Cannabis for the Management of Female Orgasm Difficulty/Disorder: An Observational Study

by

Suzanne Mulvehill

MBA, Florida Atlantic University, 1995

BSW, Florida Atlantic University, 1990

Maylin Batista, Ph.D., Dissertation Committee Chair

Jordan Tishler, MD, Committee Member

Becky Lynn, MD, Committee Member

A Dissertation in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy in Clinical Sexology

International Institute of Clinical Sexology

Miami Shores, Florida, USA

September 2023

COMMITTEE SIGNATURE PAGE
DISSERTATION FINAL APPROVAL

This dissertation, written by, **Suzanne Mulvehill** entitled **Cannabis for the Management of Female Orgasm Difficulty/Disorder: An Observational Study** has been approved with respect to style, accuracy, and intellectual content by the Dissertation Committee, and is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Sexology.

Committee Chair Print Name: Maylin Batista, PhD

Signature_____ Date _____

Committee Member Print Name: Jordan Tishler, MD

Signature_____ Date_____

Committee Member Print Name: Becky Lynn, MD

Signature_____ Date_____

ABSTRACT

This mixed-methods observational study, conducted between March 24, 2022, and February 28, 2023, is the first to evaluate cannabis use and female orgasmic disorder (FOD). Up to 41% of women experience FOD, a statistic unchanged for 50 years. A paucity of validated treatments exists. Researchers have suggested cannabis as a treatment for FOD for decades. This study's statistically significant results align with and expand upon 50 years of cannabis research, revealing that cannabis helps women orgasm and increases orgasm frequency, satisfaction, and ease for women with and without FOD.

A survey collected data on demographics, sexual behavior, mental health, cannabis use, and the Female Sexual Function Index (FSFI) orgasm subscale questions with and without cannabis before partnered sex. The interviews evaluated cannabis-assisted orgasm, dosage, preferred strains, and timing of cannabis use before partnered sex.

Of the 1,037 survey responses, 387 were suitable for analysis. Among respondents reporting orgasm difficulty, 45% were between the ages of 25-34, 75% reported their race as white, and 82% were married or in a relationship. Cannabis use before partnered sex increased orgasm frequency (72%), improved orgasm satisfaction (67%), or made orgasm easier (71%). Frequency of cannabis use before partnered sex correlated with increased orgasm frequency. The reasons for cannabis use by women with FOD before partnered sex that created the most positive orgasm response was to manage pain or enhance sexual pleasure.

Not all women found cannabis helpful in orgasm. Moreover, the study's findings may not be generalizable to women who rarely or do not use cannabis before sex or who have never

experienced an orgasm. The researcher did not assess the cultivar of cannabis for effectiveness, nor were study participants asked about their cannabis chemotype of choice or the amount of cannabis used.

The study suggests that treatment for women with orgasm difficulty should incorporate cannabis and that U.S. states and countries with medical marijuana programs should make it a condition for use. At the same time, the researcher emphasizes the need for prioritizing further randomized controlled studies to assess cannabis dosage, timing, and other clinical implications for women experiencing orgasm difficulty.

I dedicate this work to the 1,037 women who responded to my survey, the 167 women who shared their contact information with me, the 40 women I interviewed and their partners, and all women who have had orgasm difficulty. I also dedicate this work to the future of cannabis becoming a recognized treatment for female orgasm difficulty and a statistical reduction in the persistently high percentage of women suffering from orgasm difficulties.

I was inspired to hear women's stories of perseverance and overcoming hardships, coming to terms with their orgasm difficulty, and navigating with it and through it, uncovering and healing from shame, learning to orgasm, and discovering the use of cannabis and how it helped many of the women I interviewed orgasm.

ACKNOWLEDGMENTS

I would first like to thank and acknowledge Dr. Jordan Tishler, my dissertation advisor, who believed in my work from the first time we spoke nearly four years ago and who supported me and guided me as I transversed the often-seen taboo subjects of cannabis, sex, and female orgasm. Thank you, Dr. Tishler.

A special thank you to Dr. Maylin Batista, my dissertation chair, who guided and supported my dissertation process. Thank you for your positive energy and encouragement to keep going. I wish to bestow a special thank you to Dr. Carole Clark, President of the International Institute of Clinical Sexology, for the education I received for my Ph.D. We first met in December 2019 when I was exploring which Ph.D. programs to attend, and I knew this was the school and program I desired to attend. A special thank you also to Dr. Janis Roszler, who supported me in my Ph.D. program, and to all the advisors and professors who supported me, guided me, and from whom I learned since I began the program in January 2020.

A special thank you to Dr. Steven Zink, my dissertation editor, who suggested I do a mixed method study, and for your editing and experience guiding dissertation students. Thank you, Dennis E. House, for your knowledge and expertise in conducting the statistical analysis for my study and for recommending and explaining specific statistical tests for my study's analysis. Your expertise deepened the value of my research.

I also want to acknowledge and thank my friends Eliane, Liz, Angela, Irina, Claudia, Sharon, Athena, Katrina, and all my friends and family who supported me as I conducted this research.

A special thank you to my children, Chris and Melissa, and my brother, Joe, for always believing in me, even when you were unsure where I was going or why I was traveling such paths.

"Could marijuana be the catalyst that would enable a so-called non-orgasmic woman to reach orgasm?"

(Barbara Lewis, *The Sexual Power of Marijuana*, 1970, p. 71)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ASC	Altered States of Consciousness
CBD	Cannabidiol
CB_1	Cannabinoid Receptor Type 1
CB_2	Cannabinoid Receptor Type 2
CSA	Childhood Sexual Abuse
DSM	*The Diagnostic and Statistical Manual of Mental Disorders*
DSM-I	*Diagnostic and Statistical Manual of Mental Disorders, 1st ed.*
DSM-II	*Diagnostic and Statistical Manual of Mental Disorders, 2nd ed.*
DSM-III	*Diagnostic and Statistical Manual of Mental Disorders, 3rd ed.*
DSM-IV	*Diagnostic and Statistical Manual of Mental Disorders, 4th ed.*
DSM-5	*Diagnostic and Statistical Manual of Mental Disorders, 5th ed.*
ECS	Endocannabinoid System
FOD	Female Orgasmic Disorder
FSFI	Female Sexual Function Index
FSAD	Female Sexual Arousal Disorder
FSIAD	Female Sexual Interest/Arousal Disorder
HSDD	Hypoactive Sexual Desire Disorder
ISSM	International Society for Sexual Medicine
LGBTQ	Lesbian, Gay, Bi-sexual, Transgender, Questioning
PDOD	Pleasure Dissociative Orgasmic Disorder

PTSD	Post Traumatic Stress Disorder
THC	Δ^9-Tetrahydrocannabinol

Chapter 1: Introduction

This observational study explored if cannabis is a viable treatment for women who experience orgasm difficulty. Female orgasmic disorder, referred to in this study as female orgasm difficulty (FOD), is characterized by difficulty experiencing orgasm and/or markedly reduced intensity of orgasmic sensations (American Psychiatric Association [APA], 2013). FOD affects up to 41% of women worldwide (Laumann et al., 2005), a percentage that has remained unchanged for 50 years (Kontula & Miettinen, 2016). Numerous studies suggest cannabis *could* be a treatment for FOD and other female sexual disorders (Dawley et al., 1979; Gorzalka et al., 2010; Moser, 2019), yet the literature review yielded no studies that evaluated cannabis as a treatment for FOD. Research is needed to develop an understanding of the effects of cannabis on female sexual function (Bloomfield et al., 2016; Lynn et al., 2019; Sun & Eisenberg, 2017), and existing research needs to be recognized for cannabis assisting women's orgasm, particularly for women who experience orgasm difficulty (Goode, 1969, 1970, 1972; Kasman et al., 2020; Lewis, 1970; Lynn et al., 2019; Wiebe & Just, 2019).

Cannabis increases women's ability to orgasm, specifically for women who have difficulty orgasming (Wiebe & Just, 2019), helps women orgasm (Goode, 1969, 1970, 1972; Kasman et al., 2020; Lynn et al., 2019), and enhances the quality, intensity, and frequency of female orgasm (Lynn et al., 2019; Weller & Halikas, 1984; Wiebe & Just, 2019). Anecdotal evidence suggests that cannabis helps women orgasm who have Lifelong FOD, meaning women who never orgasmed in their life (Goode, 1969, 1970, 1972; Lewis, 1970; Zinko, 2018) and women who have Situational FOD (Goode, 1969, 1970; Lewis, 1970; Zinko, 2018), meaning women who orgasm in some situations but not others.

This report is observational, based on a cross-sectional study design (Setia, 2016) that used a mixed methods research approach (Tashakkori & Teddlie, 2010). Data was collected sequentially, first, with an online survey using Qualtrics[1], followed by interviews for the qualitative data collection. Measurement of FOD used the orgasm subscale questions of the validated Female Sexual Function Index (FSFI) (Rosen et al., 2000). The survey included additional questions about cannabis use, sexual activity, and demographic and psychographic data.

Social media, cannabis associations, cannabis dispensaries, and gynecological associations in the United States were the principal means of promoting the availability of the survey. Cannabis associations included the Society of Cannabis Clinicians and the Association of Cannabis Clinicians. Gynecological associations included the American College of Obstetrics and Gynecology. Additional marketing efforts were conducted through the researcher's social media to create awareness of the study and the need for volunteers to participate in the study's survey. Sexually active women at least 18 years of age who used cannabis and engaged in partnered sex within the last 30 days constituted the study population. Following the study's quantitative phase, the author formulated structured and semi-structured questions for discussions with the study's interview participants. Data were analyzed and interpreted using statistical methods and thematic and content analyses.

[1] Qualtrics (https://www.qualtrics.com) is a widely used and versatile software for the creation of highly customizable surveys.

Problem Statement

Reported prevalence rates for female orgasmic problems in women vary widely, from 10% to 42%, depending on factors such as age, culture, duration, and severity of symptoms (APA, 2013, p. 431). According to a worldwide study of more than 13,000 women, the inability to reach orgasm has ranged from 18-41% (Laumann et al., 2005). For example, the prevalence of inability to reach orgasm ranged from 17.7% in Northern Europe to 42.2% in Southeast Asia (APA, 2013, p. 432). Approximately 10% of women do not experience orgasm throughout their lifetime (APA, 2013, p. 431).

Cannabis helps women orgasm (Lewis, 1970; Lynn et al., 2019; Moser et al., 2023) and eases women's orgasm difficulties (Wiebe & Just, 2019). Cannabis has also reportedly enhanced the quality of women's orgasms and provided more frequent and intense orgasms (Dawley et al., 1979; Halikas et al., 1982; Lynn et al., 2019).

Researchers have suggested cannabis as a treatment for female sexual and orgasmic disorders for decades (Dawley et al., 1979; Gorzalka et al., 2010; Lewis, 1970). Many have repeatedly called for the study of the effects of cannabis on human sexual behavior (Bhambhvani et al., 2020; Koff, 1974; Lynn et al., 2020; Matheson et al., 2019; Weller & Halikas, 1984).

Cannabis and sex researchers found anecdotal evidence that cannabis helps women orgasm who reported having primary anorgasmia, also referred to as Lifelong FOD (Goode, 1969, 1970, 1972; Lewis, 1970). Sexologist Diane Urman and certified sex therapist Seth Prosterman, both San Francisco-based therapists, recommend cannabis to clients who have trouble orgasming or have Lifelong FOD (Yagoda, 2017). As noted, up to 41% of women have orgasm difficulty (Laumann et al., 2005), a statistic unchanged over the last 50 years (Kontula & Miettinen, 2016). While many studies have examined cannabis and sexual issues with a

population of women with orgasm difficulty, only one study controlled for a high percentage of women with orgasm difficulty (Halikas et al., 1982).

In a study evaluating how cannabis alters sexual experience, 50% of men and women who reported having difficulty reaching orgasm said it was easier to reach orgasm while using cannabis (Wiebe & Just, 2019). Furthermore, a study using the validated FSFI found a dose-response relationship between increased frequency of cannabis use and reduced odds of female sexual dysfunction by as much as 21%. However, the study did not specifically evaluate if women with a sexual dysfunction had FOD (Kasman et al., 2020). More frequent female cannabis users were twice as likely to orgasm as less frequent cannabis users (Lynn et al., 2019).

Only *one* empirically validated treatment for FOD (Heiman & Meston, 1997) exists; it is called directed masturbation (LoPiccolo & Lobitz, 1972). This treatment is specific to women with Lifelong FOD. Recognized nearly 50 years ago (LoPiccolo & Lobitz, 1972), no new validated treatments have emerged since, nor were *any* validated treatments for Situational or Acquired FOD found in the literature.

Situational FOD, referred to in this study as FOD during partnered sex, occurs with certain types of stimulation, situations, or partners, whereas Acquired FOD occurs after relatively normal sexual functioning (APA, 2013). Unfortunately, Heiman and Meston (1997) gave Situational FOD and Acquired FOD a poor prognosis. The researchers summarized that both Situational and Acquired FOD, referred to as secondary anorgasmia in their research, can take many different forms (e.g., vibrator/masturbatory-only orgasm) and require tailored interventions (Heiman & Meston, 1997). Twenty-three years later, Marchand (2020) evaluated FOD treatments and found no new FOD treatments since the 1980s.

Many women with orgasm difficulties have reported feeling inadequate and abnormal (Fahs, 2014; Séguin & Milhausen, 2016; Séquin & Blais, 2019). FOD can undercut the quality of life, resulting in personal distress and relationship tension (IsHak et al., 2010; Shindel et al., 2011).

Statement of Purpose

By specifically evaluating cannabis use and FOD, this study endeavored to discover if the 50 years of cannabis and sex research that revealed cannabis helped women orgasm also helped women with FOD. Studies over the last 50 years revealed that cannabis helped women orgasm (Goode, 1969, 1970, 1972; Lynn et al., 2019; Kasman et al., 2020; Wiebe & Just, 2019) and enhanced the quality, intensity, and frequency of women's orgasms (Lynn et al., 2019; Wiebe & Just, 2019; Weller & Halikas, 1984). Except for one study (Halikas et al., 1982), the high percentage of women with FOD was not controlled. Furthermore, no studies excluded women with FOD from research. Anecdotal research revealed that cannabis helped women with FOD (Goode, 1969, 1970, 1972; Lewis, 1970; Wiebe & Just, 2019), and more specifically, women with Lifelong FOD, women who had never orgasmed in their life (Goode, 1969, 1970, 1972; Zinko, 2018). Studies show that women who frequently use cannabis are twice as likely to orgasm and that more than one-third of women who use cannabis use it before sex (Lynn et al., 2019). Furthermore, Laumann et al. (2005) found that up to 41% of women experience orgasm difficulty.

The literature review found no studies that dichotomized women with and without FOD and used cannabis. Therefore, this research will make an original and valuable contribution by exploring the relationship between cannabis use and FOD. This research substantiates more than 50 years of literature and observation that cannabis helps women orgasm. In addition, the study

suggests that cannabis may be a viable treatment for FOD. This study's findings should stimulate future cannabis and FOD research to evaluate dosage, timing, and FOD sub-types to maximize the greatest possible cannabis contribution to managing and potentially overcoming FOD.

Research Questions

In the quantitative phase of this study, the guiding research question was:

- Does cannabis help women orgasm who report orgasm difficulty?

The specific sub-questions for the quantitative phase of the study were as follows:

1. Does cannabis help women who have FOD enhance the intensity, frequency, and/or quality of their orgasm?
2. Does cannabis, when used before sex, help women orgasm who report FOD?
3. How does cannabis affect Lifelong, Acquired, and Situational FOD?

The qualitative phase of the study developed research sub-questions by building upon the findings from the quantitative phase and analyzing the data obtained from it.

Overview of Methodology

A mixed methods research design served as the methodology for the study. A mixed methods research design is a procedure for collecting, analyzing, and "mixing" quantitative and qualitative research methods in a single study to understand a research problem (Creswell, 2012).

This study included two phases: the quantitative phase, referred to as Phase 1, and the qualitative phase, referred to as Phase 2. Phase 1 began on March 24, 2022, by collecting data with the Qualtrics online survey. The orgasm subscale of the validated survey instrument, the Female Sexual Function Index (Rosen et al., 2000), measured FOD. Additional questions were embedded into the survey to ask specific questions about cannabis use, demographics,

psychographics, sexual activity, type of orgasm difficulty, and the relationship between cannabis use, sexual activity, FOD, and orgasm.

The author announced the availability of the study and survey through cannabis associations and dispensaries, gynecological associations, and the researcher's social media. The study invited any sexually active women at least 18 years of age who used cannabis before sex within the last 30 days. Participants remained anonymous; all personally identifiable data associated with the study was considered confidential, and participants received a comprehensive explanation of the researcher's nature and involvement. The survey also requested that any participants who wished to participate further in the study (the qualitative interview phase) indicate their interest and provide their contact information.

The qualitative phase of the study used grounded theory (Glaser & Strauss, 1967). Based on the discovery of theory from data (Glaser & Strauss, 1967), grounded theory is one of the primary approaches to qualitative research (Bluff, 2005). Grounded theory represents both a method of inquiry and a resultant product of that inquiry (Charmaz & Bryant, 2011). Responses to semi-structured interviews conducted with study participants provided the data to which grounded theory was applied. As key issues emerged, the focus was to build a theoretical model to understand the relationship between cannabis use before sex and FOD.

The study's quantitative and qualitative phases included temporal factors (Sandelowski, 1999) critical to the study due to the substantive literature associating women's frequency of cannabis use with more frequent orgasms (Lynn et al., 2019). Moreover, there is little agreement regarding how many weeks, months, or years of cannabis use constitutes participants being considered frequent cannabis users. This study collected temporal data to evaluate how quickly

women were benefitting from cannabis use before partnered sex so that future studies could evaluate the effect of cannabis on FOD over a specific period.

Theoretical Framework

Before outlining the theoretical framework for this study, it is important to note that researchers have generally noted an absence of theory and theoretical frameworks in sexuality and sexual dysfunction studies (McCabe, 1991; Simon & Gagnon, 1986; Ventegodt & Merrick, 2008). Simon and Gagnon (1986) noted that despite the remarkable attention paid to the issues of human sexuality since the 1930s, the discussions related to the issues remain largely theoretically barren. McCabe (1991) noted that the literature exploring the etiology of sexual dysfunction is largely atheoretical. Ventegodt and Merrick (2008) noted insufficient sexuality theory to guide sex therapy.

Five theories support a hypothesis that cannabis may help women orgasm who have Lifelong, Acquired, or Situational FOD and serve as a theoretical framework for this study: Variability of Information Processing Theory (Feeney, 1976); Dishabituation Theory (Drew & Miller, 1974); Neuroplasticity Theory (James, 1890; Konorski, 1948); Multi-modal Treatment Theory (MacCallum & Russo, 2018); and Amygdala Reduction Theory (Rabinak et al., 2020; Raymundi et al., 2020).

Variability of Information Processing Theory

The variability of information processing theory suggests that cannabis induces variability of information processing by higher brain structures, specifically the cerebral cortex, and the limbic system, which results in variability of experience and behavior (Feeney, 1976). Feeney (1976) proposed that this variability detained classical reinforcers' habituation and induced novel experiences reinforced after an initial reduction of fear of the unfamiliar. A significant effect of cannabis is to increase the variability of responses (Feeney, 1976).

The rationale for the variability of information processing theory is that the theory may explain why women who had never experienced an orgasm discovered they could orgasm when using cannabis before sex (Goode, 1969, 1970, 1972; Lewis, 1970; Zinko, 2018). The theory would further explain why women who reported difficulty experiencing orgasm said it was easier to experience orgasm while using cannabis before sex (Wiebe & Just, 2019).

Dishabituation Theory

The dishabituation theory presents that Δ9-Tetrahydrocannabinol (THC), the psychoactive chemical in cannabis, causes a dishabituating effect (Feeney, 1976). Information processing of higher brain structures under the influence of THC reduces routines represented by habits (Feeney, 1976). For example, multiple studies have established a significant link between Lifelong FOD and cognitive distractions (Cuntim & Nobre, 2011; Dove & Wiederman, 2000; Adam et al., 2014) and that the habits of cognitive distraction during sexual activity may distract a woman from her sensations and ability to orgasm (Cuntim & Nobre, 2011). The theoretical rationale for the dishabituation theory proposes that THC could dishabituate the habit of being cognitively distracted.

Neuroplasticity Theory

Neuroplasticity theory is a broad theory to describe how the human brain grows, changes, and rewires (James, 1890; Konorski, 1948). In his chapter on habits in The Principles of Psychology (1890), William James introduced the plasticity of the brain and nervous system as key concepts in understanding how the brain changes (Alcover & Mazo, 2012). Plasticity refers to how learning, skill acquisition, interpersonal and social influences, and other contextual variables can influence the brain's physical structure influences, and other contextual variables can influence the brain's physical structure (Alcover & Mazo, 2012). Neuroplasticity includes

synaptogenesis, new synapses forming in the brain (Shaw & McEachern, 2001), and neurogenesis, which is the formation of new brain cells (Ming & Song, 2011).

Cannabis and endocannabinoids, the cannabinoids created by the human body, are increasingly recognized for their roles in neural development processes, including brain cell growth and neuroplasticity (Prenderville et al., 2015). The theoretical rationale for the neuroplasticity theory may explain why some women *learn* to orgasm while using cannabis before sex (Lewis, 1970; Zinko, 2018) and, once learned, find that they no longer require cannabis (Lewis, 1970).

Multi-modal Treatment Theory

The multi-modal treatment theory proposes that cannabis, with its more than 100 different phytocannabinoids and more than 400 chemicals (Sayin, 2012), can treat multiple symptoms and conditions simultaneously (MacCallum & Russo, 2018). Multi-modal treatment is a broad area of study that involves combining two or more modalities targeting different aspects of a disease (U.S. National Academies of Sciences, Engineering, and Medicine, 2017).

The rationale for the multi-modal treatment theory is that this theory could explain why women who use cannabis for *any reason* may decrease their FOD. Kasman et al. (2020) found that cannabis use decreased sexual dysfunction and that the reason women used cannabis had little to do with sexual functioning. In surveying 452 women on their cannabis use, the three primary reasons women identified as reasons for their cannabis use were to relax (81%), to relieve stress (74.1%), and as a sleep aid (73.9%) (Kasman et al., 2020).

Amygdala Reduction Theory

The amygdala reduction theory proposes that cannabis can reduce the activity in the amygdala, a part of the brain associated with fear responses to threats (Rabinak et al., 2020).

Thus, cannabis cannabinoids could play a role in extinguishing traumatic memories (Raymundi et al., 2020).

The amygdala reduction theory is important to this study because hypervigilance, anxiety, and post-traumatic stress disorder (PTSD) are responses of the amygdala (Rabinak et al., 2020) and commonly impair sexual response (Corretti & Baldi, 2007; Yehuda et al., 2015). The theoretical rationale for this theory is that the amygdala reduction theory can positively affect FOD. Kosiba et al. (2019) postulated that an anxiety reduction associated with a sexual encounter could improve orgasm and satisfaction.

Rationale and Significance

This study should prove significant in contributing to the underdeveloped area of research related to cannabis and FOD while posing numerous pertinent questions to guide future research. The primary significance of this study is that no existing studies have explored cannabis and FOD. Knowledge and understanding of FOD and cannabis use factors may provide additional insight into future treatments for the persistently high percentage (up to 41%) of women worldwide who suffer from FOD (Laumann et al., 2005). Knowing and predicting the power of selected external and internal factors to women's FOD and cannabis use may assist in developing FOD treatments and enhancing women's sexual health, which is one of the World Association for Sexual Health's top 10 objectives (World Association of Sexual Health, 2014).

The literature calls for qualitative and quantitative research to determine how each variable contributes to cannabis' effect on women's orgasms (Bhambhvani et al., 2020; Matheson et al., 2019; Sun & Eisenberg, 2017). This study, therefore, used a mixed methods approach, combining both qualitative and quantitative research. Such methodological integration provided a deeper insight into the problem of FOD, first, by identifying the predicting power of

selected internal and external factors contributing to and/or impeding women's orgasm, and second, by exploring the participants' views regarding the statistical findings in more depth. In terms of methodology, the mixed methods design enhanced an understanding of the relationship between cannabis, female orgasm, and FOD and ushered in literature exploring the influence of cannabis on Female Orgasmic Disorder (FOD). Drawing upon five decades of research and observation involving women suffering from FOD, these studies provided compelling evidence of the beneficial impact of cannabis in enhancing women's orgasmic experiences (Goode, 1969, 1970, 1972; Kasman et al., 2020; Koff, 1974; Lewis, 1970; Lynn et al., 2019; Moser et al., 2023; Wiebe & Just, 2019).

