activity is a 7-pt Likert scale. Internalised homonegativity scale (Ross & Rosser, 1996) Cronbach α .62-.85. Outness on domains Friends/family/coworkers were based on a 7 pt Likert scale.	N= 404 MSM aged 18 years and above	14% of the sample experienced anodyspareunia Which tended to be life long. Psychological factors were attributed to Pain. Clinical criteria in diagnosing anodyspareunia should be developed
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Rosser et al., 2020	United States	Correlational design online survey. Demographics Including sexual characteristics and medical information. Disease Specific Quality of Life. The Expanded Prostate Cancer Index Composite (EPIC) (Wei et al., 2000) Cronbach α ≥0.82. Physical and Mental Quality of Life (Ware et al., 1996). Cronbach α .76-.80. Gay	n= 193 MSM with prostate cancer aged 18 years old and above	The majority of participants described their sexual functioning post cancer treatment as fair to poor 1/3 of sample experienced anodyspareunia. Erectile difficulties were common place and severe. Sexual functioning was a

	Sexual Functioning Inventory using a 5 pt Likert scale		predictor of long term mental and physical well being Perhaps the Development of a tailored intervention for post prostate cancer treatment is needed.
Vansintejan et al., 2013 Belgium	Online correlational design GAMELESS questionnaire (Vansintejan et al., 2013) including the Kinsey's Heterosexual–Homosexual Rating Scale (Kinsey et al., 2003), the index of premature ejaculation (Althof et al., 2006), the Erection Quality Scale (Wincze et al., 2004), the International Index of Erectile Functioning (2004) Adapted Female Sexual Function Index (Isidori et al., 2010). Cronbach alpha .92.	n= 1752 MSM men aged 18 years and above n= 1190 engaged in anal sex	Of the 1190, 59% reported anodyspareunia 32% reported mild symptoms, 17% mild to moderate, 4% moderated and 2 % severe anodyspareunia. Inadequate lubrication and lack of stimulation were predictors of pain. 28% performed unsafe anal sex.
Wheldon et al., 2021			
Grabski & Kasparek., Poland (2020)	Only survey. Correlational Design. Subjective unit of pain was measured using a 5 point Likert Scale. Sexual Minority Stress Scale based on Ilan Meyer's Minority Stress Model (Meyer., 2003) Cronbach alpha .95.	n= 1,443 MSM aged 18 years and above engaged in anal sex	Further research is required. Predictors of anodyspareunia might include performance anxiety internalised homophobia and a younger age group.
Female studies			
Stulhofer & Ajduković. Croatia 2011	Convenience sampling. Online survey. Correlational Design. Likert scales assessing both frequency of anal sex and levels of subjective pain. A Sexual Satisfaction Scale was used (Stulhofer et al., 2010)		

	(Cronbach α .93). Relationship intimacy was assessed using the Miller Social Intimacy Scale (Miller & Lefcourt., 1982).	n=2002 women 18–30 years of age n=1265 engaged in anal sex	Approx. 48.8% discontinued their first anal intercourse owing to pain. N=788 62.3% continued anal sex. N=505 who engaged in 2 or more episodes of anal sex. N= 44 (9%) reported anodyspareunic

Figure 1: A systematic review looking at anodyspareunia among cisgender men and women systematic review PRISMA flow chart (goes here).