Role of the Researcher

The researcher has the skills necessary to carry out the designed study. The researcher holds a master's degree in business and a bachelor's degree in social work. The researcher completed high-level mathematical coursework, including statistics and calculus, and used data analysis techniques such as strengths, weaknesses, opportunities, and threats (SWOT) analysis to develop successful business models. The researcher is skilled in mathematical techniques using correlational data and variables to create database queries. Such techniques were invaluable in the quantitative survey analysis.

The researcher also has the requisite skills to conduct qualitative research. The researcher's qualitative research skills include interpersonal, interviewing, listening, critical reflexivity, and inferencing skills. The researcher enhanced these skills as a business manager, owner, and consultant to more than 500 entrepreneurs at Florida Atlantic University's Small Business Development Center. The researcher gathered the data from her business consulting experience, identified significant themes, and constructed a conceptual framework published in

two books (Mulvehill, 2003; Mulvehill, 2008). The researcher trained over 10,000 entrepreneurs and business consultants at conferences and universities throughout the United States and Europe. Furthermore, the researcher served two terms as an elected government official in Lake Worth, Florida. In addition, during the nearly four years of conducting research for this study, the researcher presented her cannabis and FOD research and theories at six international conferences (Mulvehill & Tishler, 2021a; Mulvehill & Tishler, 2021b; Mulvehill & Tishler, 2021c; Mulvehill & Tishler, 2022b; Mulvehill & Tishler, 2023; Tishler & Mulvehill, 2022). She also participated in five podcasts (Bataillon, 2023; Brewer & Davis, 2023; Kenya, 2023; Mulvehill & Tishler, 2022a; Smith, 2022) and taught a cannabis and sex research class for a university (S. Mulvehill, personal communication, June 21, 2023).

Researcher Assumptions

The researcher's assumptions for this observational study were as follows:

1. The researcher assumed that cannabis, frequently mentioned in the research literature as an agent to help women orgasm, also may help women with FOD (Lynn et al., 2019; Wiebe & Just, 2019). This assumption reflects reports that up to 41% of women have FOD (Laumann et al., 2005), a statistic unchanged for 50 years (Kontula & Miettinen, 2016). However, only one study controlled for the high percentage of women with FOD (Halikas et al., 1982), and no studies excluded women with FOD (Goode, 1969, 1970, 1972; Koff, 1974; Lewis, 1970; Kasman et al., 2020; Lynn et al., 2019, Moser et al., 2019, 2023)
2. The researcher assumed that women with FOD were more likely to use cannabis before sex. This assumption rested on research that found more than 34% of women use

cannabis before sex (Lynn et al., 2019) and that women who had difficulty orgasming have an easier time orgasming when using cannabis before sex (Wiebe & Just, 2019).

3. The researcher assumed that women with FOD used cannabis more frequently and were likelier to orgasm. Lynn et al. (2019) provided the basis for this assumption, noting that women who used cannabis more frequently were twice as likely to orgasm.
4. The researcher assumed that study participants were sincerely interested in participating in this study, used cannabis legally, and would honestly answer survey questions.

Definition of Key Terminology

Female Orgasmic Disorder (FOD)	The marked delay, infrequency, absence, or reduced intensity of orgasmic sensations for at least six months with the presence of distress (APA, 2013).
Female Orgasmic Disorder; Specifier "Acquired"	Describes a woman who previously had but no longer has orgasms (APA, 2013). The term "Acquired female orgasmic disorder" is used throughout this study.
Female Orgasmic Disorder; Specifier "Lifelong"	Describes a woman who has never had an orgasm (APA, 2013). The term "lifelong female orgasmic disorder" is used throughout this study.
Female Orgasmic Disorder; Specifier "Situational"	Describes women who can have orgasms in some situations but not others (APA, 2013). The term "Situational female orgasmic disorder" is used throughout this study.
Female Sexual Function Index (FSFI)	A 19-item questionnaire that measures sexual function in six different domains: desire, arousal, lubrication, orgasm, satisfaction, and pain (Rosen et al., 2000).
Pleasure Dissociative Orgasmic Disorder (PDOD)	A condition where an individual cannot feel pleasure from orgasm (Goldstein, 2010).
Post-Traumatic Stress Disorder (PTSD)	Persistent, distorted cognitions about the cause or consequences of a traumatic event(s) (APA,

	2013). Persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame) (APA, 2013).
Primary Anorgasmia or Primary Orgasmic Disorder	Describes a woman who has never had an orgasm. Primary anorgasmia and primary orgasmic disorder are terms often used in research to describe a woman who has never had an orgasm. The *DSM-5* lists the condition as Lifelong Female Orgasmic Disorder (APA, 2013).
Secondary Orgasmic Disorder	This term, found in the literature review, has multiple meanings (McCabe, 1991). This study uses the definition for a secondary orgasmic disorder that correlates to what the *DSM-5* refers to as Female Orgasmic Disorder, with the Specifier of "Acquired," meaning women who once had orgasms but do not any longer (APA, 2013). The term "Acquired female orgasmic disorder" is used throughout this study to describe secondary orgasmic disorder unless otherwise noted.

Organization of the Dissertation

This observational study consists of five chapters. Chapter 1 describes the study's general background, problem statement, overview, purpose, and focus. In addition, the researcher describes the significance of the study, outlines the research questions, and provides an overview of the methodology, the theoretical framework, the assumptions, and the overall organization of the study.

Chapter 2 comprehensively synthesizes the literature on cannabis, female orgasm, and FOD, the relationship between cannabis and female orgasm, the study's rationale, and the study's conceptual framework.

Chapter 3 outlines the study's research methodology by providing a rationale for the research approach, describing the research setting, population, and data collection and analysis

methods. This chapter provides a detailed description of all aspects of the design and procedures of the study.

Chapter 4 reports the study's main findings, including the presentation of relevant quantitative (statistical) and qualitative (narrative) data. Tables and figures illustrate and summarize all numeric information. The qualitative data organization reflects the themes and categories uncovered in the research. Direct quotations and paraphrasing of the narrative from the interviews provide in-depth context.

Chapter 5 discusses the study's findings related to the theoretical body of knowledge on cannabis and FOD. It addresses what the study's findings mean to clinical sexology in relation to FOD and suggests potential areas of future research.

Chapter 2: Literature Review

The following review of selected studies highlights findings most influential in the relationship between cannabis use and female orgasm. The review is organized first by introducing the literature review, followed by relevant cannabis research, female orgasm and FOD research, research studying the effects of cannabis use and female orgasm, a conceptual framework that provides the theoretical and methodological basis for the development of the study, and ending with a conclusion that summarizes the key points of the literature review.

This integrative literature review is "a form of research that reviews, critiques, and synthesizes representative literature on the topic of cannabis use and female orgasm in such a way that new frameworks and perspectives on the topic are generated" (Torraco, 2005, p. 356).

Introduction

This chapter provides an overview of the main themes discussed in the existing literature and highlights important research gaps concerning the relationship between cannabis, female orgasm, and FOD. Through the literature review, three key themes emerged: the capability of cannabis to enhance women's orgasms (Goode, 1969, 1970, 1972; Lynn et al., 2019; Kasman et al., 2020), which the researcher refers to as cannabis-assisted orgasm, its potential to alleviate difficulties in achieving orgasm (Wiebe & Just, 2019), and its historical use, supported by anecdotal evidence, in treating Lifelong FOD, also known as sexual frigidity or primary anorgasmia (Hermon, 1969; Lewis, 1970; Zinko, 2018).

Researchers have long suggested cannabis as a treatment for female sexual and orgasmic disorders (Hermon, 1969; Dawley et al., 1979; Gorzalka et al., 2010; Lynn et al., 2019). However, writings on cannabis use in the existing scholarly literature do not specify FOD treatment.

Critical gaps in the literature include the lack of consensus on a definition for female orgasm and the incongruence between the terminology used in research and in the *DSM-5* (APA, 2013) to define FOD. The *DSM-5* is the handbook used by healthcare professionals in the United States and much of the world as the authoritative guide to diagnosing mental disorders, including FOD.

For nearly 50 years, the definition of female orgasm has lacked consistency (Levin, 1981, 2004; Mah & Binik, 2001). Mah and Binik (2001) identified more than 25 definitions of orgasm from different authors. FOD is referred to in the literature under numerous names and is defined variously. Researchers consistently refer to primary and secondary orgasmic disorder, yet neither disorder appears in any editions or revisions of the *DSM* (APA, 1952, 1968, 1973, 1980, 1987, 1994, 2000, 2013). The current edition of the *DSM*, the *DSM-5*, defines FOD broadly to include women who never had an orgasm and those who have delayed or infrequent orgasms (APA, 2013). The *DSM-5* lists four "specifiers" to help differentiate various circumstances, i.e. if a woman has never had an orgasm. The specifiers, however, rarely appear in the research literature. Some researchers viewed FOD as one condition with a treatment listed for the disorder. In this example, the treatment is Directed Masturbation, without distinguishing that this treatment was for only one specifier, Lifelong FOD (Salmani et al., 2015). Lastly, FOD has received little attention since the 1980s (Marchand, 2020). The incongruence in the literature and lack of precise terminology made tracking the research record of women's orgasms challenging to follow, compare, and evaluate.

This literature review highlights the lack of validated treatments for the most common orgasm difficulty among women, Situational FOD (an inability to reach orgasm in specific situations such as masturbation or oral sex) (Krans, 2018), which is referred to in this dissertation

as FOD during partnered sex. As noted, only one validated treatment (Heiman & Meston, 1997) emerged in the last 50 years, Directed Masturbation, for women who have never had an orgasm (LoPiccolo & Lobitz, 1972).

FOD affects a significant portion of women globally, with estimates ranging from 41% (Laumann et al., 2005) to 42%, according to the *DSM-5* (APA, 2013). The *Dictionary of Epidemiology* defines a pandemic as a widespread epidemic that affects numerous individuals across international boundaries (Porta, 2008, p. 179). Given FOD affects up to 41% of women worldwide and the definition of a pandemic, it can be concluded that FOD meets the criteria for being classified as a pandemic (Laumann et al., 2005; Porta, 2008, p. 179).

New and lesser-known research topics cover many areas, from women experiencing various types of orgasms to a previously unrecognized orgasmic disorder called orgasmic anhedonia (also known as pleasure dissociative orgasmic disorder or PDOD). This disorder refers to the inability of an individual to derive pleasure from orgasm (Goldstein, 2010). Additionally, studies have discovered that women can experience orgasms without experiencing contractions (Kratochvil, 1994), have nipple orgasms (Kinsey et al., 1953), and experience orgasms solely through their imagination (Komisaruk & Whipple, 2005).

Following its discovery in the early 1990s, the endocannabinoid system has allowed researchers to explain how the psychoactive chemical in cannabis, Δ^9-Tetrahydrocannabinol, binds to the cannabinoid receptor one (CB_1) and cannabinoid receptor two (CB_2) in the body and brain. The endocannabinoid system regulates sexual behavior (Fuss et al., 2017). THC, the primary psychoactive chemical within cannabis (Getz & McKnight, 1972; Rexaline, 2019; Sayin, 2012; Szkudlarek et al., 2021), stimulates neurons in the brain's reward system and plays an essential role in the experience of sexual pleasure (Bhandari, 2019). THC reduces the activity

of the pre-frontal cortex (Baggio et al., 2020) and the amygdala (Rabinak et al., 2020), both of which are important to sexual functioning (Baggio et al., 2020; Rabinak et al., 2020).

Cannabis Usage

The influence of cannabis usage on sexual behavior appears dose-dependent in both men and women, although women more consistently report facilitatory effects (Gorzalka et al., 2010). While there is no standard dose of cannabis (Small, 2017), numerous studies have found that dosage significantly influences sexual functioning and satisfaction (Goode, 1969, 1970, 1972; Gorzalka et al., 2010; Kasman et al., 2020; Lynn et al., 2019; Palamar et al., 2016). The amount of cannabis consumed affects body sensations, length and intensity of sex, sexual dysfunction, and certain sexual behaviors (Palamar et al., 2016; Lynn et al., 2019; Kasman et al., 2020). Evidence suggests that cannabis benefits sexual functioning at low doses (Gorzalka et al., 2010) or low to moderate doses (Koff, 1974).

Cannabis History and Legalization

Since ancient times, humans have used cannabis to enhance sexual pleasure (Aldrich, 1977; Dwarakanath, 1965; Koff, 1974). Aldrich (1977) extensively documented the tantric use of cannabis in India from the 7th century onward to aid sexual pleasure and enlightenment. The Kama Sutra and Anaga Ranga eloquently detail Hindu sexual techniques, and the tantras transform such sexual practices into a means of meditational yoga (Russo, 2002). Furthermore, people in the Far East in the 19th century used cannabis to prolong coitus (Koff, 1974).

This literature review found no established criteria or standard for determining the conditions for use among the United States' contemporary legal medical marijuana programs. Not one of the 36 states and 4 territories with a medical marijuana program lists “sexual

disorders" for men or women nor "female orgasmic difficulty" or "female orgasmic disorder" as a condition for cannabis treatment (Halsey et al., 2021).

Although states do not list FOD as a condition for treatment with cannabis, doctors, medical clinics, and sex therapists recommend cannabis to their clients. Dr. Tishler, a cannabis specialist and chief operating officer of inhaleMD, Inc., recommends cannabis to his clients with FOD (inhaleMD, 2017). Canada House Clinics, formally Marijuana for Trauma, now with 16 locations throughout Canada, sponsored a two-part online article series on cannabis use for sexual disorders, including FOD (Dalziel, 2020a; Dalziel, 2020b). San Francisco-based sex therapist Diane Urman recommends cannabis for FOD, claiming that cannabis can unlock women's orgasms (Zinko, 2018). In addition, providers have designed applications to improve sexual wellness, including products that reduce anxiety or pain associated with sex (Dolgoff & Haase, 2023).

Cannabis and the Endocannabinoid System

The following section describes the human body's endocannabinoid system and discusses the CB1 and CB2 receptors. An examination of the cannabidiol (CBD) and THC relationship to cannabis's phytocannabinoids follows. THC's impact on the brain's reward system, the prefrontal cortex, the limbic system, altered states of consciousness, and time perception is summarized.

The Endocannabinoid System

The endocannabinoid system (ECS) is a biological system in the human body composed of endocannabinoids, receptors, and enzymes. Designed to keep the body in homeostasis (Raypole, 2019), the ECS is integral in regulating a broad range of biological functions, including sleep, mood, memory (Raypole, 2019), and sexual behavior (Fuss et al., 2017). The

ECS was discovered in the human body in the 1990s by researchers exploring THC (Matsuda et al., 1990).

A growing body of research on the ECS has found effective therapeutics for trauma and stress-related disorders (Gunduz-Cinar, 2020). Lutz (2009) claimed that the ECS offers numerous opportunities for pharmacological intervention in the context of mood disorders, such as anxiety disorders, PTSD, phobia, and depression. The problems of sexual functioning among patients with PTSD often draw little attention, even though scientific research confirms high rates of sexual dysfunctions (Letica-Crepulja et al., 2019).

Several lines of evidence point to the potential role of the ECS in female sexual functioning (Klein et al., 2012). Research shows a relationship between endocannabinoid concentrations in one's body and sexual arousal, leading researchers to believe that the ECS is associated with male and female sexual functioning (Klein et al., 2012). Researchers have suggested that endocannabinoids might play an important role in the sexual response cycle, leading to treatments of sexual disorders (Fuss et al., 2017; Lynn et al., 2019).

Endocannabinoids

Endocannabinoids, or endogenous cannabinoids, are molecules the human body produces (Raypole, 2019). Researchers have identified two key endocannabinoids: anandamide (AEA) (Devane et al., 1992) and 2-arachidonoylglyerol (2-AG) (Mechoulam et al., 1995). Anandamide plays a role in the neural generation of motivation and pleasure (Devane et al., 1992). 2-arachidonoylglyerol is involved in the human sexual response cycle (Fuss et al., 2017). The two endocannabinoids, AEA and 2-AG, bind to cannabinoid receptors (discussed in the section below) as a part of the ECS. AEA is found, for example, abundantly in chocolate (di Tomaso et

al., 1996) and is also known as the bliss molecule (Devane et al., 1992). Fuss et al. (2017) found that masturbation to orgasm significantly increased 2-AG levels.

CB1 and CB2 Receptors

Cannabinoid receptors are found throughout the human body (Raypole, 2019). The two primary cannabinoid receptors are cannabinoid receptor 1 and cannabinoid receptor 2, better known as CB_1 and CB_2 (Zou & Kumar, 2018). The cannabinoid receptors create a binding effect for cannabinoids within the body (Hanuš & Mechoulam, 2005).

The CB_1 receptors are distributed throughout the brain structures and position the endocannabinoid system to modulate sexual behavior (Gorzalka et al., 2010). CB_1 has also been found in serotonergic neurons that secrete the neurotransmitter serotonin, which plays a role in female sexual function (Lynn et al., 2020). Thus, activation of CB_1 may lead to increased sexual function (Lynn et al., 2020). Gorzalka et al. (2010) found that the CB_1 receptor facilitates ejaculatory processes in rats; this information may lead to a better understanding of how cannabis can treat sexual disorders (Moser, 2019).

The cannabinoid receptor type 2 (CB_2) is closely related to the CB_1 receptor. The CB_2 receptors are located throughout the body (Zou & Kumar, 2018) but do not appear as part of the central nervous system (Kaminski, 1998). CB_2 is the predominant receptor expressed within the immune system (Kaminski, 1998). Primary research on the functioning of the CB_2 receptor has focused on the receptor's effects on the immunological activity of leukocytes (Kaminski, 1998). Leukocytes are the cells of the immune system involved in protecting the body against disease. Agonists, the agents that interact with a receptor (Kenakin, 1987) targeting CB_2, have been proposed to treat or manage a range of painful conditions, including acute pain, chronic inflammatory pain, and neuropathic pain (Ehrhart et al., 2005).

Phytocannabinoids

Phytocannabinoids are cannabinoid molecules that come directly from the cannabis plant. The cannabis plant contains over 100 phytocannabinoids and more than 400 chemicals (Sayin, 2012). Two are well-known, CBD and THC (Hanuš & Mechoulam, 2005; Mechoulam et al., 2014). CBD and THC interact with the cannabinoid receptor, $CB_{1,}$ and cannabinoid receptor, $CB_{2,}$ found in the human body and brain but differ dramatically in their effects (Goldenberg, 2019).

The male and female cannabis plants produce different phytocannabinoids. The male cannabis plant, known by some as hemp, produces CBD and only trace levels of THC (Johnson, 2020). The female cannabis plant produces resinous flowers that contain THC, also known as the psychoactive ingredient that causes the "high" (Goldenberg, 2019).

Cannabidiol (CBD)

Cannabidiol does not create a psychoactive high and has minimal affinity for CB_1 or CB_2 receptors (Raypole, 2019). Experts are unsure how CBD interacts with the endocannabinoid system, but they know it does not bind to the CB_1 or CB_2 receptors like THC (Raypole, 2019). CBD exhibits its therapeutic benefits through indirect actions via activating non-cannabinoid receptor channels (Ibeas et al., 2015). Others say CBD primarily binds to the CB_2 receptors in the peripheral organs and skin and interacts with other receptors, such as serotonin (Rexaline, 2019). Many researchers believe CBD works by preventing endocannabinoids from being broken down. Others believe CBD binds to a yet-to-be-discovered receptor (Russo, 2016).

Δ9-Tetrahydrocannabinol (THC)

Δ9-Tetrahydrocannabinol is the most well-known psychoactive chemical in cannabis (Sayin, 2012). Once in the human body, THC interacts with the endocannabinoid system by

binding to receptors in the human body. THC can only bind to the CB_1 and CB_2 receptors (Zou & Kumar, 2018). This binding allows THC to affect the body and mind (Zou & Kumar, 2018). THC produces many of its psychoactive effects by engaging CB_1 cannabinoid receptors (Dhopeshwarkar & Mackie, 2014). Activation of CB_2 receptors does not appear to produce psychotropic effects (Deng et al., 2015).

THC's chemical structure is similar to the endocannabinoid produced in the body called anandamide, the chemical that transmits messages between nerve cells throughout the nervous system (Rexaline, 2019). AEA's chemical messages affect brain areas that influence pleasure, memory, thinking, concentration, movement, coordination, and sensory and time perception (Rexaline, 2019). Due to THC's similarity in the structure of AEA, the brain believes THC *is* AEA. To that end, just like AEA, THC binds with the cannabinoid receptor CB_1 like a key in a lock, making the body release dopamine (Rexaline, 2019) and activating the brain's reward system, which includes regions that govern the response to healthy pleasurable behaviors such as sex and eating.

THC and the Brain's Reward System

THC stimulates neurons in the brain's reward system and releases dopamine at levels higher than typically observed in response to natural stimuli (U.S. National Institute on Drug Abuse, 2021). This dopamine flood contributes to the pleasurable "high" when using cannabis (Kossen, 2016). Dopamine is a neurotransmitter the human body makes to send messages between nerve cells (Bhandari, 2019) and regulates movement, attention, learning, and emotional responses (Rexaline, 2019). Dopamine plays an essential role in the experience of feelings of pleasure, including sexual pleasure (Bhandari, 2019).

The mesolimbic dopaminergic system, a vital component of the mammalian brain's reward pathways (Salamone & Correa, 2012), has been the most famous neurochemical candidate in the past half-century for being a pleasure generator in the brain (Berridge & Kringelbach, 2015). The mesolimbic dopaminergic system also plays a central role in developing drug and alcohol addiction (Luscher & Malenka, 2011; Mameli & Luscher, 2011; Soderpalm & Ericson, 2013). When Parkinson's patients, whose disease decreases dopamine functioning, are given L-Dopa, the pharmaceutical drug to slow their tremors, they also experience stimulation of sexual arousal (Berridge & Kringelbach, 2015). Berridge and Kringelbach (2015) claim that today relatively few neuroscientists who study the effects of dopamine appear to assert in print that dopamine causes pleasure.

THC disinhibits sexually inhibited women (Goode, 1969, 1970, 1972; Kolansky & Moore, 1972; Sayin, 2012). Researchers examining the relationship between cannabis and sexual activity in the 1970s reported THC's disinhibiting effect on sexually inhibited women (Goode, 1969, 1970, 1972; Kolansky & Moore, 1972; Koff, 1974; Lewis, 1970). In more recent research, Tavares et al. (2018) reported such relationships less consistently and found that sexual inhibition is a vulnerability factor for female orgasmic problems. Ventegodt and Merrick (2008) claimed that the inability to experience orgasm arises from anxiety and fears of losing control and letting go. The literature did not indicate specific treatments for women suffering from the latter maladies.

Cannabis' disinhibiting features may explain why cannabis users report becoming less inhibited when using cannabis before sex (Bromberg, 1934; Goode, 1969, 1970, 1972; Jarvik & Brecher, 1977; Sayin, 2012), why women appear to benefit more from cannabis use before sex

than men (Gorzalka et al., 2010), and why researchers over the last 50 years have found women use cannabis before sex (Dawley et al., 1979; Koff, 1974; Lynn et al., 2019; Moser et al., 2023).

THC and the Prefrontal Cortex

Baggio et al. (2020) stated that THC inhibits neural activity in the prefrontal cortex, the brain area responsible for planning for the future and integrating behavioral alternatives with context and long-term goals. Neuroimaging studies have demonstrated that the prefrontal cortex and the amygdala, discussed in the next section, play an important role in sexual behavior (Chen et al., 2018). The pre-frontal cortex is central to high-level cognitive function and reflects categories, rules, and cognitive control, orchestrating thoughts and actions with internal goals (Miller et al., 2002). The prefrontal cortex can synthesize information from various brain systems and control behavior (Nauta, 1971). Clinical findings confirm that prefrontal functioning needs to be within an optimal range for sex to function normally (Rees et al., 2007), illustrating that normal brain function requires an optimal balance of brain systems (Ruesink & Georgiadis, 2017).

THC and the Limbic System

The oldest part of the brain, the limbic system, is the major primordial brain network (Rayner, 2016) and is often referred to as the "caveman" brain and is responsible for the "fight or flight" response (Hanson, 2012). Exerting a strong influence on behavior, often unconsciously, the limbic system is the seat of humans' value judgments (Dubuc, 2012). The limbic system comprises the hypothalamus, hippocampus, and amygdala (Rayner, 2016). This literature review only addresses the amygdala.

Researchers have found that THC reduces activity in the amygdala, a part of the brain located in the limbic system (Rabinak et al., 2020). Low doses of THC can produce anxiolytic

effects, reduce threat-related amygdala activation, and enhance functional coupling between the amygdala and the medial prefrontal cortex during threat processing. Raymundi et al. (2020) found that cannabis cannabinoids could play a role in extinguishing traumatic memories.

The amygdala is a part of the limbic system that attaches emotional significance to events and memories (Rayner, 2016), stores the visual images of trauma, and is associated with fear responses to threats (Rabinak et al., 2020). Studies show that the brain's amygdala activity increases at orgasm in women (Komisaruk et al., 2004; Komisaruk et al., 2010) but decreases during ejaculation in men (Holstege et al., 2003).

THC and Altered States of Consciousness

One of the most noticeable effects of THC is the intensification of ordinary sensory experiences and increased lucidity of perception (Tart, 1990). This altered state of consciousness deviates from the normal state of mind into hyper- and/or hypo-excitation states (Sayin, 2012). Altered states of consciousness are related to higher sexual responsiveness (Costa et al., 2016). Additionally, studies reveal an altered state of consciousness during women's orgasms (Komisaruk et al., 2006; Sayin, 2011; Sukel, 2011; Taylor, 2000).

Altered mental states characterized by an intense attentional focus on sensory and/or imaginary experiences are called "absorbed states" or states of "absorption" and play a role in sexual responsiveness (Costa et al., 2016). Swartz (1994) found that absorbed states are essential for orgasm in many if not all, women; however, absorbed states are not an obligatory feature of orgasm in most males (Swartz, 1994).

THC and Time Perception

THC can alter the perception of time (Tart, 1971; Sewell et al., 2012), which may prolong the feelings of sexual pleasure (Kasman et al., 2020). Sensory perceptions are sharpened,

including touch, smell, hearing, and taste. Hence the sexual sensory stimulants that lead to sexual arousal can be perceived to be enhanced (Sayin, 2012).

The Entourage Effect and the Multi-Modal Treatment

CBD and THC act synergistically, resulting in the "entourage effect" (Koltai & Namdar, 2020; Russo, 2019). Novicki (2019) describes the entourage effect as a phenomenon where the 400-plus compounds in cannabis synergistically affect the body. The entourage effect explains why cannabis is a "multi-modal treatment" (MacCallum & Russo, 2018), which cannabis can simultaneously treat multiple symptoms and conditions (MacCallum & Russo, 2018). In evaluating women with sexual dysfunction, Kasman et al. (2020) found that cannabis decreased sexual dysfunction; however, the reason women used cannabis had little to do with sexual functioning. Baggio et al.'s (2020) study also confirmed cannabis as a multi-modal treatment in evaluating medical cannabis impact related to behavioral changes in sexual activity.

Cannabis works at both the physiological and psychological levels to counteract the physical *and* emotional causes of male and female sexual dysfunction (inhaleMD, 2017). This comprehensive, holistic approach to sexual wellness addresses not only sexual dysfunction but, more importantly, its underlying causes – something that prescription drugs like Viagra and Cialis fail to do (inhaleMD, 2017). Other researchers and individuals found similar results in cannabis treatment for an ailment not affiliated with a sexual function yet yielding sexual functioning benefits. Prescribed cannabis to treat her depression, Ashley Manta discovered that cannabis helped her experience sexual pleasure and reduce sexual pain (Manta, 2021). Manta, a sexual assault survivor, founded CannaSexual™, a business promoting cannabis and sex, and built her international coaching and professional speaking business on promoting cannabis's

enhancing effect on sex and women's sexual functioning (Michelson, 2020). Kosiba et al. (2019) noted similar findings in patients using cannabis to reduce anxiety.

Cannabis Summary

Cannabis has been used throughout history to enhance sexual practices (Aldrich, 1977). The most well-known chemical in cannabis, THC, interacts with the human body's endocannabinoid system by binding with the CB_1 and CB_2 receptors causing a range of effects on the body and mind (Zou & Kumar, 2018). CBD, the other well-known chemical in cannabis, does not create a psychoactive high and does not bind to CB_1 or CB_2 receptors (Raypole, 2019). The endocannabinoid system and the two critical endocannabinoids in the human body, AEA (Devane et al., 1992) and 2-AG (Mechoulam et al., 1995), appear to be related to female sexual functioning (Klein et al., 2012). THC's chemical structure is similar to AEA and causes the body to release dopamine resulting in pleasurable feelings, including feelings of sexual pleasure (Bhandari, 2019).

The brain's prefrontal cortex and amygdala are important in sexual behavior (Chen et al., 2018). THC inhibits neural activity in the prefrontal cortex, the part of the brain involved in planning and decision-making (Baggio et al., 2020), and reduces amygdala activity, where fear and visual images of trauma are stored (Rabinak et al., 2020). Women's amygdala activity increases at orgasm (Komisaruk et al., 2004; Komisaruk et al., 2010) but decreases during ejaculation in men (Holstege et al., 2003).

THC intensifies ordinary sensory experiences and can alter the perception of time (Tart, 1990). This time alteration can lead to the perception that sexual arousal is enhanced (Sayin, 2012). THC also creates an altered state of consciousness (Sayin, 2012), whereas higher sexual responsiveness is related to altered states of consciousness (Costa et al., 2016). Women's orgasm

is considered an altered state of consciousness (Komisaruk et al., 2006; Sayin, 2011; Sukel, 2011; Taylor, 2000).

THC and CBD act synergistically within the body, creating an "entourage effect" (Koltai & Namdar, 2020; Russo, 2019). Simultaneously, treating multiple symptoms and conditions resulted in MacCallum and Russo (2018) referring to cannabis as a "multi-modal treatment."

Various authors found that cannabis yields sexual functioning benefits while treating other symptoms (Kasman et al., 2020; Kosiba et al., 2019). Cannabis reduced female sexual dysfunction (Kasman et al., 2020), reduced anxiety (Kosiba et al., 2019), increased sexual pleasure, and reduced sexual pain (Manta, 2021), while cannabis treated other symptoms. Cannabis affects the physical and emotional causes of male and female sexual dysfunction (inhaleMD, 2017), addresses the underlying causes of sexual dysfunction, and provides a comprehensive and holistic approach to sexual wellness (inhaleMD, 2017).

Female Orgasm

The following section reviews the literature on the definitions of female orgasms, multiple orgasms, and orgasms through imagination.

Female Orgasm Defined

There is no universally accepted definition of orgasm (Mah & Binik, 2001; Dubray et al., 2017). Levin (1981) offered 13 different definitions. Twenty years later, Mah and Binik (2001) repeated the exercise and listed 25. Despite recent (and past) attempts, the field of sexual research has failed to reach a universally satisfying definition of orgasm (Dubray et al., 2017). Masters and Johnson (1966), who, over 12 years, studied in the laboratory the orgasms of 382 women and 312 males, described a three-stage process for the female orgasm. Masters and Johnson (1966) defined orgasm as the release of sexual tension. In males, this took the form of

ejaculation; in females, orgasms presented themselves as involuntary vaginal muscular contractions (Masters & Johnson, 1966). Hite (1976) also regarded orgasm as an intense, brief feeling followed by contractions. Some women, however, reported experiencing an orgasm with no accompanying muscular contractions (Bohlen et al., 1982; Kratochvil, 1994; Meston et al., 2004a).

Two recent international consensuses on men's and women's orgasms departed from the previous focus on the characteristic muscular contractions (Dubray et al., 2017). Indeed, the 2nd International Consultation on Sexual Medicine, held in Paris in July 2003, defined women's orgasmic experience as a variable and transient peak sensation of intense pleasure creating an altered state of consciousness, usually accompanied by involuntary, rhythmic contractions of the pelvic striated circumvaginal musculature, often uterine and anal contractions, in addition to myotonia that resolves the sexually induced vasocongestion, and usually accompanied with a sensation of well-being and contentment. (as cited in Dubray et al., 2017, p. 256).

McMahon et al. (2007, p. 98) defined male orgasm as a "cerebral processing of pudendal nerve sensory stimuli resulting from increased pressure in the posterior urethra, sensory stimuli arising from the verumontanum and contraction of the urethral bulb and accessory sexual organs." Note that the women's orgasm definitions state that orgasm, "creates an altered state of consciousness" (as cited in Dubray et al., 2017, p. 256) and for men, orgasm involves, "cerebral processing" (McMahon, 2007, p. 98). Altered states of consciousness, THC, and female orgasm were discussed earlier in this literature review. A major problem defining women's orgasm is the emphasis on subjective or self-reporting, as opposed to objective physiological signs (Meston et al., 2004b).

Multiple Orgasms

Women report multiple orgasms despite the lack of a precise and consistent definition (Darling et al., 1991). Ellis (1936) proposed multi-orgasms as common among women. Kinsey et al. (1953) reported multi-orgasms in a limited number of women in rapid succession with lapses or seconds or minutes. Masters and Johnson (1966) proposed two distinct types of multiple orgasms, repeated and status orgasmus. The former defines repeated orgasms without post-orgasm loss of sexual tension, while the latter defines a series of rapidly recurrent orgasmic experiences or a single long continued orgasmic episode (Masters & Johnson, 1966). Amberson and Hoon (1985) claimed orgasms to be "sequential" when separated by several minutes.

Orgasms through Imagination

None of the orgasm definitions account for the report of orgasms from imagery alone or in women with complete spinal cord injury (Whipple & Graziottin, 2006). Whipple et al. (1992) reported orgasm in response to imagery without any physical stimulation and reported that physical genital stimulation was unnecessary to produce a state reported to be an orgasm. Ogden (1981) reported that 64% of the women in her study could experience orgasm from imagery as the only source of sexual arousal.

Female Orgasm Difficulty/Disorder (FOD)

FOD is defined in this section, followed by the causes of FOD and empirically validated treatments. This section on FOD closes with the psychological effects of FOD, followed by a summary of female orgasms and this FOD section.

FOD Defined

The term and the definition used to define female orgasmic disorders have changed several times since the publication of the first edition of *The Diagnostic and Statistical Manual*

for Mental Disorders in 1952 (APA). The term "female orgasmic disorder" replaced "inhibited female orgasm" in 1994 when the 4th edition of *The Diagnostic and Statistical Manual for Mental Disorders* was published (APA). The current definition of "female orgasmic disorder" appears in the *DSM-5* (APA, 2013) as reduced intensity, delay, infrequency, and/or absence of orgasm. These symptoms must persist for at least six months and may not be related to other physical or relational problems (APA, 2013). The presence of distress related to these symptoms is necessary to diagnose female orgasmic disorder (APA, 2013). The *DSM-5* outlines four specifiers for FOD:

Specify if:

Lifelong: The disturbance has been present since the individual became sexually active.

Acquired: The disturbance began after a period of relatively normal sexual functioning.

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners.

Situational: Only occurs with certain types of stimulation, situations, or partners.

The difference between the specifiers of "lifelong" and "generalized" is unclear in the *DSM-5* (APA, 2013). "Lifelong" states that a woman has never had an orgasm, while "generalized" means that an orgasm is never achieved under any circumstance or with any partner. The difference was indistinguishable in this literature review; therefore, this study did not consider Generalized FOD.

Since the publication of the *DSM-III* in 1980, researchers have used the terms "Lifelong" FOD and "Acquired" FOD. However, these terms have not consistently aligned with the research terminology. "Lifelong" FOD has the same definition as terms used in research, such as "primary orgasmic disorder" and "primary anorgasmia." The literature review found multiple definitions

for the terms “secondary orgasmic disorder” and “secondary anorgasmia, which are the terms still used in research (Whipple & Graziottin, 2006; Chapa, 2017). Libman et al. (1984) claimed that secondary orgasmic disorder in women is a label with considerable definitional confusion. Researchers recognize the problem with secondary orgasmic disorder having multiple definitions, but the issue remains unresolved.

One definition for secondary orgasmic disorder today is the specifier Acquired FOD, meaning women who used to orgasm but can no longer do so (APA, 2013). In the 1970s and 1980s, a definition for secondary orgasmic disorder was a woman who could not orgasm during intercourse without clitoral stimulation. Many studies were conducted during that time through partnered therapy to help women become orgasmic during intercourse without clitoral stimulation (Everaerd & Dekker, 1982; Kilmann et al., 1983; McGovern et al., 1975). In 1987, the *DSM-III-R* (APA, 1987) clearly stated that women who do not experience orgasm during intercourse without manual clitoral stimulation do not justify a diagnosis of Inhibited Female Orgasm, the then name of orgasmic disorders for women. The *DSM-III-R* further stated that not having an orgasm during intercourse is a normal variation of the female sexual response (APA, 1987). The researcher found that most research on secondary orgasmic disorder stopped after the *DSM-III-R* made this determination (APA, 1987).

The term “Situational” is precise as a “specifier” in the *DSM*, which means the orgasmic problem only occurs with certain types of stimulation, situations, or partners. It was found in this literature review that FOD with the specifier of “Situational” is the most common type of FOD (Krans, 2018). However, when conducting a literature review for studies conducted on FOD with the specifier of “Situational” with 432 related keywords, not one of those keywords was related to a study on “Situational” female orgasmic disorder, Situational anorgasmia, or Situational

orgasmic disorder, since the term, "Situational," was first used to define a sexual disorder in *DSM-III* in 1980 (APA, 1980). No empirically validated treatments for women with Situational FOD have emerged.

FOD Causes

Both physical and psychological factors can contribute to FOD (Pasqualotto et al., 2005). This literature review will focus on the psychological factors of childhood sexual abuse (CSA), anxiety, and PTSD. In analyzing women who had CSA, Kinzel et al. (1985) found that 21.8% of their sample had experienced CSA and sexual dysfunction. These women reported orgasmic disorders as their primary sexual concern (Kinzl et al., 1995). Anxiety can be a distraction that disrupts the processing of erotic cues by causing women to focus instead on performance-related concerns, embarrassment, and/or guilt (Meston et al., 2004). Until recently, researchers generally associated sexual dysfunction with exposure to sexual trauma rather than PTSD or PTSD pathophysiology (Laumann et al., 1999; Najman et al., 2005). Studies of nonsexual trauma are now also deemed to be associated with FOD (Letourneau et al., 1996; Yehuda et al., 2015).

FOD Treatment

No treatments in the literature review have emerged and been empirically validated for FOD since LoPiccolo and Lobitz (1972) developed directed masturbation in 1972. Furthermore, it is important to reiterate that directed masturbation is only for women with lifelong FOD, meaning women who never experienced an orgasm. Heiman et al. (1981) observed no primary treatment strategy for what was formally called a secondary orgasmic disorder, referred to as both FOD with the specifier of "Acquired" or "Situational." Heiman and Meston (1997) noted that secondary orgasmic disorder is a common complaint with a generally less optimistic prognosis than a primary orgasmic disorder.

This review found one new treatment for secondary orgasmic disorder since Heiman and Meston (1997) reviewed FOD treatment strategies in 1997. Pelvic floor muscle training has emerged as an effective therapy in treating women with secondary anorgasmia (Riccetto et al., 2010). However, the researcher found the definition of secondary anorgasmia confusing in the research (Riccetto et al., 2010), noting that the terminology used in research to define FOD is incongruent with the terminology used by the *DSM-5* (APA, 2013).

Prevalence of FOD

FOD is one of the most prevalent sexual dysfunctions in women (Heiman, 2000; Laumann et al., 2009; Simons & Carey, 2001). In 2009, Laumann et al. reported that a lack of interest in sex and an inability to reach orgasm were the most common sexual problems globally among women, ranging from 26 to 43% of the population. Researchers have estimated the prevalence of orgasm problems in the United States and Australia as between 21 and 29% of the population (Laumann et al., 2009; Richters et al., 2003). Laumann et al. (2005) surveyed 13,882 women in 29 countries and found that the inability to reach orgasm ranged from 17.7% in Northern Europe to 32.3% in East Asia to 41.2% in Southeast Asia. A study of 2,526 Iranian women estimated the prevalence of orgasmic disorder at about 37% (Safarinejad, 2006). A 12-month Australian study found that women in their 20s and 30s were just as likely as older women to develop sexual difficulties, namely a lack of interest in having sex and not finding sexual pleasure (Smith et al., 2012).

Psychological Effects of FOD

Many women with orgasm difficulties have reported feeling inadequate and abnormal (Fahs, 2014; Séguin & Milhausen, 2016; Séquin & Blais, 2019). Consequently, faking orgasm is relatively common and a valid alternative in cases of orgasmic absence (Muehlenhard &

Shippee, 2010; Séguin et al., 2015). This sexual difficulty could negatively affect women's quality of life, particularly personal distress and tension in their relationship (IsHak et al., 2010; Shindel et al., 2011).

Female Orgasm and FOD Summary

The field of sexual research does not have a universally satisfying definition of orgasm (Dubray et al., 2017). Mah and Binik, in 2001, reported more than 25 definitions of orgasm. Some women experience orgasms with involuntary vaginal muscular contractions (Masters & Johnson, 1966), while others do not (Bohlen et al., 1982; Kratochvil, 1994; Meston et al., 2004a; 2004b).

Multiple orgasms have similar definitional confusion (Darling et al., 1991). Ellis (1936) found multi-orgasms common, while Kinsey et al. (1953) found the condition confined to a limited number of women. Masters and Johnson (1966) proposed two distinct types of multiple orgasms, those reported to be in rapid succession within seconds (Kinsey et al., 1953) and those within minutes (Amberson & Hoon, 1985; Kinsey et al., 1953). Women also reported orgasms in response to imagery alone without physical stimulation and physical genital stimulation (Whipple et al., 1992).

The terms and definitions for female orgasmic disorders have changed multiple times since the first edition of *The Diagnostic and Statistical Manual for Mental Disorders* in 1952 (APA). The current definition of "female orgasmic disorder" appears in the *DSM-5* (APA, 2013) as reduced intensity, delay, infrequency, and/or absence of orgasm and must have lasted for at least six months, accompanied by distress. The *DSM-5* defines FOD using Lifelong, Acquired, Situational, and Generalized specifiers (APA, 2013). The causes of FOD include psychological factors of childhood sexual abuse (Kinzl et al., 1995), anxiety (Meston et al., 2004a; 2004b), and

PTSD (Laumann et al., 1999; Najman et al., 2005). Nonsexual trauma is also associated with FOD (Letourneau et al., 1996; Yehuda et al., 2015). First introduced almost half a century ago, Directed Masturbation (LoPiccolo & Lobitz, 1972) remains the sole scientifically proven therapy for FOD (Heiman & Meston, 1997). Psychological effects of FOD include women feeling abnormal and inadequate (Fahs, 2014; Séguin & Milhausen, 2016; Séquin & Blais, 2019), faking orgasm (Muehlenhard & Shippee, 2010; Séguin et al., 2015), and creating personal distress in women's relationships (IsHak et al., 2010; Shindel et al., 2011).

Cannabis, Women, and Orgasm

This section on cannabis, women, and orgasm reviews five topics. A review of literature related to cannabis and sex precedes cannabis's effects on female sexual function and dysfunction. A discussion of cannabis and women's orgasm follows. The section closes with a literature review on cannabis use frequency and its effect on female orgasms.

Cannabis and Sex

Cannabis use to enhance sexual enjoyment and pleasure is widely reported (Sumnall et al., 2006; Baggio et al., 2020). In addition, studies show that individuals who use cannabis before sex report increased pleasure and satisfaction (Lynn et al., 2019; Wiebe & Just, 2019).

Numerous reports suggest cannabis consumption prior to sexual activity in order to enhance sexual pleasure and performance. Lynn et al.'s (2019) quantitative study evaluated a cross-section of 373 healthy women presenting for routine gynecologic care and found that 34% reported using cannabis before sexual activity. Wiebe and Just's (2019) quantitative study of 216 respondents, of which 133 or 63% were female, found that 52.3% of the respondents said they used cannabis to alter their sexual experience. Weller and Halikas' (1984) qualitative study interviewed 97 adults in 1969-1970 and reinterviewed them in 1976-1977. The researchers found

that most cannabis users had used cannabis to prepare for intercourse on occasion, and 20% followed the practice regularly.

Cannabis, Female Sexual Function, and Dysfunction

Cannabis positively affects female sexual functioning (Sun & Eisenberg, 2017; Karasu et al., 2011; Lynn et al., 2019; Kasman et al., 2020). Tart (1971) noted in interviews with college students that orgasms are improved, arousal increased, and "sexual feelings are much stronger" (p. 141), leading to more satisfaction. Although this was a small, non-controlled qualitative study without detailed cannabis use characterization, it suggested cannabis's positive effect on female sexual function and was consistent with Kasman et al.'s (2020) findings 49 years later. Lynn et al. (2019) found that sexual desire was enhanced, and sexual pain decreased with cannabis use.

Cannabis and Female Orgasm

Research has consistently demonstrated that cannabis can positively affect female orgasm, as indicated by various studies (Goode, 1969, 1970, 1972; Kasman et al., 2020; Lynn et al., 2019; Moser et al., 2023; Wiebe & Just, 2019). Studies that suggested cannabis may hinder or inhibit the experience of female orgasm will be discussed further in this section.

Cannabis can ease orgasm difficulty. Wiebe and Just (2019) found that 50% of women who had difficulty orgasming had an easier time orgasming with cannabis. Cannabis also enhances the intensity of women's orgasms (Palamar et al., 2016; Wiebe & Just, 2019). Palamar et al. (2016) found that cannabis makes the experience of orgasm seem more prolonged and intense. Numerous reports support that cannabis enhances the quality of women's orgasms (Goode, 1969, 1970, 1972; Lynn et al., 2019; Weller & Halikas, 1984). Finally, women have reported more enjoyable orgasms (Goode, 1969, 1970, 1972; Lewis, 1970) and an increased

number of orgasms (Lynn et al., 2019; Weller & Halikas, 1984). Koff (1974) found that some women experienced multiple orgasms during sex following cannabis use.

Several studies reported that cannabis inhibited women's orgasm (Johnson et al., 2004; Koff, 1974, Palamar et al., 2016). However, these studies did not evaluate dosage, which is an important factor in sexual functioning and orgasm response (Gorzalka et al., 2010). Johnson et al. (2004) found that inhibited orgasm was associated with marijuana and alcohol use. According to Koff (1974), the use of cannabis can have physiological effects on both men's and women's sexual responses. In his study, he discovered that some females experienced a lack of orgasm after using cannabis in certain situations. However, he also observed cases where women reported having multiple orgasms after using cannabis. Interestingly, two women in his study mentioned that they had never experienced more than one orgasm during intercourse without being under the influence of cannabis. Palamar et al. (2016) found that some females reportedly could not orgasm on cannabis due to lack of focus and that some male and female participants took longer to achieve orgasm following cannabis use, possibly due to mindset.

Cannabis Use Frequency and Female Orgasm

The frequency of cannabis use is reported in research as positively correlated to sexual enjoyment and satisfaction (Sun & Eisenberg, 2017; Lynn et al., 2019; Wiebe & Just, 2019; Bhambhvani et al., 2020; Kasman et al., 2020). Frequency of cannabis use also correlated to an increased likelihood of experiencing orgasm (Lynn et al., 2019) and decreased female sexual dysfunction (Kasman et al., 2020).

The literature review found only one cannabis and sex study that evaluated how long women had been using cannabis. In their study conducted in 1984, Weller and Halikas examined experienced cannabis users who had been consuming cannabis for at least two years. They

discovered that both men and women reported positive effects of cannabis on orgasm. This finding aligns with Becker's 1953 study when he noted that individuals needed to learn to recognize the "pleasurable" effects of cannabis. Indeed, Becker noted that "marihuana-produced sensations are not automatically or necessarily pleasurable" (p. 53). However, neither study defined an appropriate duration required to find the effects as pleasurable. Additionally, researchers have correlated the frequency of cannabis use to women's more positive orgasm response (Goode, 1969, 1970, 1972; Kasman et al., 2020; Lynn et al., 2019), there is a lack of information regarding how long women had been using cannabis before experiencing enhanced orgasms.

Beasley (2019) used a quasi-experimental design and instructed female participants to report on two separate masturbation sessions over two weeks with and without immediate prior cannabis use. While Beasley (2019) hypothesized that women who used cannabis immediately before masturbation would experience greater pleasure and orgasm quality, the participants did not experience a noticeable difference in orgasm and pleasure between conditions (Beasley, 2019).

These findings of time and repetition of cannabis use and cannabis use before sex and masturbation had important implications for this study's design. Therefore, the researcher addresses the topic in Chapter 3 as part of the rationale for this study's research approach.

Cannabis, Women, and Orgasm Summary

Multiple sources confirm that cannabis is widely utilized to enhance sexual pleasure and improve sexual functioning (Kasman et al., 2020; Lynn et al., 2019; Weller & Halikas, 1984). Moreover, studies have revealed that cannabis can heighten the intensity of orgasms for women (Palamar et al., 2016; Wiebe & Just, 2019) as well as increase their frequency and quality (Koff,

1974; Lynn et al., 2019; Weller & Halikas, 1984). Additionally, research shows a positive correlation between cannabis use frequency and the likelihood of experiencing orgasm (Lynn et al., 2019), especially among individuals who struggle with FOD (Wiebe & Just, 2019). Women who use cannabis more frequently were more than twice as likely to experience orgasms and report satisfaction with them (Lynn et al., 2019). Recent studies such as those conducted by Kasman et al. (2020) and Lynn et al. (2019) did not measure the duration it takes for individuals to become frequent cannabis users or how long they have been using it before engaging in sexual activity. This information is crucial for the design of future studies on this topic.

Conceptual Framework

The conceptual framework describes and explains the concepts used in the study, their relationships with each other, and how they were measured (Benny, 2015). Furthermore, a conceptual framework is a theory-based collection of principles relevant to a particular study and developed as a result of a literature review (Marek, 2020). The goal of the conceptual framework is to categorize and describe concepts relevant to the study and map relationships among them (Rocco & Plakhotnik, 2009). Conceptualizing a study occurs by describing hypotheses and propositions of previous studies, defining terms, and clarifying assumptions and limitations while citing relevant work to build a rationale for a study (Merriam & Simpson, 2000).

Figure 1 notes the conceptual framework for this study. This study's pre-existing variable is FOD, measured by the FSFI orgasm subscale questions. The inclusion criteria for the study encompassed: cisgender females, at least 18 years of age, sexually active, and recent users of cannabis before partnered sex. The independent variables included age, cannabis reason for use, cannabis strain, education, ethnicity, FOD treatments and type, income, religion and devoutness, relationship status and satisfaction, sex frequency (solo/partnered), sexual abuse history, sexual

relationship status, and sexual orientation. The key independent variables were the length of time between cannabis use and partnered sex (i.e., months, years), and the frequency of cannabis use before partnered sex. The dependent variables were orgasm frequency, orgasm ease, and orgasm satisfaction.

Chapter Summary

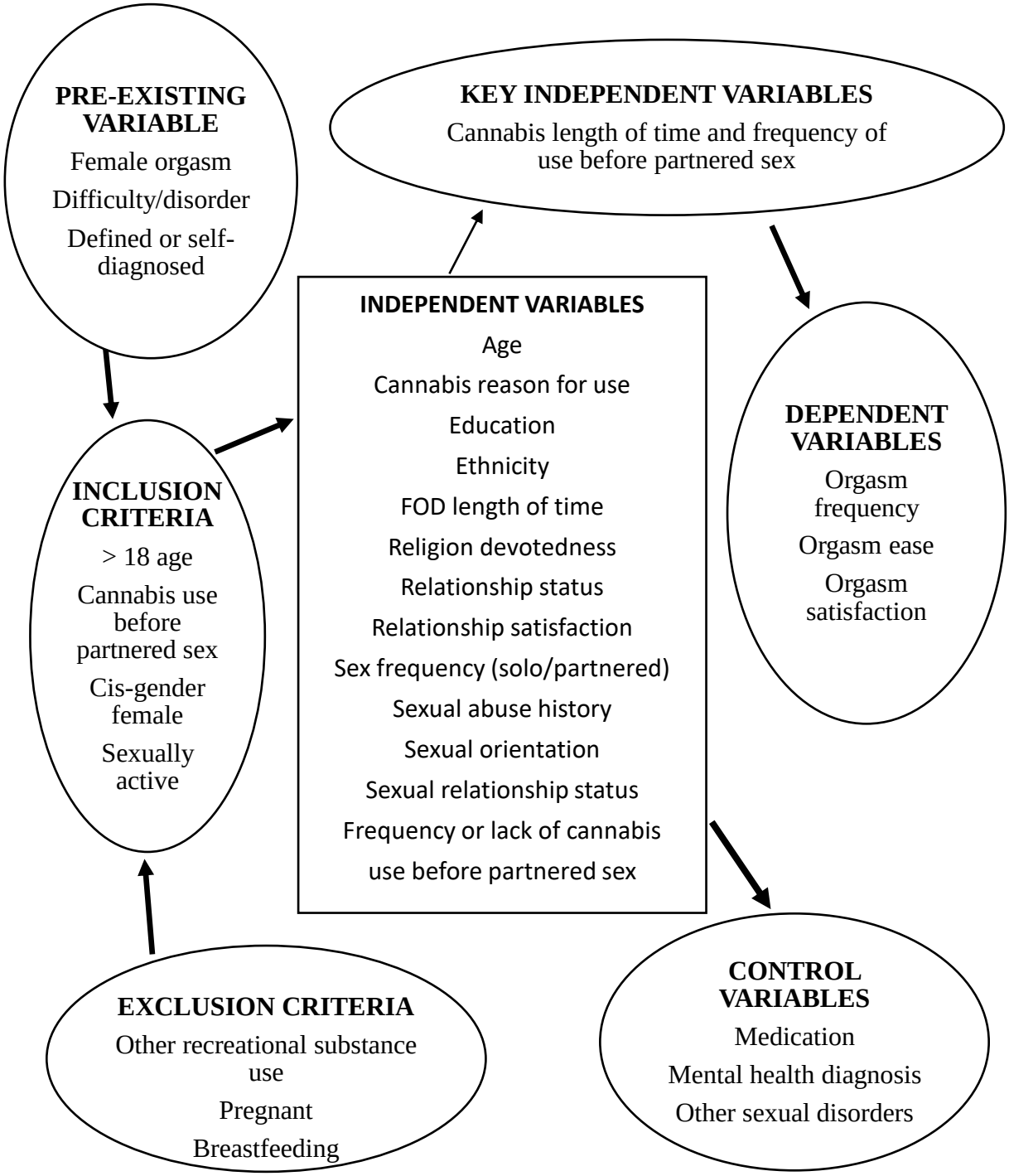
FOD affects up to 41% of women worldwide (Laumann et al., 2005), and the percentage of women suffering from FOD has remained unchanged for 50 years (Kontula & Miettinen, 2016). During that time, various researchers have suggested cannabis as a possible treatment for FOD and other sexual disorders (Bhambhvani et al., 2020; Dawley et al., 1979; Koff, 1974; Sun & Eisenberg, 2017). Even though anecdotes and research suggest that cannabis could be a treatment for women who have FOD, a literature review found no studies to evaluate cannabis' effect on FOD while consistently pointing to cannabis use enhancing women's orgasm (Kasman et al., 2020; Lynn et al., 2019; Wiebe & Just, 2019).

FOD has a well-documented link to anxiety (Meston et al., 2004a, 2004b; Pauls et al., 2005), childhood sexual abuse (Najman et al., 2005), PTSD (Letourneau et al., 1996), and cognitive distractions (Cuntim & Nobre, 2011; Dove & Wiederman, 2000; Adam et al., 2014). Studies show that THC, the psychoactive ingredient in cannabis, significantly reduces rates of anxiety (Cuttler et al., 2018; Raymundi et al., 2020), reduces traumatic memories related to trauma and PTSD by reducing activity in the amygdala (Raymundi et al., 2020), and reduces cognitive distractions by inhibiting activity in the prefrontal cortex (Baggio et al., 2020).

Cannabis research has regularly reported success in helping women (Lynn et al., 2019; Wiebe & Just, 2019) with orgasm difficulty (Wiebe & Just, 2019). A recent study on cannabis reported that 34% of women used cannabis before sex, and the women who used cannabis before

Figure 1

Observational Study's Conceptual Framework



sex were more than twice as likely to orgasm and report satisfactory orgasms (Lynn et al., 2019). Kasman et al. (2020) showed that cannabis decreased sexual dysfunction by as much as 21%. The literature review found no studies on the specific topic of cannabis and FOD.

Chapter 3: Methodology

Introduction

This chapter introduces the research methodology used for this mixed methods observational study that explored the relationship between cannabis use and FOD. This approach allowed a deeper understanding of women with FOD who use cannabis before partnered sex. This study moved beyond 50 years of cannabis and sex research, which stated that cannabis helped women orgasm by specifically evaluating women with FOD and explored if this study's results align with the results from previous research.

This chapter consists of nine sections outlining the methodology employed in this study. Initially, the chapter focuses on the research framework, including a detailed discussion of the mixed methods approach deployed. An exploration of the rationale behind the chosen research approach follows, addressing its suitability and alignment in addressing the research questions. Relevant methodological literature referencing cannabis use and female sexual functioning further supports and validates this rationale. The third section provides a comprehensive description and justification for selecting the specific research setting/context. In addition, the following section explains and justifies aspects related to the research sample and data sources. Included are outlines of ethical considerations pertaining to participants, detailing characteristics of the sample used, and justification for its size. Section five elaborates on data collection methods employed throughout the study, including a thorough justification for all data collection methods, including related tools, instruments, and procedures involved in collecting data. The section concludes by specifying when, where, how, and by whom these activities occurred. Section six describes and justifies all methods and tools incorporated in analyzing collected data, while section seven outlines the survey design. Section eight highlights trustworthiness issues by

discussing measures taken to ensure the reliability and validity of findings obtained from the analysis. Section nine addresses limitations and delimitations, identifying the study's potential weaknesses and scope. Lastly, a comprehensive summary provides an overview of all chapter sections, recapping and highlighting important points.

Research Framework

This study followed a research framework interconnecting the research paradigm, design, and methods (Creswell, 2014). The paradigm used for this study was a pragmatic deconstructive paradigm, which drove the decision to use mixed methods with a focus on "what works" as the truth regarding the research questions under investigation (Tashakkori & Teddlie, 2010). The pragmatic paradigm opened the door to multiple methods, worldviews, and assumptions (Creswell, 2014).

This observational study used a cross-sectional design (Setia, 2016). Study participants were selected based on the use of cannabis before partnered sex and the inclusion criteria of being at least 18 years of age, sexually active, and having used cannabis within the last month. The researcher then measured the outcome and the exposures, including participants' responses to a query about whether they had experienced FOD during partnered sex and the frequency of cannabis use before partnered sex (Setia, 2016). The study's exposures refer to any characteristic that may explain or predict the presence of a study outcome (Kestenbaum, 2019). The outcome refers to the characteristic being predicted (Kestenbaum, 2019). The researcher studied the association between these variables (Setia, 2016).

The mixed methods research approach (Tashakkori & Teddlie, 2010) provided for the collection, analysis, and "mixing" of quantitative and qualitative data during the research process

of a single study to understand a research problem more completely (Creswell, 2002). When combined, quantitative and qualitative methods complement each other and allow for more complete analyses (Green et al., 1989; Tashakkori & Teddlie, 1998). This study followed the suggested systematic framework of methodologist John Creswell (2014) for the mixed method research approach. This framework involved deciding on the priority, implementation, integration, theoretical perspective employed, and mixed method design strategies (Creswell, 2002).

Several types of mixed methods research design strategies were available. The three deemed best suited for this study were the explanatory sequential mixed methods model (Creswell, 2014), also referred to as a development design, an initiation design, or an expansion design (Greene et al., 1989). With the explanatory sequential mixed methods model (Creswell, 2014) development design (Greene et al., 1989), the researcher first conducted quantitative research, establishing a baseline for the study. The researcher analyzed the results and then built on the research to explain the results in more detail with qualitative research (Creswell, 2014). The explanatory mixed method model was sequential because the qualitative phase followed the initial quantitative phase. This mixed methods model is often used in disciplines with strong quantitative orientations, such as cannabis and sex research, to build on and explain the results in more detail with qualitative research.

The second mixed method research approach suited for this study was the initiation design (Greene et al., 1989). In a mixed method study with an initiation intent, the primary aim of combining quantitative and qualitative methods is to uncover paradox and contradiction (Greene et al., 1989). Paradox and contradiction were critical to this study because most

researchers found cannabis helps women orgasm (Lynn et al., 2019; Wiebe & Just, 2019), while several found cannabis inhibits women's orgasm (Johnson et al., 2004; Palamar et al., 2016).

Expansion was the third mixed method research design used in this study (Greene et al., 1989). Expansion design primarily extended the scope, breadth, and range of inquiry using different methods for different inquiry components (Greene et al., 1989).

The last central element in this study's framework was the specific research methods deployed. The research methods involved data collection, analysis, and interpretation (Creswell, 2014). This study used Qualtrics to collect data for the quantitative phase of the study, referred to as Phase 1, and conducted interviews using semi-structured questions for the qualitative phase of the study, referred to as Phase 2.

Research Approach Rationale

This section discusses the rationale for the chosen research approach–a mixed methods model using a survey and interviews to collect data and how the approach addressed the research questions. The rationale for using the mixed methods model was valuable from a pragmatic perspective because it enabled the study of issues related to real-world practice, such as exploring cannabis's effect on FOD. A purely quantitative study would have limited the study's capacity to evaluate the complex method for intensive study of this nature (Creswell, 2014) and was more likely to provide insights challenging to capture with quantitative measures by providing in-depth descriptions (Gephart, 2004) on the effect of cannabis on FOD.

In reviewing the literature, it was evident that survey instruments were consistently employed to gather data on cannabis and its impact on female sexual functioning in various human studies (Kasman et al., 2020; Lynn et al., 2019; Wiebe & Just, 2019). Studies have examined sexual function using validated and non-validated instruments (Kasman et al., 2020;

Lynn et al., 2019; Palamar et al., 2016). Before the Kasman et al. (2020) study, no study examined cannabis use and female sexual function using a validated survey instrument in a large sample size. Kasman et al. (2020) evaluated cannabis's effect on women's sexual functioning using the FSFI (Rosen et al., 2000).

The FSFI is a 19-question survey validated on clinically diagnosed samples of women with female sexual arousal disorder (FSAD), female orgasmic disorder, and hypoactive sexual desire disorder (HSDD) (Meston, 2003). Three of the 19 FSFI survey questions pertain to FOD.

Quantitative methods used to collect data to evaluate cannabis and sexual functioning included interviews, telephone surveys, and online self-report surveys. Palamar et al. (2016) interviewed, by telephone, 24 men and women recruited online via Craigslist in New York City. Smith et al. (2010) used a computer-assisted telephone survey to collect data from 8,656 Australians. Wiebe and Just (2019) used an online questionnaire with a convenience sample of people who had experience with cannabis. Moser (2019) developed an online survey using the online software Qualtrics to gather data from 811 men and women throughout the United States. This study conducted telephone interviews with women who shared their contact information in the online survey.

This study's mixed methods approach supported the study's research questions in three ways. First, the survey design correlated to the research questions. The researcher first asked participants specific questions related to cannabis use and orgasm to help the researcher answer the main research question, "Does cannabis help women orgasm who have FOD?" Second, text boxes within the survey allowed participants to write about their experiences not identified in the survey. The participants' answers identified sub-questions that arose in the qualitative phase of

the study. Third, the interview with participants helped answer the sub-research questions and understand cannabis's effect on women's orgasm and FOD.

Research Setting/Context

The research setting encompassed recreational and medical cannabis users within the United States. The Qualtrics survey software did not geographically restrict participants. Hence, it is plausible that respondents from countries outside of the United States participated in the study.

The researcher received approval from the Institutional Review Board (IRB) of the International Institute of Clinical Sexology (IRB-approval letter is in Appendix A). Once the IRB received approval, the researcher emailed letters to the approved organizations to facilitate their participation in collecting data. The researcher employed various distribution methods such as social media and physical means like postcards to stimulate interest in participating in the study. In support of this objective, approximately 6,000 postcards with a hyperlink and/or QR code were distributed throughout South Florida, targeting various establishments associated with cannabis, such as medical offices encompassing gynecology clinics, vape shops, dispensaries offering cannabis merchandise, and even adult toy stores alongside lingerie shops. (Appendix B contains the letter sent to the aforementioned associations. Appendix C contains the recruitment message.)

Research Sample and Data Sources

A detailed description of the research sample and data sources was provided, including an explanation and rationale for the sample selection, its attributes, size, and the ethical aspects concerning the participants. Convenience sampling was the research method chosen to conduct

the survey. Convenience sampling, or availability sampling, is a method for selecting participants based on their ready availability (Frey, 2018).

The survey was available between March 24, 2022, and November 18, 2022. Responses numbered 1,037, which resulted in 387 usable surveys, which comprised the sources for the data collected. Recent cannabis and sexual function studies that used surveys to collect data provided a basis for the number of surveys to collect and time collection approximations for this study. Lynn et al. (2019) collected 373 surveys over 11 months within a single academic, obstetrics and gynecology practice. Kasman et al. (2020) collected 452 surveys over five months, using an online survey made available and advertised through multiple locations of a single-partner cannabis dispensary. Wiebe and Just (2019) collected 376 surveys using various methods over an undisclosed timeframe and analyzed the results of 216 surveys, collecting data via an online survey.

The ethical considerations protect the dignity of participants and the publication of the information in the research (Vanclay et al., 2013). The ethical considerations related to this study are voluntary participation, informed consent, confidentiality, anonymity, potential harm, and respect for privacy (Vanclay et al., 2013). Data privacy was also a consideration; the following section addresses this issue.

This study upheld the ethical principle of "do no harm" by obtaining informed consent and safeguarding participant anonymity and confidentiality (Vanclay et al., 2013). Participation in this research endeavor was voluntary, as individuals willingly completed the online survey after giving explicit consent. Informed consent involves ensuring that participants fully comprehend the nature of their involvement and obligations within the study (Manti & Licari, 2018). Participants were provided with comprehensive information about the study prior to

deciding whether to participate (see the first paragraph of the survey, Appendix D). For detailed information regarding informed consent, see the IRB-approval letter (Appendix A). Furthermore, participants retained the right to withdraw from participation at any time.

The confidentiality and anonymity of the participants' responses were strictly maintained. During the qualitative phase of the research, the researcher took great care to ensure that participants' identities and personal information remained protected. Privacy, which encompasses an individual's desire to control access to their personally identifiable information, was a key consideration throughout the study (Sieber, 2001). The researcher respected each participant's right to withhold any information they did not wish to disclose.

Data protection measures safeguarded the privacy of all collected data (Flick, 2018). The online software provider used for this study, Qualtrics, adheres to relevant data privacy laws as a responsible data controller.

Data Collection

The researcher employed two data collection methods in this study: a survey for the quantitative phase and interviews for the qualitative phase. The online survey offered a user-friendly experience, with an optimal length and quick completion time, while promoting the survey through social media also allowed for a broad reach. (Appendix D provides a copy of the survey.)

The rationale for collecting the data via an online survey was that online surveys have significant advantages over other formats (Evans & Mathur, 2005). Major strengths of using an online Internet survey include convenience, speed, timeliness, and ease of data entry and analysis (Evans & Mathur, 2005). As Hogg (2003) notes, respondents can take online surveys whenever they feel it is convenient. Online surveys are administratively time-efficient, minimizing the time

to get a survey into the field and begin data collection (Evans & Mathur, 2005). The ease of data entry and analysis is such that once the last questionnaire for a study is submitted, the researcher instantaneously has all of the data stored and categorized in a database (Wilson & Laskey, 2003).

A potential weakness of online surveys is that they are impersonal (Evans & Mathur, 2005) and can limit the ability to probe in-depth (Scholl et al., 2002). The qualitative phase of the study served to offset this weakness. The interviews conducted during the qualitative phase of the study provided a subset of participants with an opportunity to participate in an interview to assist in identifying additional research themes.

During the qualitative phase of this study, the researcher conducted interviews, which is the most common format of data collection in qualitative research (Jamshed, 2014). Qualitative research methodology is particularly well-suited when the researcher investigates a new field of study or intends to ascertain and theorize prominent issues (Corbin & Strauss, 2008; Creswell, 2007). The researcher conducted interviews in this study via a telephone call or a face-to-face Zoom video session using a combination of open-ended and semi-structured questions. The questions allowed for a clearer understanding of cannabis's effect on FOD, including the effect, if any, on the three types of FOD: Lifelong, Acquired, and Situational. Interviews permitted research participants to "reveal more than can be detected or reliably assumed" (Simons, 2009, p. 43) and provided avenues through which multiple realities were constructed (Stake, 1995).

Data Analysis Methods

Quantitative Data

The researcher employed three distinct methods to analyze data: statistical analysis, content analysis, and thematic analysis. The quantitative phase of the study utilized descriptive and inferential statistics and parametric and non-parametric tests (Terrell, 2021).

Employing multiple statistical analysis techniques permitted valuable insights into the data collected. These methods allowed for meaningful conclusions by examining patterns within their samples and making connections beyond those specific cases through inference techniques that offered broader applicability across populations. Various methodologies helped researchers comprehend complex information while providing solid foundations for drawing reliable conclusions based on empirical evidence obtained through rigorous investigation.

To identify differences in the nominal data, the researcher utilized a McNemar test (Beukelman & Feldman, 2021). The nominal data focused on discrepancies in orgasm frequency based on whether cannabis was consumed before engaging in sexual activity. This analysis specifically examined whether women experienced orgasms when cannabis was present compared to when it was not. As a result, changes in paired orgasm responses were measured both with and without the use of cannabis.

To ascertain whether the sample observations originated from a population with a specific mean, the researcher employed a one-sample *t*-test. In addition, the test also assessed the frequency of orgasms as it related to cannabis consumption before sexual activity.

To determine if there were any statistically significant differences between the means of two or more independent groups, the researcher employed a one-factor ANOVA and Tukey's HSD (Beck, 2023). These analyses evaluated orgasm satisfaction based on the FSFI sub-scale questions.

The researcher used a one-factor ANOVA to evaluate any differences by age, education, income, masturbation frequency, mental health diagnosis, prescription medication use, relationship status, relationship satisfaction, religion, sexual abuse history, sexual orientation, and sexual relationship status in the subject's orgasmic response to cannabis use before sex. The

researcher also deployed a one-factor ANOVA statistical method to evaluate cannabis use frequency before sex, length of time using cannabis before sex, primary intake method, and reason for cannabis use in the subject's cannabis use behavior.

A one-factor ANOVA and Tukey's HSD were also used to evaluate partnered sex frequency. Because 78% of the study's participants were white, the researcher combined all non-white participants into an "other" group for statistical analysis. A *t*-test followed by an F-test assisted in the determination of whether non-white ethnicity was of statistical significance in the study.

Qualitative Data

The qualitative phase of the study used content and thematic analysis. Research using qualitative content analysis focuses on the characteristics of language as communication with attention to the content or contextual meaning of the text (Tesch, 1990). This study used text data obtained from the narrative responses of the interviews (Kondracki et al., 2002). The content analysis process consisted of coding raw messages according to a classification scheme (Kondracki et al., 2002) and organizing the communication content to identify, index, or retrieve content relevant to research questions (Shepherd & Achterberg, 1992). Content components may be words, phrases, theories, topics, concepts, or other characteristics (Lune & Berg, 2017). Ultimately, this systematic and thorough evaluation permitted conclusions regarding such factors as the presence or absence of particular ideas, theories, or biases and the scope of topics, contradictions, or myths (Kondracki et al., 2002).

Thematic analysis is a method for identifying, analyzing, and reporting patterns or themes within data (Braun & Clarke, 2006). Identified patterns should emerge from events subjected to content analysis (Mendy, 2020). An essential question in coding themes is what counts as a

pattern/theme (Braun & Clarke, 2006). The coding of a theme is not necessarily dependent on quantifiable measures but rather on whether a theme captures something important related to the overall research question (Braun & Clark, 2006).

Themes or patterns identified within data should emerge in one of two primary ways in thematic analysis: in an inductive or "bottom-up" manner (Frith & Gleeson, 2004) or in a deductive or "top-down" way (Boyatzis, 1998). This study used an inductive approach to identify strong links to the data (Patton, 1990). An inductive analysis provides coding suggestions without requiring the data to fit into a pre-existing coding framework or reflect the researcher's assumptions (Braun & Clark, 2006). In other words, if the data have been collected specifically for the research (e.g., via interview), any preconceived themes may bear little relation to the specific questions asked of the participants (Braun & Clark, 2006). In contrast, a "theoretical" thematic analysis or deductive approach reflects the researcher's theoretical or analytic interest (Braun & Clark, 2006).

Survey Design

This study's survey questions aligned with the study's overall purpose and correlated to the study's pre-existing variable, inclusion/exclusion criteria, and independent and dependent variables (Appendix C). The study's pre-existing variable was women with or without self-reported or diagnosed FOD. The independent variables included demographic factors such as age, race, income, marital status, education, and sexual behavior variables such as partnered sex frequency, and cannabis use behavior such as primary intake method and frequency of cannabis use before partnered sex.

The only validated instrument to measure FOD is the 19-question FSFI (Rosen et al., 2000). The FSFI was normed and validated on a sample of women with clinically diagnosed

female sexual arousal disorder, now referred to in the *DSM-5* (APA, 2013) as female sexual interest/arousal disorder (FSIAD). In 2003, Meston validated the FSFI to measure hypoactive sexual desire disorder and FOD. Wishing only to measure FOD and therefore only using the FSFI's orgasm subscale questions, the researcher contacted Dr. Cindy Meston, who validated the FSFI for FOD. Meston advised to "report the means in terms of the standard deviations (SDs) away from the norm and compare them to the mean for FOD in order to measure FOD" (personal communication with Dr. Cindy Meston, April 30, 2021). To capture normative data, the researcher consulted with Harvard doctor and cannabis specialist Jordan Tishler to formulate specific survey questions to capture normative data (personal communication with Jordan Tishler, May 3, 2021).

Pretesting is essential to survey research, allowing researchers to reflect on and revise their surveys (Ruel et al., 2016). The goal of pretesting focuses on identifying and fixing problems for respondents and interviewers concerning question content (Hu, 2014). Pretesting is crucial in survey research as questionnaire designers try to identify potential problems with the instrument and reduce measurement error sources (Hu, 2014). The rule of thumb is to test the survey on at least 12 to 50 people (Sheatsley, 1983; Sudman, 1983). The survey for this study received pre-testing through the researcher's social media account.

This study used a multivariable model in the survey design, controlling for demographic and socioeconomic characteristics to evaluate the relationship between cannabis use and FOD (Sun & Eisenberg, 2017). The survey sought to identify attributes of a larger population from a small group of individuals (Fowler, 2009). The survey was cross-sectional, with the data collected at one time.

Issues of Trustworthiness

The researcher examined the study's trustworthiness in relation to quantitative and qualitative approaches. This section focuses on measures to ensure the study's credibility (validity) and dependability (reliability).

Limitations

Limitations of the study include:

1. Since the quantitative phase of the study used convenience sampling, the researcher could not ensure that the sample represented the population (Creswell, 2002). The sample selected for this study specified women, at least 18 years of age, who used cannabis within the last 30 days, were sexually active, used cannabis before sex, and either had or had not self-reported or diagnosed FOD.
2. The study may have limited generalizability since it was conducted in partnership with cannabis associations and dispensaries, gynecological and sexual health associations, and promoted through social media.
3. The study only measured the participants' responses at a specific time.
4. The study evaluated women's perceptions of their orgasm difficulty and orgasm ability with and without cannabis before sex.

Delimitations

Delimitations of the study include:

1. Women learned of the survey and the study through cannabis associations and dispensaries, gynecological and sexual health associations, or social media. The uniqueness of this study within a specific context makes it difficult to ensure its replicability with precision in another context (Creswell, 2002).

2. Participants' responses were reflections and perceptions confined to cannabis' effect on their orgasm experience.
3. The study provided only one perspective on cannabis's effect on women's orgasm–cannabis's effect on FOD; other types of sexual dysfunction were not a part of the study.
4. Due to the shame often associated with FOD (Shadbolt, 2009) and women being uncomfortable talking about their orgasm difficulty (Pasqualotto et al., 2005), potential participants who experienced FOD may not have chosen to participate in the survey.
5. This study specifically does not address the broader issue of cannabis use disorder or other potential side effects of what is believed primarily to be the result of misuse or excessive use of cannabis. This study focuses on cannabis use in a controlled professional setting that emphasizes open communication. Any patient who has concerns regarding side-effects of cannabis should bring the matter to the attention of their therapist or physician (Robinson et al., 2022).

Chapter Summary

This study used a pragmatic paradigm that advocated using mixed methods in research. A mixed methods research approach included quantitative and qualitative data collection, analysis, and interpretation. The quantitative portion of the study, Phase 1, used Qualtrics survey software. The qualitative phase of the study, Phase 2, consisted of participant interviews.

During the quantitative phase of the study, the researcher collected data in partnership with cannabis associations and dispensaries and gynecological and sexual health associations while being promoted through social media. The research sample consisted of sexually active

women at least 18 years of age who used cannabis for medicinal or recreational purposes and used cannabis before partnered sex. The survey aligned with the study's overall purpose using the orgasm subscale of the validated FSFI to measure FOD. Women in the researcher's social and professional network pre-tested the survey. Data collection took place over approximately eight months. Completed and returned surveys numbered 410; 387 were usable in the final analysis.

The researcher conducted interviews with 40 survey participants who provided contact details. Of those interviewed, 20 reported FOD, and 20 reported not having FOD. Structured and semi-structured interview questions formulated following the data collection and statistical analysis of the study's quantitative phase provided the basis for the interview questions. The researcher fully respected the ethical considerations related to the study.

Data were analyzed using statistical methods for the study's quantitative phase and content analysis and thematic analysis for the study's qualitative phase. The researcher cannot guarantee that the sample represented a general population (Creswell, 2002). The study's delimitations included women's perceptions of their orgasms, confined to their personal experiences of cannabis' effect on their orgasm experience with and without cannabis use before partnered sex.

Grounded theory provided the parameters for discovering or constructing theory from the data on cannabis and female orgasm (Chun et al., 2019). The researcher conducted all procedures carefully to produce practical and relevant results (Chun et al., 2019).

Chapter 4: Results

Introduction

This chapter presents the results of the mixed methods cannabis and female orgasm observational study conducted between March 24, 2022, and February 28, 2023. The author designed a detailed online survey consisting of 41 thoughtfully crafted questions developed in the context of empirically supported covariates of FOD to carry out the quantitative aspect of this mixed methods study. The survey included the three FSFI orgasm subscale questions with and without cannabis use before partnered sex, providing a within-study design that recognized participants as their own control group. The online survey distribution commenced on March 24, 2022, allowing for a substantial sample size and a diverse range of participants. Additionally, the researcher distributed 6,000 postcards primarily to South Florida businesses and medical offices. These methodological choices ensured that the study encompassed a range of perspectives and experiences.

To obtain more personal and intimate perspectives, the author initiated the qualitative component of the study on October 25, 2022, by beginning one-on-one interviews with 40 women who shared their contact details in the survey. Among these, 20 participants reported FOD during partnered sex, while 20 did not encounter such difficulties. The interviews employed a combination of structured and semi-structured questions, enabling the participants to express their experiences and perspectives comfortably and candidly. Melding quantitative and qualitative methodologies allowed the author to understand the complex relationship between cannabis consumption and female orgasm, particularly in women who reported FOD.

The quantitative analysis occurred in three distinct phases; qualitative analysis constituted a single phase. Data preparation of the quantitative data comprised the first phase, which

involved refining and organizing the collected quantitative data. Careful examination was conducted on the data collected between November 19, 2022, and December 20, 2022, while eliminating incomplete surveys and those that failed to meet the inclusion criteria.

Following the data preparation phase, the next step involved evaluating various statistical methods suitable for conducting comprehensive data analysis. This crucial statistical methods evaluation phase spanned from December 26, 2022, to February 14, 2023. The final phase of quantitative data analysis commenced upon choosing selected statistical methods to evaluate two distinct data sets; "all women," which included women with and without FOD (N = 387) and "women with FOD" (N = 202).

Between February 15, 2022, and April 19, 2023, the researcher used the following statistical methods: one-factor ANOVA, one sample t-test, t-test, F-test, Tukey's HSD, and McNemar's test on the quantitative data. The qualitative analysis of interviews took place using thematic and content analysis between April 20, 2023, and May 12, 2023. The researcher also analyzed comparative data of women who reported FOD (N = 202) and women who reported not having FOD (N = 185).

Fourteen sections present the quantitative results. The sections are as follows. First, the author presents a data summary section followed by the primary outcomes and the results of the orgasm sub-scale questions of the Female Sexual Function Index with and without cannabis use before sex, orgasm frequency, orgasm difficulty, and orgasm satisfaction; the frequency of cannabis use and length of time using cannabis before sex follows. The following sections include reasons for using cannabis and cannabis intake methods, orgasm difficulty and "other" sexual issues, demographics and relationship status, mental health and prescription medication, sexual abuse history, partnered sex frequency, masturbation frequency, and additional comments

by survey respondents. Strengths and limitations of the quantitative data results complete this section.

The qualitative results comprise 23 sections. The sections include preferred cannabis strains and cannabis use behavior, including dosage, intake methods, and timing of cannabis use before sex. Also included are thematic and content analyses of interviewees' more detailed responses to questions and discussions regarding what prompted women to use cannabis before sex, the effect cannabis had on their orgasm, how long it took to notice if cannabis affected their orgasms, and women describing their orgasm difficulty. Other topics addressed in the qualitative results section include a thematic analysis of treatments sought by women who had orgasm difficulty and the effectiveness of the treatment, women without FOD describing if and when they ever had FOD, and suggestions by women without FOD that may assist women recovering from such difficulty.

Quantitative Results

Survey Data Summary

Between March 24 and November 18, 2022, the author solicited survey participation to collect quantitative data for the study by marketing the survey's availability through social media and 6,000 postcards distributed primarily through South Florida business establishments. (Appendix E presents a copy of the postcard distribution locations, postcards, and social media posts.) The researcher received 1,037 survey responses. Forty-one percent (n = 427/1037) arrived over the seven months between March 24, 2022, and October 25, 2022. Forty-five percent (n = 467/1037) of all responses were collected on October 27, 2022, as the survey went "viral" on Reddit. The remaining surveys, 13.5% (n = 140/1037), were collected between October 26 and November 18, 2022.

Forty percent of survey respondents (n = 417/1037) failed to meet the inclusion criteria for the following reasons: 41 respondents reported they were pregnant or breastfeeding, 94 respondents reported that they used cannabis more than a month ago, 56 respondents reported they did not use cannabis, 143 respondents reported they used other recreational substances besides cannabis in the last month (mushrooms, ecstasy, cocaine, heroin, LDS, morphine, etc.), and 83 respondents reported partnered sex more than a month ago. Incomplete surveys numbered 210. Of the remaining 410 completed surveys, 17 respondents did not use cannabis before partnered sex, and six were unclear about having female genitalia. The result was 387 valid surveys (94%, N = 387/410).

The question relating to FOD was subjective. After evaluation, the researcher moved the responses of 17 women from their initial response of reporting FOD to the category that best reflected their response wording, resulting in 52% (202) of survey respondents responding "yes" to having FOD during partnered sex and 48% (N = 185) responding "no" to having FOD during partnered sex.

The researcher analyzed the data responses using one-way ANOVA, one-sample *t*-test, *t*-test, F-test, Tukey's HSD, and McNemar's test to evaluate paired and unpaired responses to orgasm response with and without cannabis use and variables, including demographic data, sexual behavior, and cannabis use. The stratified analysis consisted of women with FOD during partnered sex, also referred to as Situational FOD (52%, N = 202), and "all" women (N = 387). All resulting P values were two-sided P values. Those values, less than or equal to .05, were considered statistically significant.

Primary Outcomes

The primary outcomes revealed that for the 52% of the women in the study with FOD (N = 202/387), cannabis use before partnered sex increased orgasm frequency by 72.8% (n =147/202, $p < .001$), improved orgasm satisfaction by 67% (n = 136/202, $p < .001$) or made it easier for 71% of women to orgasm (n = 132/202, $p < .001$). Statistically significant results for these three categories were also evident for the group of "all" women (N = 387) who did and did not report FOD.

Frequency of cannabis use before partnered sex correlated with increased orgasm frequency for women with FOD (N = 202, $p < .001$), meaning that women who reported FOD and who used cannabis more frequently had a more positive orgasm response when using cannabis before sex. The frequency of cannabis use before partnered sex was also significant for "all women," and "women with and without FOD" (N = 387, $p < .001$).

Reasons for cannabis use before partnered sex were statistically significant and resulted in a more positive orgasm response for women with FOD, with use for pain or sex having the most favorable results (N = 202, p = .022). The reasons for cannabis use before partnered sex were also statistically significant for "all women" and "women with and without FOD" (N = 387, $p < .001$).

"All" women, with and without FOD, who reported a mental health diagnosis experienced a statistically significant more positive orgasm response when using cannabis before sex (n = 231/387, p = .004). Additionally, "all" women, with and without FOD, who reported a sexual abuse history experienced a statistically significant more positive orgasm response when using cannabis before sex (n = 125/387, p = .003).

Results of the Female Sexual Function Index (FSFI) Orgasm Sub-scale Questions

Of the 52% of women who claimed orgasm difficulty (N = 202), 72.8% (n = 147/202, p < .001) reported increased orgasm frequency; 67% (n = 136/202, p < .001) reported increased orgasm satisfaction, and 71% (n = 143/202, p < .001) reported increased orgasm ease when using cannabis before sex. Figures 2, 3, and 4 illustrate the data on these findings. Of those women who responded "almost never or never orgasm" without cannabis, 28.7% (n = 58/202, p < .001) experienced an orgasm when using cannabis before sex.

Figure 2

Orgasm Frequency for Women With FOD, With and Without Cannabis Before Partnered Sex (p < .001)

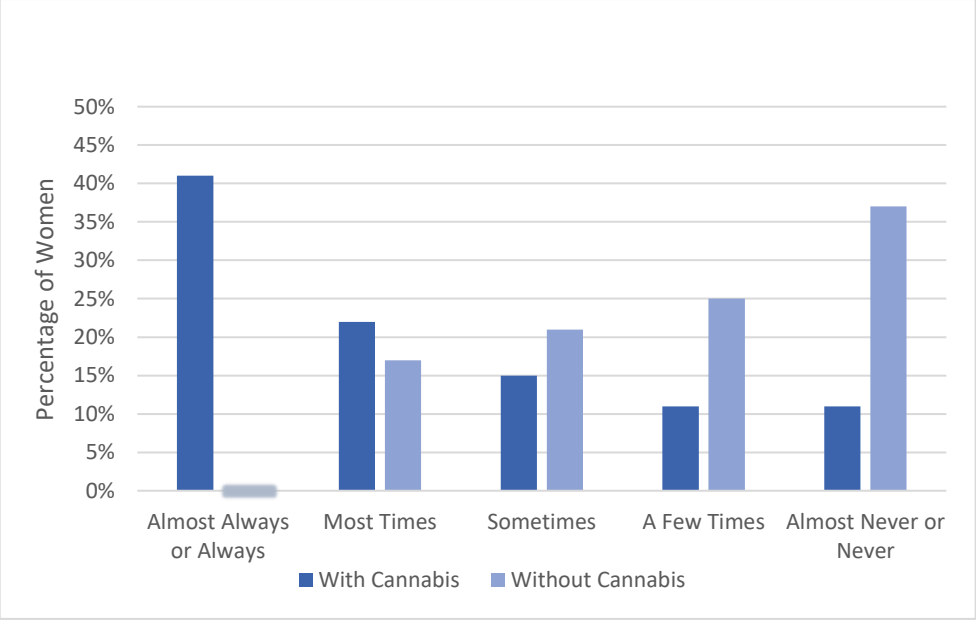


Figure 3

Orgasm Difficulty for Women With FOD, With and Without Cannabis Before Partnered Sex (p < .001)

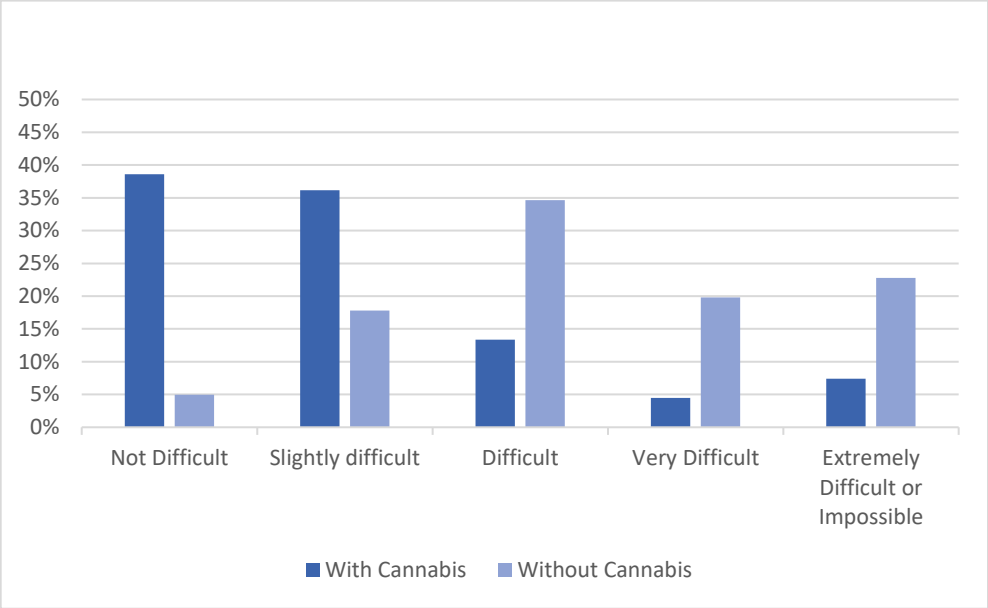
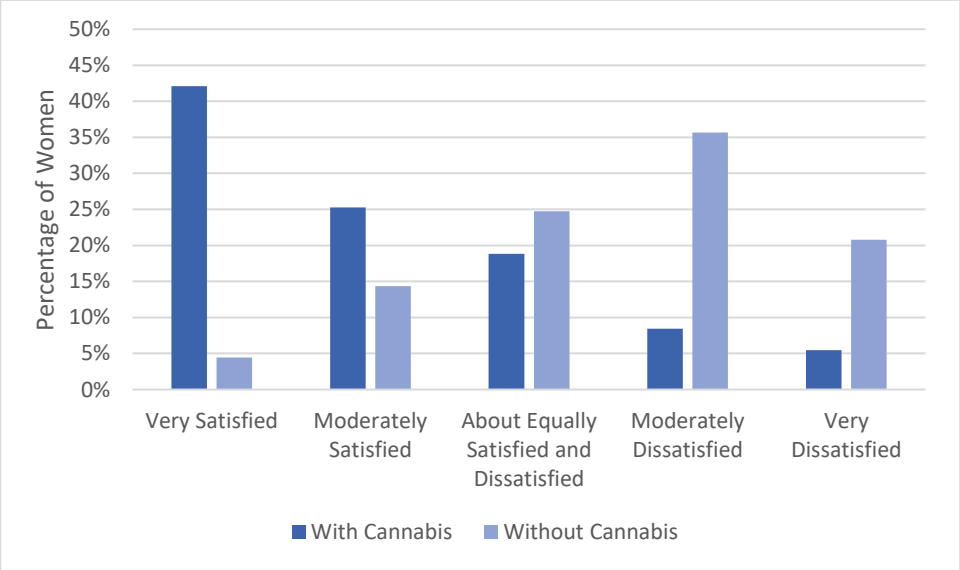


Figure 4

Orgasm Satisfaction for Women With FOD, With and Without Cannabis Before Partnered Sex (p < .001)



Cannabis Use Frequency and Length of Time Using Cannabis Before Partnered Sex

The frequency of cannabis use before partnered sex increased orgasm frequency in women who reported FOD ($N = 202$, $p < .001$). The largest group of women who reported FOD in their survey response used cannabis "most of the time" (31.6%, $n = 64/202$). Those who responded "almost always or always" use cannabis before sex reported orgasming 47% of the time. The frequency of cannabis use before partnered sex was also significant for "all" women and women with and without orgasm difficulty ($N = 387$, $p < .001$).

The duration of a woman's history of using cannabis before sex was not statistically significant for women with FOD ($p = .797$). Nonetheless, this outcome holds significance as women expressed an enhanced orgasmic experience irrespective of the duration they had been using cannabis prior to engaging in sexual activity with a partner. The largest group of women with FOD (35%, $n = 71/202$) used cannabis before partnered sex for 1-3 years. Table 1 presents cannabis use frequency, the length of time using cannabis before partnered sex data, and cannabis' effect on orgasm.

Table 1

Cannabis Use Frequency, Length of Time Using Cannabis Before Partnered Sex, and Cannabis' Effect on Orgasm

Characteristic	Women with FOD	All Women (with/ without FOD)	P-value Women with FOD ($N = 202$)	P-value All women ($N = 387$)
N	202	387		
Cannabis use frequency before sex (%)			$p < .001$*	$p < .001$*
Never	0 [0]	0 [0]		
Rarely	20 [9.9]	36 [7.4]		
Some of the time	59 [29.2]	122 [31.5]		
About half the time	36 [17.8]	70 [18.1]		
Most of the time	64 [31.7]	116 [30.0]		

Every time	23 [11.4]	43 [11.1]		
Length of time using cannabis before sex (%)			p = .797	n/a
Less than 1 year	40 [[19.8]	65 [16.8]		
1-3 years	71 [35.1]	144 [37.2]		
3-5 years	30 [14.9]	55 [14.2]		
5=years	60 [29.7]	122 [31.5]		
I do not use cannabis before partnered sex	1 [.50]	1 [.30]		

Note: * = statistically significant probability value (*p*-value). n/a = a large group was not analyzed when the *p*-value was not deemed significant for women with FOD except for mental health, prescription drug use, sexual abuse history, or primary intake method.

Reasons for Cannabis Use and Intake Method

The reasons survey respondents reported using cannabis before partnered sex were statistically significant, which resulted in a more positive orgasm response for "all" women (N = 387, $p < .001$), women with FOD (N = 202, p = .022), and with use for pain and sex resulting in a more positive orgasm response. "Relaxation" was the primary reason for cannabis use before sex stated by women with orgasm difficulty; 63% (n = 127/202) reported using cannabis for this purpose.

The primary method of cannabis intake was statistically significant for "all" women, women with and without orgasm difficulty, which resulted in a more positive orgasm response (N = 387, $p < .001$). However, the primary method of cannabis intake was not statistically significant for women with FOD (N = 202, p = .524). Smoking was the primary intake method reported by the largest group of women with FOD (49.5%, n = 100/202). Table 2 presents the reasons for cannabis use, intake method data, and the effect of cannabis on orgasm.

Table 2

Cannabis Use Behavior and Cannabis Effect on Orgasm

Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
N	202	387		
Primary reason for use (%)			$p = .022$*	$p < .001$*
Relaxation	127 [62.9]	233 [60.2]		
Sleep	11 [5.4]	33 [8.4]		
Sex	21 [10.4]	37 [9.6]		
Other medical problem	9 [4.5]	19 [4.9]		
Prescription	20 [9.9]	38 [9.8]		
Pain	14 [6.9]	27 [7.0]		
Primary intake method (%)			$p = .524$	$p < .001$*
Smoking	100 [49.5]	183 [47.3]		
Vaping oil	33 [16.3]	66 [17.1]		
Vaporizing cannabis flower (weed)	12 [5.9]	26 [6.7]		
Edibles	48 23.8]	95 [24.5]		
Tincture	5 [2.5]	9 [2.3]		
Topicals	1 [.50]	1 [.30]		
Other	3 [1.5]	7 [1.8]		

Note: * = a statistically significant probability value (*p*-value).

Reasons for FOD

The overwhelming majority (96%) of women experiencing difficulty with orgasm reported their struggles (*n* = 194/202). Thus, 194 was the number used in the calculations in this section. Most women who reported FOD during partnered sex (74.2%, *n* = 144/194) reported being able to orgasm in some situations but not others. Sixty-one percent (*n* = 118/194) reported orgasm taking longer than they would like, 51% (*n* = 99/194) reported that they sometimes orgasm, 22.6% (*n* = 44/194) reported reduced intensity of their orgasms, 10.8% (*n* = 21/194) reported other issues (discussed in the following section), 14.4% (*n* = 28/194) reported their

orgasms as sometimes not pleasurable, and 4.1% (*n* = 8/194) reported that in the past they were able to orgasm but could not any longer.

While 12 women (6.2%, *n* = 12/194) reported that they never had an orgasm, six reported that they orgasm in some situations but not others, that their orgasms took longer than they would like, or other reasons for their FOD. Six of the 12 reported that they never had an orgasm. The six who reported never having an orgasm were considered the accurate number for reporting purposes, totaling 3% (*n* = 6/202) of women with FOD and .78% (*n* = 3/387) of "all women," and "women with and without FOD."

Women with FOD reported 2.45 (*n* = 474/194) orgasm issues per person. (Appendix F presents the reasons women reported experiencing FOD in the survey and the calculations of each category.)

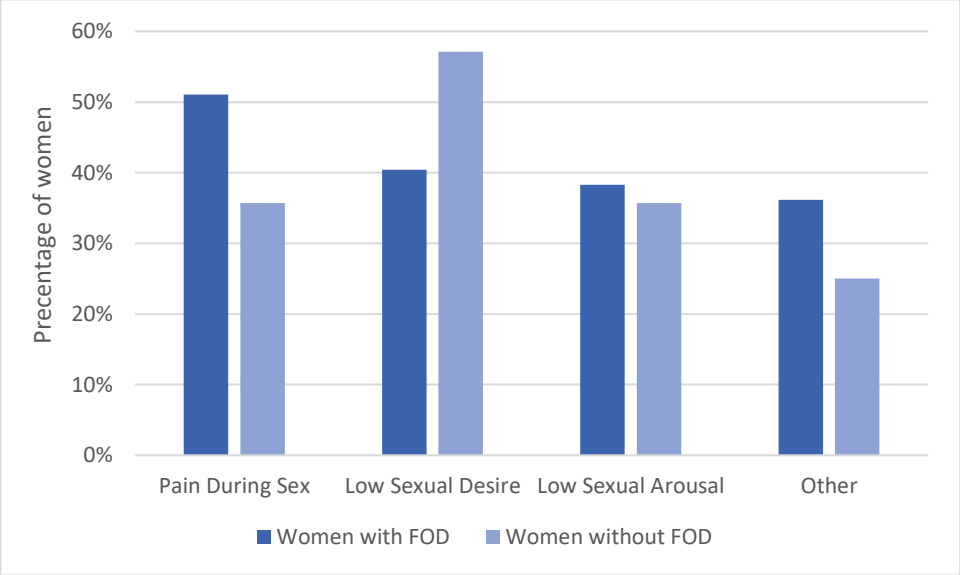
While 21 women listed "other" as a reason for FOD, 23 listed "other" reasons for experiencing FOD (11.3%, *n* = 23/202), thematically along the following categories: four described masturbation-only orgasms, with three of the four not yet able to orgasm during partnered sex and one who reported orgasm during partnered sex through masturbation-assistance, four mentioned medication, three SSRIs, and one birth control pills as reasons for their FOD. Three mentioned partner-related issues, two maintained that cannabis solved their FOD, two described cannabis-assisted orgasm, two described orgasm as inconsistent, and one participant attributed problems to each of the following thematic categories: orgasm takes longer than desired, never orgasmed from penetrative sex, oversensitivity leading to numbness, shame-related, surgery-related, and vaginal dryness. (Appendix G presents the thematic categories comments made by women who described their "other" reasons for FOD in the survey.)

"Other" Sexual Issues

Seventy-seven percent (*n* = 155/202) of women with FOD reported no "other" sexual issues. Of the 23% who reported "other" sexual issues, 51% reported pain during sex (*n* = 24/47) as their number one "other" sexual issue. Of women without FOD, 85% (*n* = 157/185) reported no "other" sexual difficulties, which meant no sexual difficulties since these women did not report orgasm difficulty. Of the 15% (*n* = 28/185) who reported "other" sexual issues, the majority, 57% (*n* = 16/28), reported low sexual desire as their number one sexual issue. Figure 5 notes "other" sexual issues presented by women with and without orgasm difficulty, as noted in the survey.

Figure 5

"Other" Sexual Issues Reported by Women With and Without FOD



Thirty percent (*n* = 19/47) of women with FOD reported "other" sexual issue comments grouped thematically and by order of most comments received; vaginismus, sexual trauma,

vaginal dryness, or other. (Appendix H delineates the "other" sexual issues by category and comments grouped thematically, offered by women with FOD reported in the survey.)

Twenty-five percent (*n* = 7/28) of women without FOD reported "other" sexual issue comments in order of most comments received, sexual trauma, medical issues, or other concerns. The largest group (19%, *n* = 5/26) of women, regardless of FOD, reported a history of sexual trauma and "other" sexual issues. (Appendix I delineates the "other" sexual issue comments, grouped thematically, offered by women with and without FOD reported in the survey.)

Table 3 presents "other" sexual issues (besides FOD) as answered by "yes" or "no" to the survey question related to "other" sexual issues. Although not evaluated for statistical significance, Table 3 summarizes participants' responses.

Table 3

"Other" Sexual Issues (besides FOD) and Cannabis Effect on Orgasm

Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
N	202	387		
"Other" sexual issues (besides FOD) [%]			n/a	n/a
Yes	47 [23.3]	75 [19.4]		
No	155 [76.7]	312 [80.6]		

Note: * = indicates a statistically significant probability value (*p*-value). n/a = large group was not analyzed when the p-value was not significant for women with FOD except for mental health, prescription drug use, sexual abuse history, and primary intake method.

Demographics and Relationship Status

Age, race, income, education, religion, sexual orientation, sexual relationship status, relationship status, and relationship satisfaction had no statistically significant relationship to orgasm when using cannabis before partnered sex. The largest group of women who reported

FOD were aged 25-34 (45%), were in a relationship (not married) (48.5%, *n* = 98), held a bachelor's degree (38%, *n* = 76), and earned between $50,000-$75,999 (24%, *n* = 49).

The majority of women who reported FOD reported their sexual orientation as LBGBTQ (52%, *n* = 105), their race as white (75%, *n* = 152), being in a sexual relationship with one person for less than 10 years (60%, *n* = 121), being "very satisfied" in their partnered relationship (50%, *n* = 100), and did not practice a religion (75%, *n* = 152). Table 4 presents the participant's demographic and relationship data and the effect of cannabis on orgasm.

Table 4

Demographic Characteristics and Cannabis Effect on Orgasm

Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
N	202	387		
Age [range %]			*p* = .683	n/a
18-24	43 [21.3]	76 [19.6]		
25-34	91 [45]	181 [46.8]		
35-44	42 [21]	83 [21.4]		
45-54	17 [8]	28 [7.2]		
55-64	3 [1]	11 {2.8}		
65+	6 [3]	8 [2.1}		
Education [%]			*p* = .704	n/a
Less than high school diploma or GED	4 [2]	6 [1.6]		
High school diploma or GED	15 [7]	22 [5.7]		
Some college	38 [19]	74 [19.1]		
Associate Degree	16 [8]	34 [8.8]		
Bachelor's Degree	76 [30]	149 [38.5]		
Graduate Degree	53 [26]	102 [26.4]		
Ethnicity [%]			*p* = .437	n/a
Asian	6 [3]	15 [3.9]		
Black/African American	10 [5]	22 [5.7]		
Hispanic	19 [9]	40 [10.3]		
Multiracial	6 [3]	15 [3.9]		
Native American	3 [1]	4 [0.8]		

Pacific Islander	1 [0]	1 [0.3]		
White/Caucasian	152 [75]	279 [72.1]		
Other	5 [2]	11 [2.8]		
Income [%]			p = .235	n/a
Less than $20,000	39 [19.3]	62 [16]		
$20,000 - $34,999	24 [11.9]	54 [14]		
$35,000 - $49,999	30 14.9]	54 [16]		
$50,000 - $74,999	49 24.3]	94 24.3]		
$75,000 - $99,999	27 13.4]	55 14.2]		
Over $100,000	33 16.3]	68 17.6]		
Relationship status [%]			p = .141	n/a
Single	24 [11.9]	45 [11.6]		
Married	67 [33.2]	127 [32.8]		
In a relationship	98 [48.5]	193 [49.9]		
Divorced	13 [5.4]	6 [1.6]		
Other	0 [0]	16 [4.1]		
Relationship satisfaction [%]			p = .606	n/a
Very satisfied	100[49.6]	221 [57.1]		
Moderately satisfied	59 [29.2]	103 [26.6]		
About equally satisfied and dissatisfied	22 [10.9]	32 [8.3]		
Somewhat dissatisfied	15 [7.4]	19 [4.9]		
Very dissatisfied	3 [1.5]	4 [1.0]		
I am not in a partnered relationship	3 [1.5]	8 [2.1]		
Religion [%]			p = .889	n/a
Buddhist	0 [0]	2 [.50]		
Christian (Any Christian denomination)	25 [12.4]	53 [13.7]		
Hindu	1 [.50]	1 [.30]		
Jewish	11 [5.4]	15 [3.9]		
Muslim	0 [0]	2 [.50]		
Sikh	1 [.50]	1 [.30]		
I do not practice a religion	152 [75.2]	296 [76.5]		
Other	12 [5.9]	17 [4.4]		
Sexual orientation [%]			p = .898	n/a
Yes LGBTQ	105 [52]	192 [49.6]		
No LGBTQ	93 [46]	188 [48.6]		
Sexual relationship status [%]			p = .629	n/a
In a sexual relationship with one person (less than 10 years)	121 [59.9]	226 [58.4]		
In a long-term sexual relationship with one person (more than 10 years)	43 [21.3]	87 [22.5]		
Engaging in sex with more than one person	34 [16.8]	66 [17.1]		

Not in a sexual relationship with one person	4 [2.0]	8 [2.1]

Note: * = indicates a statistically significant probability value (*p*-value). n/a = large group was not analyzed when the p-value was not significant for women with orgasm difficulty except for mental health, prescription drug use, sexual abuse history, and primary intake method.

Mental Health and Prescription Medication

Women with and without FOD who reported a mental health diagnosis (*n* = 231/387) had a statistically significant more positive orgasm response when using cannabis before sex (*N* = 387, *p* = .004). Most women who reported FOD also reported having a mental health diagnosis (64%, *n* = 129/202) or were taking prescription medication (61%, *n* = 123/202). Most women who reported FOD also reported an anxiety disorder (47%, *n* = 95/202). Table 5 presents participants' mental health diagnoses, prescription drug use, and cannabis' effect on orgasm.

Table 5

Mental Health, Prescription Drug Use, and Cannabis' Effect on Orgasm

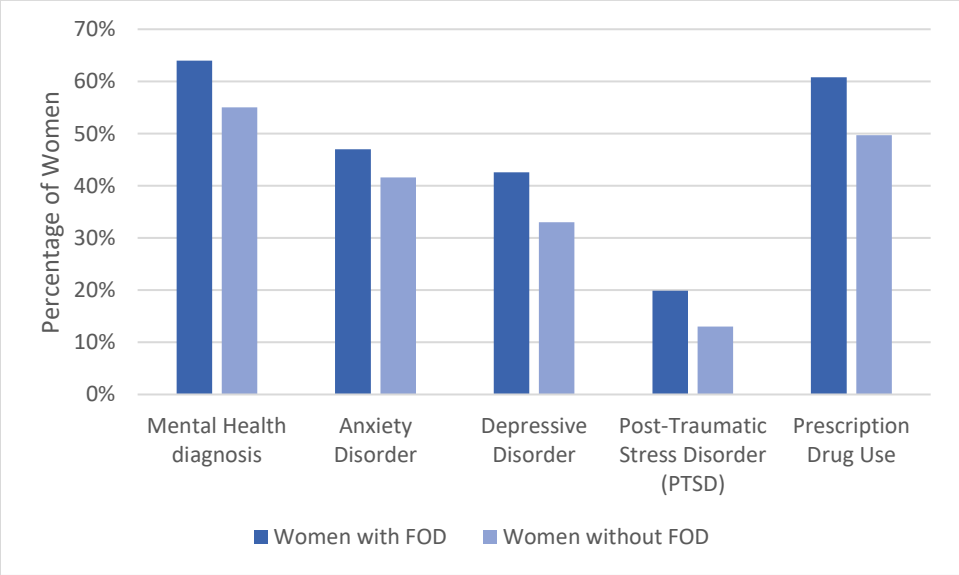
Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
Mental health diagnosis [%]			*p* = .164	*p* = .004*
Yes	129 [63.9]	231 [59.7]		
No	73 [36.1]	156 [40.3]		
Mental health diagnosis type [%] (one or more per person)			n/a	n/a
ADHD	16 [7.9]	31 [8.0]		
Anxiety disorder	95 [47]	172 [44.4]		
Bipolar disorder	12 [5.9]	18 [4.7]		
Depressive disorder	86 [42.6]	147 [38.0]		
Obsessive-compulsive disorder	5 [2.5]	8 [2.1]		
PTSD	40 [19.8]	64 [16.5]		
Other	13 [6.4]	24 [6.2]		
Prescription drug use [%]			*p* = .232	*p* = .114
Yes	123 [60.9]	215 [55.6]		
No	79 [39.1]	172 [44.4]		

Note: * = indicates a statistically significant probability value (*p*-value). n/a = large group was not analyzed when the p-value was not significant for women with orgasm difficulty except for mental health, prescription drug use, sexual abuse history, and primary intake method.

Women with FOD reported 24% more mental health issues, 52.6% more PTSD, 29% more depressive disorders, 13% more anxiety disorders, and 22% more prescription drug use than women without FOD. Figure 6 presents mental health diagnoses, prescription drug use, and women with and without FOD.

Figure 6

Mental Health Diagnosis and Prescription Drug Use Reported by Women With and Without FOD



Sexual Abuse History

Regardless of FOD, women with a history of sexual abuse (32.3%, *n* = 125/387) had a more statistically significant positive orgasm response when using cannabis before sex (*p* = .003). Figure 7 presents sexual abuse histories reported by women with and without orgasm difficulty. Women with sexual abuse histories and orgasm difficulty (38.6%, *n* = 74/202)

reported 32.9% more sexual abuse histories than women without orgasm difficulty (27.6%, *n* = 51/185). Table 6 presents sexual abuse history and cannabis effect on orgasm.

Figure 7

Sexual Abuse History Reported by Women With and Without FOD

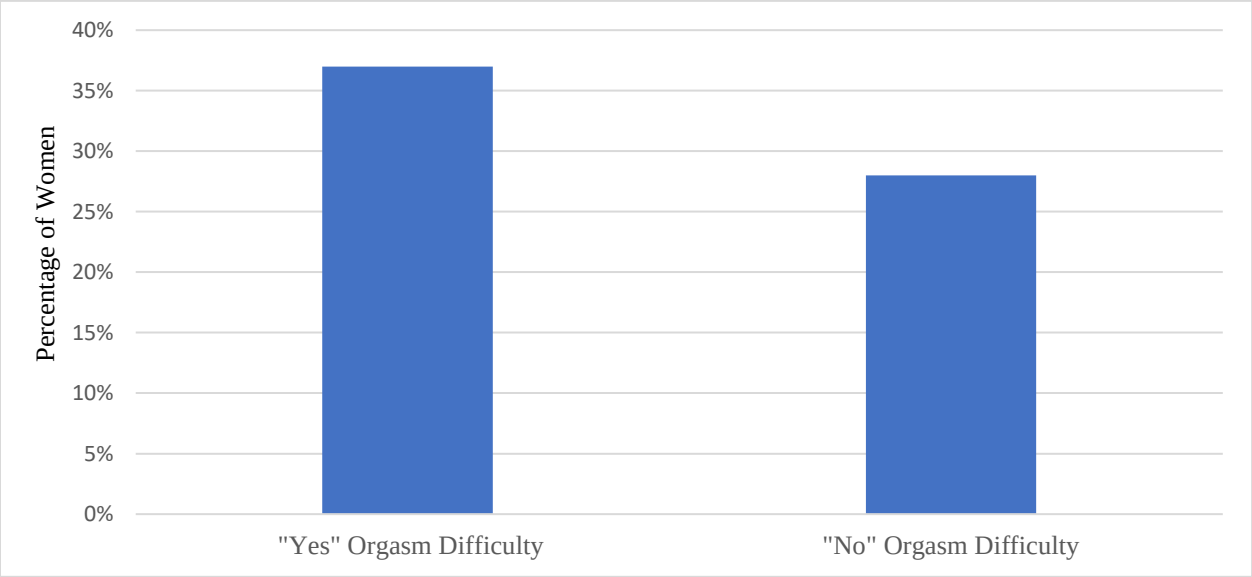


Table 6

Sexual Abuse History and Cannabis Effect on Orgasm

Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
N	202	387		
Sexual abuse history [%]			*p* = .206	*p* = .003*
Yes	74 [36.6]	125 [32.3]		
No	128 [63.4]	262 [67.7]		

Note: * = indicates a statistically significant probability value (*p*-value). n/a indicates that a large group was not analyzed when the p-value was not significant for women with FOD except for mental health, prescription drug use, sexual abuse history, and primary intake method.

Partnered Sex Frequency and Masturbation Frequency

Partnered sex frequency was statistically significant, revealing a more positive orgasm response for women who reported orgasm difficulty and used cannabis before partnered sex (N = 202, p = .035). However, this finding was not statistically significant for "all" women. Women with orgasm difficulty did not have a statistically significant masturbation frequency (N = 202, p = .620).

"All" women were not evaluated for masturbation frequency. The largest group of women who reported orgasm difficulty reported having partnered sex 2-3 times per week (41%, n = 83/202) and reported masturbating 2-3 times per week (38%, n = 77/202). Table 7 presents partnered sex frequency, masturbation frequency, and cannabis effect on orgasm.

Additional Comments by Survey Respondents

The survey asked respondents if there was any other issue they wanted to share regarding their experience with cannabis, sex, and orgasm not mentioned in the survey. Of women with FOD, 28% (n = 56/202) provided additional comments. Of women without FOD, 31.5% (n = 58/185) provided additional comments.

The author arranged the responses along thematic lines, divided by women with and without orgasm difficulty. The largest group of women with FOD reported cannabis-assisted orgasm, orgasm ease, orgasm difficulty, orgasm intensity, orgasm in other situations, and orgasm and sensual pleasure (25%, n = 14/56). The largest group of comments made by women without orgasm difficulty (36%, n = 21/58) reported better, more intense, more robust, longer, and multiple orgasms. (Appendix J presents thematically grouped additional comments reported by women with orgasm difficulty.) (Appendix K presents thematically grouped additional comments reported by women without orgasm difficulty.)

Women Who "Learned" to Orgasm Using Cannabis. Although not directly asked, several survey respondents and interviewees, with and without FOD, reported that they learned to orgasm using cannabis or orgasm in new situations with cannabis. The observations below are from study participants' survey comments.

Comments from Women with FOD

- "You asked about the last month's use, but I want you to know that before using cannabis, I had NEVER had an orgasm." (Participant survey comment)
- "It might be relevant to know that cannabis not only helps my ability to orgasm but can also make the orgasms much more intense and pleasurable." (Participant survey comment)
- "I could never orgasm from penile-vaginal intercourse (PVI) sex until I started using cannabis first." (Participant survey comment)
- "The only way I can reach vaginal orgasm is from using cannabis prior to sexual activity. Before this happened, I assumed I was one of the many that could not orgasm this way. Also, my orgasms are a good 10 times stronger after using." (Participant survey comment)
- "There can be multiple orgasms with cannabis, and that is rare without it." (Participant survey comment)

Comments from Women without FOD

- "Cannabis is what helped me figure out how to orgasm." (Interviewee response)
- "The biggest one for me has been that I have been able to have female ejaculation with cannabis that I never experienced before." (Interviewee response)

Willingness to be Interviewed

Fifty percent of women with orgasm difficulty (*n* = 101/202) responded "yes" to the question if they were willing to be interviewed. Each provided contact information. A slightly lower percentage of women without FOD (47%) (*n* = 88/185) reported a willingness to sit for an interview.

Additional Findings

Orgasm Frequency and Women With and Without FOD. This section highlights the orgasm frequency differences between women with and without FOD and women who "almost always or always" orgasm with and without cannabis before sex. Of women with FOD, 36.6% (n = 74/202) reported "almost never or never" orgasming without cannabis use before sex compared to no respondents (n = 0/185) of women without FOD orgasming "almost never or never" when not using cannabis before sex. Women without FOD when they did not use cannabis before sex "almost always or always" orgasm 42.7% of the time (n = 79/185), whereas 0% of women with FOD "almost always or always" orgasm without cannabis use before sex.

When using cannabis before sex, women without FOD reported "almost always or always" orgasming 81.6% of the time (*n* = 151/185), whereas women with FOD reported "almost always or always" orgasming 40.5% (*n* = 82/202) of the time. Figure 8 represents these findings.

Strengths and Limitations

The researcher investigated FOD in the context of empirically supported covariates reported in the literature, including the orgasm-subscale questions of the FSFI. The strengths of this quantitative study included the within-study design, subjects being their own control group, the use of the orgasm sub-scale questions of the validated FSFI survey with and without cannabis

use before sex, the exclusion of subjects who used other recreational substances, and those who did not use cannabis before sex within the last 30 days or did not have partnered sex within the last 30 days.

The limitations of this quantitative study include not being generalizable to all women with and without FOD. More specifically, the results may not be generalizable to women who rarely or do not use cannabis before sex, women who have never had an orgasm, women who do not have female genitalia, and women who recently became sexually active. The cultivar of cannabis was not evaluated, nor was the chemotype or the amount of cannabis used.

Cannabis Use Before Sex Did Not Help All Women. Nearly 3% (n = 6/202) of survey respondents who reported FOD reported never having had an orgasm, less than 1% of "all" women, with and without FOD (.78%, n = 3/387). Eight percent (n = 16/202) reported "almost never or never orgasming" regardless of cannabis use before partnered sex.

Table 7

Partnered Sex Frequency, Masturbation Frequency, and Cannabis Effect on Orgasm

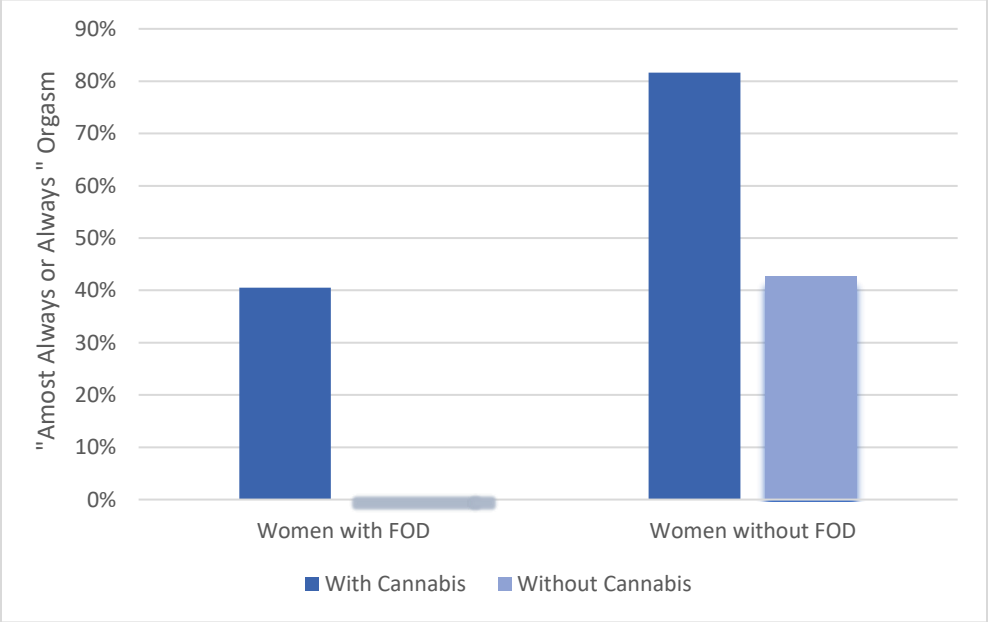
Characteristic	Women with FOD	All women (with/ without FOD)	*P*-value Women with FOD (*N* = 202)	*P*-value All women (*N* = 387)
N	202	387		
Partnered sex frequency [%]			$p < 0.01$*	$p = .617$
One or more times a day	11 [5.4]	23 [5.9]		
2-3 times a week	83 [41.1]	162 [41.9]		
4-5 times a week	21 [10.4]	52 [13.4]		
A few times a month	79 [39.1]	139 [35.9]		
Once every few months	8 [4.0]	11 [2.8]		
Masturbation frequency [%]			$p = .620$	n/a
One or more times per day	16 [7.9]	31 [8.0]		
2-3 times per week	77 [38.1]	136 [35.1]		
4-5 times per week	16 [7.9]	33 [8.5]		
A few times a month	62 [45.5]	117 [30.2]		
Once every few months	19 [9.4]	45 [11.6]		

I do not masturbate	12 [.50]	25 [6.5]

Note: * = indicates a statistically significant probability value (*p*-value). n/a indicates that a large group was not analyzed when the *p*-value was not significant for women with orgasm difficulty except for mental health, prescription drug use, sexual abuse history, and primary intake method.

Figure 8.

Women With and Without FOD Who "Almost Always or Always" Orgasm With and Without Cannabis Before Sex



Qualitative Analysis Results

Introduction

This section presents the results of the qualitative analysis conducted via content and thematic examination following one-on-one interviews using structured and semi-structured questions. Of the 40 women interviewed, 20 women reported FOD during partnered sex; 20 did not report FOD during partnered sex.

The researcher contacted those women who gave their contact information in the survey via email or telephone and consented to be study participants. Eighty women (39.6%, *n* =

80/202) with FOD and 69 (37%, *n* = 69/185) without FOD provided their contact information in the survey. The researcher interviewed all who consented.

Interviews ranged from 15 minutes to 45 minutes in length. Most interviews were conducted face-to-face via Zoom video, with a few audio-only interviews conducted via Zoom, at the interviewee's preference. Several interviews took place via telephone. (The interview questions are in Appendix L.)

The qualitative analysis focused on women with FOD. However, other participants' distinctions were analyzed. In a few instances, the researcher included survey participant responses highlighting identified thematic or content differences. For example, such topics as the following garnered additional analysis: responses that identified cannabis strains used before partnered sex and responses of women who had reported anxiety disorders and sexual abuse histories.

Cannabis Use Behavior

Cannabis Strain Preferences and THC Percentages. The largest groups of women with FOD preferred sativa or sativa dominant hybrids (35%, n = 7/20) or did not know what strain they were using (35%, n = 7/20). Thirty percent (n = 6/20) of women with FOD reported indica or indica-dominant strains as their preferred strain to use before sex. Fifteen percent (n – 3/20) reported being residents of states or countries where cannabis was illegal.

Most women without FOD preferred indica or indica-dominant hybrids (55%, *n* = 11/20). Of women without FOD, 5% (*n* = 1/20) reported not knowing which strain they used, while three women (*n* = 3/20) reported living in states or countries where cannabis was illegal.

Cannabis strain names/product names were known and provided by 25% (*n* = 5/20) of women with FOD, and 30% (*n* = 6/20) of women without FOD provided such information.

Several women gave the name of more than one strain variety, resulting in 12 strain/product names reported by women with FOD and 15 strain/product names reported by women without FOD. Both groups of women commonly reported two strain names.

Table 8 presents the cannabis strains and products reported by women with and without FOD. Cannabis product descriptions include strain names, tincture or tablet form cannabis products, percentage of THC and CBD, and if the product is sativa, sativa-dominant hybrid, 50/50 sativa/indica, indica, or an indica-dominant hybrid.

Of the cannabis strains listed by the women with and without orgasm difficulty in Table 8, the THC percentage ranged from 14-30%, with the sativa strain as high as 70% and the indica strains as high as 100%. Two cannabis strains (those identified with asterisks in Table 8), Blue Dream and Girl Scout Cookies, were reported by women with and without FOD.

Cannabis Strains Preferred by Women with FOD and Mental Health Diagnosis. Most women with FOD reported one or more mental health diagnoses (65%, n = 13/20). Of these women, the largest group (46%, n = 6/13) preferred indica-dominant strains.

Cannabis Strains Preferred by Women with FOD and Anxiety Disorders. Sixty-nine percent (69%) of women with FOD who reported a mental health diagnosis reported an anxiety disorder (n = 9/13). Of these women with FOD who reported an anxiety disorder, 31% (n = 4/13) preferred indica-dominant strains, 8% (n = 1/13) preferred sativa-dominant strains, and 31% (n = 4/13) did not know which strain they were using.

Cannabis Intake Methods Used Before Partnered Sex. The majority of "all" women interviewed, both with and without FOD (n = 35/40), smoked flower or used vape pens as their primary cannabis intake method use before sex. Three women (n = 3/20) with FOD used edibles before sex. Two (n = 2/20) women without FOD used edibles before sex, while one without

FOD used cannabis in a tablet form. Some women reported that they varied their cannabis intake method before sex, while others consistently only used one primary intake method before sex.

Table 8

Cannabis Products Used Before Partnered Sex

Strain/tincture/pill name	%THC	%CBD	Sativa dominant hybrid	50/50	Indica	Indica dominant hybrid
Women with FOD						
Blue Dream*	18%	0%	60/40			
Dr. Stone's Restore	n/a	n/a				
Girl Scout Cookies*	19%	1%				60/40
Grape Ape	18%-21%	1%				90/10
Grand Daddy Purple	20%-27%	1%				70/30
LA Confidential	26%	<1%				95/5
OG Kush Breath	25%-27%	1%				70.3
Peach Crescendo	18.90%	n/a				60/40
Revel Brand Tincture	20.7%-23%	n/a	n/a			
Runtz	21%	0%		50/50		
Women without FOD						
Blueberry	16%-24%	<1%				80/20
Blueberry Kush	22%-24%	<1%			100%	
Blue Dream*	18%	0%	60/40			
Blue Zkittlez	17%-21%	1%				70/30
Chill Pill	5mg	25mg	n/a			n/a
Gelato	15%-20%	<1%				54/44
Girl Scout Cookies*	19%	1%				60/40
Howl's Wolf Tincture	n/a					
Layer Cake	25%-30%	0%				60/40
Mimosa	27%	1%	70/30			
Northern Lights	16%-21%	<1%				95/5
Pineapple Express	20%	1%	60/40			
Sex Pot	14%	0%			100%	
Train Wreck	18%	0%	90/10			
Wedding Cake	22%-27%	<1%				60/40
Mandarin Cookies	15%-25%	<1%	70/30			

Note: * = reported by women with and without FOD

Dosage Preferred Before Partnered Sex. Most women with FOD commented on the dosage they preferred before partnered sex when answering the question about when they take cannabis before partnered sex and the intake method. Comments made by women with FOD included, “I take three-fourths of a 10-milligram edible,” “I eat one quarter of a (homemade) brownie,” “I take one hit,” “I take a couple of hits,” and “I share a joint with my partner.” This finding was similar for women without FOD.

When Women Take Cannabis Before Partnered Sex and in What Intake Method? Women with FOD who used cannabis before sex reported taking the edibles from 20 minutes before (delta-8 product) partnered sex to two hours before partnered sex. Women with FOD who smoked or vaped cannabis before sex reported that they smoked/vaped from 20 minutes or less before partnered sex to 1.5 hours before partnered sex. Two women reported use of cannabis tincture; one woman reported using cannabis tincture two hours before partnered sex, and one woman reported using cannabis tincture three hours before partnered sex.

Why Women Report Using Cannabis Before Partnered Sex. Women with and without FOD had similar key thematic responses regarding why they use cannabis before partnered sex. The themes fell into four categories:

- Relaxation, self-confidence, comfort, less inhibition, quiets the mind, reduces pain;
- Increases sensation, heightens senses and arousal;
- More intense, better, easier, and multiple orgasms; or
- Improved sexual experience; more bonded and connected experience with partner.

(Appendix M presents the comments, thematically grouped, reported by women who report FOD as to why they use cannabis before sex.)

What Prompted Women to Start Using Cannabis Before Sex? Women with FOD responded to the question, "What prompted you to start using cannabis before partnered sex?" with their answers along three thematic categories. Most women reported cannabis use before sex was a process of discovery (90%, n = 18/20); 45% (n = 9/20) reported the process of discovery was unrelated to sex, and 45% reported the process of discovery was related to sex (45%, n = 9/20). Two women (10%, n = 2/20) reported they heard about using cannabis before sex through friends or social media. Comments were similar from women without FOD. (Appendix N presents the thematically grouped comments reported by women with FOD regarding what prompted them to use cannabis before partnered sex.) (Appendix O presents the thematically grouped comments reported by women without FOD regarding what prompted them to use cannabis before partnered sex.)

Do Both Partners Use Cannabis Before Sex? Most women with FOD (65%, n = 13/20) reported that they usually, sometimes, most times, or always use cannabis before sex with their partner. Five women (25%) reported that they use cannabis before sex while their partner does not use it. One woman reported using cannabis before sex with new partners but not with her boyfriend. Another woman reported that she uses cannabis way more than her partner. Women without FOD answered similarly to women with FOD, with some using cannabis with their partners and others not.

Cannabis' Effect on Orgasm. As a part of this study, women with FOD described the effect cannabis had, if any, on their orgasm during partnered sex. Most women (75%, n = 15/20) reported stronger or more intense orgasms, orgasm ease, multiple orgasms, or expanded types of orgasms when using cannabis before partnered sex. The other 25% of women with FOD reported either that their orgasm returned due to using cannabis or that they were still experimenting with

cannabis to see if it helped/affected their orgasm. One woman reported that cannabis did not have an effect, did not change the overall experience of sex for her, and maintained that it was not always helpful. Another participant reported that it made her feel closer to her partner. The themed groups are below:

- More intense orgasms; more sensation; easier to orgasm; multiple orgasms; expanded types of orgasms;
- More connection with partner;
- No effect on orgasm;
- Orgasm returned; and
- Still experimenting.

(Appendix P presents a grouped review of women with FOD comments related to cannabis' effect on orgasm, if any).

Women Describe Orgasms. Women with and without FOD reported that when using cannabis before sex, they could have more orgasms through vaginal penetration alone (without clitoral stimulation), more multiple orgasms, more g-spot orgasms, orgasms through oral sex, orgasms with vibrators, and orgasms through ejaculation.

Some women with FOD reported they could only orgasm during penetrative sex when using cannabis before sex and could have multiple orgasms with cannabis before partnered sex. This response was similar to women who reported not having FOD. One woman reported, "I do not climax during penetration without cannabis, but I can climax during penetration with cannabis, and I can have more than one orgasm with cannabis." Some women reported about the ease of orgasming when using cannabis before sex.

How Long Did It Take to Notice Cannabis' Effect on Orgasm? The largest group of women with FOD (40%, n = 8/20) said they noticed cannabis effect on their ability to orgasm from a time frame ranging from immediate to a few uses/few weeks after they started using cannabis before sex, with some of these women using cannabis for the first time. The second largest group of women with FOD (30%, n = 5/20) said it took six months to a year to notice cannabis' effect on their orgasm. Two women used the term "a trial-and-error period," with one woman stating she had "A year of trial and error with different partners." One woman had not orgasmed for several years from masturbation or partnered sex after a third surgery removed a three-inch mass, which changed the shape of her vagina. Sex became painful. However, she noticed cannabis was "making a difference." Her orgasm returned after six months to a year of this trial-and-error period. Another woman said she had a "weird relationship with sex," she "put herself on the back burner" and grew not to care about her pleasure. Cannabis taught her to "focus on herself." One diabetic woman had neuropathy. When diagnosed, she had lost a lot of sensation everywhere; she started using cannabis for this medical reason, and sensation returned.

Fifteen percent of women with FOD (n = 3/20) noticed cannabis' effect on their orgasm within two-to-four months after starting to use cannabis before sex. Two women were unsure how long it took to notice cannabis' effect on their orgasm, and two women said they were still experimenting and had not yet experienced an orgasm when using cannabis before partnered sex.

Orgasm Difficulty

When Did the Orgasm Difficulty Begin? Women with FOD reported the following four reasons as to when their FOD began: with medication, partner issues, a traumatic event, or that the difficulty began when they started having partnered sex. The largest group of women with FOD (45%, n = 9/20) reported that the FOD began when they started having partnered sex and

that the orgasm difficulty was “always there.” Fifty-five percent (n = 5/9) of these women who reported that the orgasm difficulty was always there indicated in the survey that they had a history of sexual abuse.

Table 9

Women for Which Cannabis Use Before Partnered Sex Had an Immediate Response

Age	Mental health diagnosis	Sexual abuse history	How long using cannabis before partnered sex	Freq. of cannabis use before partnered sex	Partnered sex freq.	Primary intake method	Strain
35-44	Anxiety disorder, ADHD	Yes	1-3 years	Most of the time	A few times a month	Vaping oil	Sativa dominant hybrid
18-24	Anxiety disorder, Depressive disorder, PTSD	Yes	1-3 years	Sometimes	2-3 times a week	Edibles	Indica dominant hybrid
35-44	Anxiety disorder, Depressive disorder, PTSD	Yes	5+ years	Every time	2-3 times a week	Smoking	Unknown (illegal where she lives)
25-34	Yes, reported “Other”	Yes	3-5 years	Some of the time	1 or more times per day	Smoking	Leans towards indica dominant strains
25-34	Depressive disorder	No	3-5 years	Some of the time	A few times a month	Edibles	Sativa

25-34	Yes, reported "Other"	Yes	1-3 years	Some of the time	2-3 times a week	Edibles	Unknown (illegal where she lives)

Was Treatment Sought for FOD? If yes, What Treatment and was it Effective? Most women reported never seeking treatment for their FOD (60%, *n* = 12/20). Thirty-five percent (35%, *n* = 7/20) sought treatment; one response was unknown. The women not seeking treatment gave the following reasons:

- *"No, I am just trying weed."*
- *"No, I knew it had to do with the surgery."*
- *"No, because I knew I could still orgasm through masturbation."*
- *"No, because I could orgasm on my own. I felt the issue was relational."*
- *"No, I started masturbating when I was five years old. I just would "lock up" with a partner."*
- *"No, after the diagnosis of neuropathy, I worked on regaining skin and nerve sensation."*
- *"No, not from a doctor."*
- *"No, it was frustrating."*

Of the women who sought treatment, the type of treatment sought was with sex therapists, doctors, pelvic floor therapists, prescription medication, and self-help books. The prescription medication mentioned by one participant failed to help. The responses of women who sought treatment for their orgasm difficulty are below:

- *"I told my doctor about it* [FOD]*, and I am now taking a second medication that is supposed to mitigate that* [orgasm] *problem. Cannabis was one of the solutions."*

- *"I saw a sex therapist and pelvic floor therapist. Neither helped me with orgasm. The pelvic floor therapist may have helped 10% to tighten the vaginal muscles that retrained my bladder."*
- *"I never worked with a specific sex therapist. I saw regular therapists and addressed other issues I struggled with that are related to the experience of sexuality. I had interviewed sex coaches and sex therapists and decided not to work with a sex therapist. Now I am working with a sex coach."*
- *"I did do pelvic floor therapy for about six months and found out I had a tight pelvic floor. It did not help with orgasm."*
- *"I tried pelvic floor therapy to help vaginismus. I saw improvements. I also did talk therapy for two years, unrelated to sexual health. I learned to stretch and relax. Cannabis helps me relax my pelvic floor muscles."*
- *"I have talked with therapists about it and about cannabis helping it."*
- *"I saw a sex therapist for three or four months. I was prescribed medication, Molipaxin, an antidepressant, to help me orgasm. It made no difference."*
- *"We tried self-help books and that worked."*

Women Describe their FOD. The researcher asked women with FOD: "Can you please describe your difficulty orgasming during partnered sex?" Six main themes resulted from their responses: took too long to orgasm, difficulty letting go, mind being too active, triggers from previous trauma, lack of sensation, and insufficient time in arousal/partner issues. The largest group of women (30%; n = 6/20) said it took too long (to orgasm). (Appendix Q presents the detailed comments.)

Women Who Have Not Yet Orgasmed Using Cannabis. Two women with FOD reported experimenting with cannabis and had not yet orgasmed with cannabis use before partnered sex. Details of these women, including their survey and interview responses, are below.

The first woman started having partnered sex two years ago and "rarely" used cannabis before partnered sex. She used cannabis four times before sex, and one of these four times was with a partner. She is 35-44 years of age and used cannabis for 1-3 years before partnered sex. She uses cannabis in general "a few times a year" and "rarely" before sex. She masturbates 2-3 times per week and orgasms from masturbation, which takes about 10 minutes. She is a single, Black/African American, somewhat devout in her Christian religion, and on prescription medication for high blood pressure.

The other woman does not engage in self-pleasure (masturbation), has a sexual abuse history, and is aged 25-34. She used cannabis for 1-3 years before sex and uses cannabis most of the time before sex. She has no mental health diagnosis and has been in a relationship with one person for less than 10 years. She is moderately satisfied with her relationship.

Cannabis and First Orgasms; Orgasm Improvement, and Other Sexual Improvement

Comments made during the interviews by women with and without orgasm reflect three major themes: cannabis facilitating first orgasms and orgasm frequency; cannabis, orgasm confidence and relationship with sexuality; and other sexual improvements.

Cannabis Facilitating First Orgasms and Orgasm Frequency

- *"Cannabis is what helped me figure out how to orgasm."*
- *"Before using cannabis, I almost never orgasmed without it. I orgasmed 1 out of 10 times."*

- *"If I do not smoke cannabis before sex, I do not orgasm. I cannot stay out of my head long enough to get there."*
- *"I never had an orgasm before I started using cannabis, and it worked the first time."*

Cannabis, Orgasm Confidence, and Relationship With Sexuality

- *"Since using cannabis before sex, I tried not using it (cannabis), and I can now achieve orgasm without it on my own but not nearly as good as it can be with cannabis."*
- *"Cannabis changed how I see myself. It changed my relationship with my sexuality."*

Cannabis and Other Sexual Improvements

- *"Before cannabis, I struggled with lubrication. That is not a problem anymore."*

Additional Comments

The researcher also asked this group of women: "Is there anything else you would like to share about cannabis and female orgasm that we did not discuss?" Comments by women with FOD aligned into five groups: releasing shame and old beliefs about using cannabis; environment, setting, and intention; dosing; THC lube; and other comments. (Appendix R presents detailed comments.)

Comments by women without FOD comprise five groups: cannabis and first orgasms; dosage; life-changing/more adventure; learning about oneself, trauma, setting boundaries; getting off medication; and other comments. (Appendix S presents detailed comments.)

Orgasm Advice from Women Without FOD

The researcher asked women without FOD, "Is there any advice you would like to give to women who reported FOD?" Advice fell into four thematic categories: experiment and try cannabis, practice and re-train yourself, learn about your body and quiet the mind, and choose a safe and understanding partner. The "experiment and try cannabis" category included

suggestions: try sex toys, use a shower head, try sensory deprivation (being blindfolded), and learn which cannabis strains work for them.

The "practice and re-train yourself" category included recommendations such as mindful masturbation, self-understanding, explorative, and non-judgmental with oneself. The "choosing an understanding partner" category included suggestions such as choosing a partner who cares about your pleasure and with whom you feel safe to be yourself. (Appendix T presents detailed recommendations from women without FOD to women with FOD.)

Women Without FOD Report if They Ever Had FOD

The researcher asked women without FOD if there was ever "a time you could not orgasm or had FOD?" Most women without FOD (60%, n = 12/20) reported they had FOD at some time in their life. Thirty percent (n = 6/20) reported FOD when they were younger, 15% (n = 3/20) reported partner-related orgasm difficulties such as partners thinking they were taking too long to orgasm or having new partners, and 15% (n = 3/20) reported other reasons that included: surgery, anti-depressant medication, and being sober and stressed. (Appendix U contains the detailed responses.)

Additional Findings

This section features three additional topic areas discovered through thematic and analytic analysis. These topics include that cannabis helped with issues besides orgasm and that most of the women interviewed who reported FOD had a sexual abuse history. These additional findings were explored in the literature review and will be discussed further in Chapter 5.

Cannabis Helped with Issues Besides Orgasm. Several women with FOD commented that cannabis helped them with other issues besides orgasm. These issues included PTSD and

neuropathy and finding out secondarily that cannabis helped with orgasm. Several comments are below:

- *"I started using cannabis for processing PTSD. I started moving through my trauma. The negative thought loops finally stopped. I was able to take my skills, get my brain back and process it* [trauma] *and move forward. I had more recovery within two weeks of starting to use cannabis than I had with one year of therapy. Cannabis has helped with everything!"*
- *"I am diabetic and have neuropathy. When I was diagnosed with neuropathy, I lost a lot of sensation everywhere. Seven years after, I am much better. I am still healing from the nerve damage. Cannabis helped me not to feel the weird sensations on my skin all of the time and helped my skin feel normal again. This was the reason I got my medical marijuana card."*

Women and Sexual Abuse Histories and FOD. Fifty percent (50%, *n* = 10/20) of the women with FOD reported a history of sexual abuse, and 30% (*n* = 6/20) of the women without FOD reported a sexual abuse history. Comments made by women regarding cannabis use before sex for women who had sexual abuse histories, both with and without FOD, had themes of being less triggered, not dissociating, or being able to stay in their bodies when using cannabis before sex. Comments from women with and without FOD included the following:

- *"I had trauma around sex, and with cannabis, I am triggered less. I had sexual trauma when I was married, not a child. I do not dissociate and can be present with cannabis."*
- *"I am a sexual abuse survivor from adulthood and it* [cannabis] *helps lower the HEADS UP. I am not so much in my head; I can be one within my body."*

- *"There is a whole universe of sex and intimacy that is accessible to you. If you just find whatever it is that is holding you back. Don't give up. This is coming from someone who was sexually abused. Cannabis changed my entire view of sexuality."*
- *"I knew something was off as I was not able to orgasm from masturbation either. I was raped in my late teens. I told the guy I was dating, who is now my husband, about my sexual abuse history, and he said, 'Try this* [cannabis]*.' And it worked the first time."*
- *"Cannabis does help me lower my "mental walls" and keep them down during intimacy. I come from a background of child sexual assault, and sometimes it is easy to get inside my head in the moment. There are different tools to use to stay out of my head during intimacy, and I find that cannabis is the most effective tool."*
- *"I had triggers from previous sexual trauma. I do not have them anymore."*

Quantitative Analysis Summary

This chapter presented the results of the mixed methods cannabis and female orgasm observational study. The primary outcomes revealed that for women with FOD (52%, N = 202/387), cannabis use before partnered sex increased orgasm frequency (72.8%, n = 147/202, p < .001), improved orgasm satisfaction (67%, n = 136/202, p < .001), or made it easier for 71% of women to orgasm (n = 132/202, p < .001).

The study found the following variables to be statistically significant. All resulted in a more positive orgasm response among the study participants:

- reason for cannabis use before partnered sex for "all" women (N = 387, p < .001) and women with FOD (N = 202, p = .022),
- partnered sex frequency for women with FOD (N = 202, p = .035),
- mental health diagnosis for "all" women (N = 387, p = .004),

- sexual abuse history for “all” women ($N = 387$, $p = .003$), and
- primary intake method for “all” women ($N = 387$, $p < .001$).

Qualitative Analysis Summary

The largest groups of women who reported FOD preferred sativa or sativa dominant strains (35%, $n = 7/20$) or did not know which strain they used (35%, $n = 7/20$). Most women with FOD reported one or more mental health diagnoses (65%, $n = 13/20$). Of these women with a mental health diagnosis, the largest group preferred indica dominant strains (46%, $n = 6/13$). Two commonly used cannabis strains by women with and without FOD were Blue Dream and Girl Scout Cookies.

Women with FOD reported that they experienced a process of discovery of using cannabis before sex that was unrelated to sex (45%, $n = 9/20$), with 65% reporting ($n = 13/20$) that they usually, sometimes, most times, or always, used cannabis before sex with their partner. The majority (75%) reported cannabis’ effect resulting in the following: stronger or more intense orgasms, ease of orgasm, multiple orgasms, or expanded types of orgasms. The largest group of women with FOD reported that their FOD began when they began having partnered sex (45%, $n = 9/20$), with the majority reporting that they never sought treatment for their FOD (60%, $n = 12/20$).

The majority of “all” women interviewed, with and without FOD (87%, $n = 5/40$), smoked flower or used vape pens as their primary intake method, knew their dosage and timing for cannabis use before sex, reported they could have orgasms in expanded ways when they used cannabis before partnered sex, and used cannabis before sex for similar reasons.

Chapter Summary

Cannabis use before partnered sex helped women with and without FOD increase orgasm frequency (72.8%, n =147/202, $p < .001$), improved orgasm satisfaction (67%, n = 136/202, $p < .001$), and made it easier for 71% of women to orgasm (n = 132/202, $p < .001$). Women with or without FOD who used cannabis more frequently (N = 202, $p < .001$) reported a mental health diagnosis (N = 387, p = .004), sexual abuse history (N = 387, p = .003), or experienced a more positive orgasm response when using cannabis before partnered sex. The primary intake method for women with or without orgasm difficulty (N = 387, $p < .001$) was statistically significant in creating a more positive orgasm response.

Women with FOD who had partnered sex more frequently experienced a more positive orgasm response with reasons of cannabis use for pain or sex resulting in a more positive orgasm response (N = 202, p = .035). The largest group of women with FOD reported that their FOD began when they started having partnered sex (45%, n = 9/20), that orgasm took too long (30%, n = 6/20), with most reporting that they never sought treatment (60%, n = 12/20). Ninety percent (n = 18/20) reported that cannabis use before partnered sex was a process of discovery, with the largest group reporting that they discovered cannabis use before sex for reasons unrelated to sex (45%, n = 9/20).

The largest group of women with FOD preferred sativa or sativa-dominant strains (35%, n = 7/20), with those reporting a mental health diagnosis preferring indica or indica-dominant strains. The largest group of women with FOD reported that they noticed cannabis' effect on orgasm from immediate to within a few weeks/few uses (40%, n = 8/20).

Timing, dosage, and reasons for cannabis use were similar for women with and without FOD, with the majority smoking flower or vape pens (87%, n = 35/40). An expanded range of

orgasms was reported by women with and without FOD, including an increase in multiple orgasms and experiencing orgasm in various ways, including an increase in experiencing orgasm during penetrative sex and through penetration only.

Chapter 5: Discussion, Conclusions, and Future Considerations

Introduction

This chapter presents the findings, conclusions, and future considerations of an observational study of cannabis use and female orgasm. The study between March 24, 2022, and February 28, 2023, evaluated the effects of cannabis use before partnered sex of women with and without FOD. This study is the first to investigate the relationship between cannabis use and orgasm response in women, with and without FOD.

This study's hypothesis that cannabis helps women orgasm who have Situational FOD (also referred to in this study as FOD during partnered sex) was supported in this study by statistically significant results. Specifically, cannabis use before partnered sex helped women who have FOD ($p < .001$), increased orgasm frequency ($p < .001$), enhanced orgasm satisfaction ($p < .001$), and eased FOD ($p < .001$).

This study's statistically significant findings add to the 50-year body of research that consistently revealed that cannabis helps women with FOD (Goode, 1969, 1970, 1972; Kasman et al., 2020; Koff, 1974; Lynn et al., 2019; Moser et al., 2023; Wiebe & Just, 2019). While a few studies and some anecdotal findings suggested that cannabis inhibited female orgasm (Johnson et al., 2004; Palamar et al., 2016), these studies did not evaluate dosage, which is recognized as an important factor in sexual functioning and orgasm response (Gorzalka et al., 2010).

In the following section, the researcher summarizes this study's findings related to each research question. Similarities and differences between this study's findings and the existing body of cannabis, sex, and female orgasm research are presented, including this study's unanticipated findings. The study's strengths and limitations precede a presentation of the

study's conclusions and future recommendations for women with and without FOD, practitioners, and suggested areas in which future research may be most beneficial.

Research Question #1: Does Cannabis Help Women Orgasm Who Report FOD?

The answer to this research question is "yes." This study specifically evaluated the orgasm response of women with and without FOD who used cannabis before engaging in partnered sex. In such circumstances, the study found that cannabis helped women orgasm who reported FOD ($p < .001$), increased orgasm frequency ($p < .001$), improved orgasm satisfaction ($p < .001$), and made it easier for women to orgasm ($p < .001$).

Previous studies have examined the use of cannabis in general (Goode, 1969, 1970, 1972; Halikas et al., 1982; Kasman et al., 2020; Koff, 1974; Moser et al., 2023); others have specifically examined cannabis use just prior to engaging in sexual activity (Haines & Green, 1970; Lynn et al., 2019; Moser et al., 2023; Wiebe & Just, 2019). These studies suggested that cannabis use in general and cannabis use before sex lead to more orgasms for women (Goode, 1969, 1970, 1972; Kasman et al., 2020; Koff, 1974; Lynn et al., 2019; Moser, 2019; Weller & Halikas, 1984). In addition, some studies suggested that the frequency of cannabis use may also lead to more orgasms (Goode, 1969, 1970, 1972; Kasman et al., 2020; Lynn et al., 2019; Moser, 2019; Weller & Halikas, 1984).

None of the above studies specifically addressed the issue of women and FOD, despite widespread acknowledgment that FOD is a serious public health concern that impairs the quality of women's lives (Laumann et al., 1999). Indeed, up to 41% of women worldwide have FOD (Laumann et al., 2005), a statistic unchanged for 50 years (Kontula & Miettinen, 2016).

Research Question #2: Does Cannabis Enhance Orgasm Intensity, Frequency, and/or Quality for Women Who Report FOD?

This study demonstrated statistically significant results that cannabis use before partnered sex increased orgasm frequency for women with or without FOD ($p < .001$). In addition, earlier anecdotal reports of increased orgasm intensity and quality received support from this study's respondents in their survey comments and interview responses. It may be that women's increase in orgasm satisfaction correlated to cannabis enhancing the intensity and quality of orgasm since increased orgasm satisfaction was statistically significant in this study ($p < .001$).

Statistically significant results for increased orgasm quality or increased orgasm intensity appears in 50 years of cannabis and sex research, both cannabis use in general or cannabis use before sex (Goode, 1969, 1970, 1972; Kaplan, 1974; Koff, 1974; Lynn et al., 2019; Lewis, 1970; Moser et al., 2023; Palamar et al., 2016; Tart, 1971; Weller & Halikas, 1982; Wiebe & Just, 2019).

Research Question #3: Does Cannabis, When Used Before Sex, Help Women Orgasm Who Report FOD?

The direct answer to this question is "yes," based on the statistically significant results found in this study. This study revealed that 147 out of 202 women with FOD, or 72.7% ($p < .001$), experienced an improvement in the frequency of experiencing orgasm with cannabis before partnered sex compared to when cannabis was absent before partnered sex. This study's results support Lynn et al. (2019), who found that women who used cannabis more frequently were twice as likely to orgasm, and Moser et al. (2023), who found that 40% of women who used cannabis, reported increased ability to have more than one orgasm per sexual encounter. Furthermore, Kasman et al. (2020) found respondents who indicated a more positive orgasm

experience when using cannabis more frequently to be statistically significant. The results also gave credence to 50 years of anecdotal reporting on cannabis helping women who reported FOD (Goode, 1969, 1970, 1972; Koff, 1974; Lewis, 1970; Weller & Halikas, 1982; Wiebe & Just, 2019).

Research Question #4: Does Cannabis Affect Lifelong, Acquired, or Situational FOD?

This study revealed statistically significant results for women with Situational FOD who experienced a more positive orgasm response when using cannabis before partnered sex. Anecdotal results from comments made in the survey and the interviews revealed that cannabis use before partnered sex helped women recover from Acquired FOD, meaning women who lost their ability to orgasm in all situations, both partnered and solo, and regained their ability to orgasm from using cannabis before sex. Additionally, women with Lifelong FOD and women who had never orgasmed learned to orgasm by using cannabis before sex.

These results of cannabis use positively affecting Lifelong, Acquired, or Situational FOD support past anecdotal reports by researchers (Goode, 1969, 1970, 1972; Koff, 1974; Lewis, 1970), sex therapists (Yagoda, 2017), sex counselors (Michelson, 2020) and cannabis specialists (inhaleMD, 2017) discussed further in this .

Cannabis as a Sexual Medicine for FOD

In 1969, Erich Goode published *Marijuana and Sex*, the first known scholarly study of the relationship between cannabis and sex. While written as a sociological survey based on extensive first-hand accounts of cannabis use, the work specifically pointed to cannabis helping women with FOD. Goode's study pointed directly and indirectly to cannabis helping women with FOD.

In 1970 two more cannabis studies took place, one specific to cannabis and sex (Lewis, 1970) and the other related to cannabis use patterns (Haines & Green, 1970). Both noted that cannabis increased sexual pleasure and orgasm intensity. In her book, *The Sexual Power of Marijuana* (1970), Lewis presented her findings on marijuana and its impact on women who experience difficulty achieving orgasm. In a chapter entitled "Marijuana and Frigidity" (pp. 62-74), Lewis addressed how cannabis could potentially assist women and provided insights into the connection between cannabis usage and improved orgasmic experiences for women (1970, pp. 62-74).

Numerous cannabis and sex reports have appeared since 1970, most notably in the last 20 years. The results consistently point to cannabis increasing women's orgasm frequency, helping women orgasm, or increasing the quality or intensity of orgasm (Baggio et al., 2020; Gorzalka et al., 2010; Halikas & Weller, 1982; Kasman et al., 2020; Lynn et al., 2019, 2020; Moser et al., 2023; Palamar et al., 2016; Smith et al., 2010; Sumnall et al., 2006; Sun & Eisenberg, 2017). However, researchers noted cannabis inhibiting female orgasm in only two studies; neither evaluated dosage (Johnson et al., 2004; Palamar et al., 2016).

More recently, Cannabis Specialist Jordan Tishler, President and CMO of inhaleMD, Inc., in Cambridge, Massachusetts, regularly prescribes cannabis for female FOD and other male and female sexual disorders (inhaleMD, 2017). Sex therapist, Diane Urman, based in San Fransisco, California, recommends cannabis to female clients with FOD or who have Lifelong FOD (Zinko, 2019).

Cannabis as a "Tailored" Sexual Medicine

In 1997, Heiman and Meston stated that Acquired FOD and Situational FOD required tailored interventions. It seems that cannabis serves as a "tailored" intervention for FOD.

Cannabis treats different FOD sub-types caused by different issues, including psychological conditions such as anxiety, PTSD, women with sexual trauma, women with medical issues such as loss of orgasm caused by surgery, women with a mental health diagnosis, and women taking prescription medication, all of which this study covered. “Tailored” cannabis intervention that matches an individual’s endocannabinoid system, with appropriate cannabis use dosage and timing before partnered sex, is worthy of future research.

New Findings Discovered in this Observational Mixed-Methods Study

This section presents findings largely uncovered through the observational component of this mixed-methods study. These new findings provide opportunities for further discussion and future research.

Reasons for Cannabis Use Before Partnered Sex Statistically Significant

This study revealed that the reasons for using cannabis before partnered sex for women who reported FOD were statistically significant: to reduce pain or to enhance sex yielded the most positive orgasm results ($N = 202$, $p = .022$).

Kasman and colleagues conducted a study in 2020 and did not discover any statistically significant reasons for cannabis use. One possible reason why the present study found cannabis use significant, but Kasman et al.’s study did not, is due to differences in how the Kasman study evaluated cannabis use. Specifically, the present study focused on women with FOD who used cannabis before sex, while Kasman et al.’s study did not specify cannabis use before sex but instead looked at the frequency and reasons for use.

Significance of Length of Time Using Cannabis Before Partnered Sex

Women in this study who reported FOD had a more positive orgasm response regardless of how long they used cannabis before sex. This finding related to the length of time using

cannabis before partnered sex not affecting orgasm response drew support from this study's quantitative and qualitative results.

Table 9 in Chapter 4 highlighted six women for whom cannabis use before partnered sex immediately and positively affected their orgasm. The demographics and psychographics of such women deserve further research to evaluate and explore why some women have an immediate response to using cannabis before sex while others take longer, and a few have not yet had an orgasm response from cannabis use before partnered sex.

Cannabis Helped Women Orgasm Who Reported Lifelong, Acquired, or Situational FOD

This study found that cannabis use before sex helped women who reported Situational FOD, Acquired FOD, or Lifelong FOD. The study also provided statistically significant evidence that cannabis use before partnered sex helps women who have Situational FOD, also referred to in this study as FOD during partnered sex, and anecdotal findings that revealed that women who had Lifelong or Acquired FOD experienced a positive orgasm response when using cannabis before sex.

This finding is worthy of further exploration. Perhaps future studies can group women by FOD sub-types when evaluating cannabis use to understand further how cannabis helps women orgasm who have different FOD sub-types.

Women Using Cannabis Before Sex are Healing from FOD

This study revealed that women who reported FOD and successfully used cannabis before sex overcame their FOD. When conducting the literature review for this study, the researcher did not find cannabis listed as a treatment modality for FOD. Perhaps an ongoing exploration of new literature comparing cannabis to other FOD treatment modalities would be valuable.

Prescription Drug Use Did Not Impact Orgasm Response

This study revealed that prescription medication did not affect orgasm response for women with and without FOD who used cannabis before sex. Some prescription drugs are well-known contributors to female sexual dysfunction (Siddique, 2003). This finding deserves further study as cannabis appears to mitigate sexual dysfunction caused by some prescription medications.

Cannabis Use Before Sex Resulted in More Orgasms for Sexual Abuse Survivors

This study revealed that 90% (*n* = 67/74) of women with FOD and a sexual abuse history orgasmed when using cannabis before sex. Women interviewed in this study who were sexual abuse survivors mentioned how cannabis helped calm their traumatic thoughts during sex and "lower their mental walls."

Being that FOD is the number one sexual complaint of women with sexual abuse histories (Kinzl et al., 1995) and THC in cannabis reduces activity in the hippocampus and amygdala (Cuttler et al., 2018; Rabinak et al., 2020), the parts of the brain that store and react to traumatic memories (Rabinak et al., 2020), it may be worthy for future research to evaluate cannabis as a sexual medicine for women who have sexual abuse histories and FOD.

Fewer Sexual Issues Reported by Women Who Use Cannabis Before Sex

This study found that only 23% (*n* = 47/202) of women with FOD and 15% (*n* = 28/185) without FOD reported additional sexual issues. This finding correlates with Kasman et al. (2020) finding that women who used cannabis had fewer than average sexual dysfunctions. The Kasman et al. (2020) study and the results from this study reveal that cannabis use before sex could help reduce the highly prevalent medical issue of female sexual dysfunction (FSD), in addition to helping women with FOD.

Factors that Distinguish this Observational Study from Prior Research

This section presents factors distinguishing this observational study from prior cannabis, sex, and female orgasm research. While this study had different design criteria than other studies, it yielded similar primary outcomes of more frequent, easier, and more satisfying orgasms.

This study presented a mixed method design. Most recent studies have been quantitative (Kasman et al., 2020; Lynn et al., 2019; Moser et al., 2023; Smith et al., 2010; Sun & Eisenberg, 2017; Wiebe & Just, 2019). Furthermore, this study only analyzed partnered sex, whereas recent studies did not consistently control for this variable, and sex was not well-defined (Lynn et al., 2019; Kasman et al., 2020).

The survey for this study excluded women who had used other recreational substances in the last 30 days. Such exclusions were a crucial aspect of the study's design, as the researcher wished to ensure that the data collected on the impact of cannabis on orgasms was accurate and did not reflect the influence of additional recreational substances. Other recent studies on cannabis and sex, such as Kasman et al. (2020), Lynn et al. (2019), and Moser et al. (2023), did not indicate whether they excluded female participants who used other recreational substances.

Internet Communities Support Women With FOD

Through this research, the researcher found that posting the notices of the study's survey on social media websites and, subsequently, participant interviews revealed that women are turning to social media groups to educate themselves and each other about cannabis and female orgasm. Abundant cannabis and female orgasm/sex resources are on the web, combined with the anonymity of accessing information through online communities on platforms like Reddit and Facebook, which allows women to ask questions they usually would not ask a friend or a doctor. Indeed, a recent study noted that doctors rarely screen female sexual problems as a general

practice (Schaffer, 2023), therefore it makes sense that unaddressed sexual problems are being addressed in often anonymous social media communities.

Women Who Use Cannabis Before Sex Appear Sexually Confident

The researcher noticed that most women she interviewed in this study appeared to have sexual assertiveness and sexual confidence. The interviews also revealed that most women preferred certain cannabis strains they liked to use before sex, had a preferred intake method, and knew the dosage and timing of when to use cannabis before partnered sex that worked best for them. Furthermore, women shared whether they used cannabis with or without their partner, meaning that even if their partner did not use cannabis before sex, that did not stop them from using it. This practice, in itself, reveals personal and sexual confidence.

Perhaps it is orgasm or the ability to orgasm with a partner that gives women this confidence. Confidence and orgasm would be worthy of additional future research. Some studies suggest that orgasm frequency in women appears highly correlated with psychological factors such as sexual assertiveness (McNichols, 2021, para. 1).

Strengths and Limitations

In this study, the FSFI orgasm sub-scale questions, with and without cannabis use before sex, provided the core study variable to evaluate the effect of cannabis on orgasm frequency, orgasm satisfaction, and orgasm ease. A limitation in this study's design is that for women who used cannabis before sex "every time" in the last 30 days, they presumably reported their answers to the question about not using cannabis before sex from a period outside the scope of the 30 days. Therefore, this design characteristic had implications of being a confounding variable in the study.

Cannabis use before sex did not help all women orgasm. While only 1.9% of women with FOD who used cannabis before partnered sex reported never having an orgasm, 8% reported "almost never or never" orgasming regardless of their use of cannabis before sex. Some women reported they could orgasm from masturbation but not during partnered sex.

In reporting the qualitative results, the researcher identified factors that she recognized could affect cannabis before sex, not affecting orgasm. Three possibilities arose, rarely using cannabis before sex, recently becoming sexually active, and not masturbating. These factors deserve further exploration in future research.

Conclusions and Future Considerations

This observational study added to the literature of statistically significant results that cannabis helps women orgasm, helps women orgasm who previously reported FOD, enhances women's sexual functioning, and can reduce the persistently high percentage of women suffering from the serious public health issue of FOD. Future recommendations, however, focus on solving the serious public health issue of FOD and for cannabis to receive recognition as a sexual medicine.

Randomized Controlled Trials Are Needed

A literature review revealed that no randomized controlled trials (RCT) evaluated FOD and cannabis use. RCTs are needed to evaluate FOD and cannabis use. RCTs are also needed to evaluate cannabis' effect on FOD and co-morbid conditions such as mental health diagnosis and sexual abuse history or a combination of FOD, mental health diagnosis, and sexual abuse histories.

Add FOD As a Condition of Use for Medical Cannabis Programs

This study's results, combined with 50 years of research, encourage the addition of FOD as a condition of use for medical cannabis. In addition to the research findings, there are many reasons for this recommendation.

FOD is a serious public health issue (Laumann et al., 1999); up to 41% of women worldwide suffer from this condition (Laumann et al., 2005). This high percentage of women suffering from FOD has remained unchanged for 50 years (Kontula & Miettinen, 2016). There are no empirically validated treatments for FOD during partnered sex (Heiman & Meston, 1997). The only empirically validated treatment for FOD, Directed Masturbation, is limited to those women who have never experienced orgasm (LoPiccolo & Lobitz, 1972). Finally, FOD during partnered sex, also known as Situational FOD, is the most commonly reported FOD subtype (Krans, 2018). This study found that 71.3% of women with FOD reported this condition.

Cross-over RCTs as Evidence for Cannabis Treating FOD. Researchers have conducted cross-over RCTs on known causes of FOD, namely, anxiety and PTSD. Using cross-over RCTs, Whiting et al. (2015) successfully explored cannabis' efficacy on medical conditions when existing RCTs lacked studies. Cross-over RCTs are therefore worthy of exploration to validate FOD's co-morbid conditions of anxiety and PTSD since these conditions have already received medicinal approval for the use of marijuana in a number of U.S. states.

Acknowledge FOD as a Public Health Issue

FOD is a serious public health issue and has been recognized as such in research (Laumann et al., 1999). However, there is a 50-year unchanged statistic of the persistently high rate of women with FOD (Kontula & Miettinen, 2016), with little evidence of new treatments since the 1980s (Marchand, 2020). The question must be asked, "Why?" While the answer to

that question is outside the scope of this study, this researcher recommends that leading international organizations, such as the World Health Organization and the United Nations, acknowledge FOD as a serious public health issue that affects the quality of life and health (Laumann et al., 1999) of up to 41% of women worldwide (Laumann et al., 2005).

Include FOD in Diagnostic Testing and Screening

Recently, FOD, a symptom of female sexual dysfunction, was acknowledged as under-recognized and untreated in women with heart failure (Schaffer, 2023) despite studies showing that 56% of women with FSD had heart failure. Nikolaos Pyrgidis stated, "Addressing female sexual dysfunction in everyday clinical practice is of paramount importance to ultimately improve the quality of life in women with heart failure" (Schaffer, 2023, para. 2).

Recognize Cannabis Treatment for FOD as a Right

In 2014, the World Association for Sexual Health created the *Declaration of Sexual Rights*, which incorporates nine sexual rights that are human rights. Sexual Right Number 8 states, "Everyone has the right to enjoy the benefits of scientific progress and its applications in relation to sexuality and sexual health" (World Association of Sexual Health, 2014, p. 2).

To that end, for 50 years, research has shown that cannabis assisted women with FOD, including the statistically significant results from this research. Cannabis-assisted orgasm for women with FOD must be considered a right to scientific progress and a sexual and human right. (Appendix V presents the "World Association for Sexual Health's Declaration of Sexual Rights" and the "Nine Sexual Rights that Are Human Rights.")

Chapter Summary

This observational study presents strong evidence suggesting that women with difficulty achieving orgasm may benefit from using cannabis before engaging in sexual activity. The

results of the study indicate that cannabis can enhance both the frequency and pleasure derived from orgasms, as well as making it easier for women to reach orgasm in the first instance. These results are consistent with a substantial body of research spanning five decades. Hopefully, these statistically significant findings will garner sufficient attention to spur further research and recognition regarding cannabis' role as a sexual medicine.

Specifically, the researcher suggests conducting randomized controlled trials to explore the relationship between cannabis and female orgasms. It is important to expand upon existing research to understand how cannabis can contribute to improving female sexual experiences. In addition to this call for enhanced scientific investigation and recognition at national levels, international organizations are encouraged to acknowledge FOD as an important concern in medical and social contexts. Hopefully, these efforts will generate broader awareness about this issue and result in effective solutions to improving women's sexual health.

REFERENCES

Adam, F., Géonet, M., Day, J., & Sutter, P. D. (2014). Mindfulness skills are associated with female orgasm? *Sexual and Relationship Therapy, 30*(2), 256–267. https://doi.org/10.1080/14681994.2014.986085

Alcover, C. M., & Mazo, R. (2012). Brain plasticity and habit in William James: An antecedent for social neuroscience. *Psychologia Latina*, *3*(1), 1-9. https://doi.org/10.5209/rev_PSLA.2012.v3.n1.38737

Aldrich, M. R. (1977). Tantric cannabis use in India. *Journal of Psychedelic Drugs*, *9*(3), 227-233. https://doi.org/10.1080/02791072.1977.10472053

Amberson, J. I., & Hoon, P. W. (1985). Hemodynamics of sequential orgasm. *Archives of Sexual Behavior*, *14*(4), 351-360. https://doi.org/10.1007/BF01550850

American Psychiatric Association (APA). (1952). *Diagnostic and statistical manual of mental disorders.* (1st ed.).

American Psychiatric Association (APA). (1968). *Diagnostic and statistical manual of mental disorders.* (2nd ed.).

American Psychiatric Association (APA). (1973). *Diagnostic and statistical manual of mental disorders.* (2nd ed., rev.).

American Psychiatric Association (APA). (1980). *Diagnostic and statistical manual of mental disorders.* (3rd ed.).

American Psychiatric Association (APA). (1987). *Diagnostic and statistical manual of mental disorders.* (3rd ed., rev.).

American Psychiatric Association (APA). (1994). *Diagnostic and statistical manual of mental disorders.* (4th ed.).

American Psychiatric Association (APA). (2000). *Diagnostic and statistical manual of mental disorders.* (4th ed., text rev.).

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders.* (5th ed.; *DSM-5*). https://doi.org/10.1176/appi.books.9780890425596

Baggio, M., Chong, A., & Simon, D. (2020). Sex, marijuana and baby booms. *Journal of Health Economics, 70*, 102283. https://doi.org/10.1016/j.jhealeco.2019.102283

Bataillon, C. (13 August 2023). Dr. Tishler and Suzanne Mulvehill: Cannabis a treatment for female orgasmic difficulty. In *Camille Bataillon - Clinical Sexologist & Intimacy Coach*. [Audio podcast episode 30]. https://www.camillebataillon.com/x-dr-tishler-and-suzanne-mulvehill-cannabis-a-treatment-for/

Beasley, M. (2019). *Cannabis usage pre-masturbation in women: Effects on orgasm and pleasure* (Publication No. 2587849) [Master's thesis, New Mexico State University]. ProQuest Dissertations and Theses Global.

Beck, K. (2023, August 4). What is the Tukey HSD test? *Sciencing*. https://sciencing.com/what-is-the-tukey-hsd-test-12751748.html

Becker, H. S. (1953). *Becoming a marihuana user*. Bobbs-Merrill.

Bedse, G., Hill, M. N., Patel, S. (2020). 2-arachidonoylglycerol modulation of anxiety and stress adaptation: From grass roots to novel therapeutics. *Biological. Psychiatry, 88*(7), 520–530. https://doi.org/10.1016/j.biopsych.2020.01.015

Benny, G. (2015, April 1). *Theoretical and conceptual frameworks*. Kursus Persediaan Ijazah Sarjana [Conference]. Malaysia.

Berridge, K. C., & Kringelbach, M. L. (2015). Pleasure systems in the brain. *Neuron*, *86*(3), 646–664. https://doi.org/10.1016/j.neuron.2015.02.018

Beukelman, T., & Feldman, B. M. (2021). Understanding clinical investigations. In R. E. Petty, R. M. Laxer, C. B. Lindsley, L. R. Wedderburn, E. D. Mellins, E. D., & R. C. Fuhlbrigge. R. C. (Eds.). *Textbook of pediatric rheumatology* (8th ed.), pp. 65-82. Elsevier.

Bhambhvani, H. P., Kasman, A. M., Wilson-King, G., & Eisenberg, M. L. (2020). A survey exploring the relationship between cannabis use characteristics and sexual function in men. *Sexual Medicine, 8*(3), 436–445. https://doi:10.1016/j.esxm.2020.06.002

Bhandari, S. (2019). *Dopamine: What it is & what it does*. WebMD. https://www.webmd.com/mental-health/what-is-dopamine.

Bloomfield, M. A. P., Ashok, A. H., Volkow, N. D., & Howes, O. D. (2016). The effects of Δ9-tetrahydrocannabinol on the dopamine system. *Nature, 539* (7639), 369–377. https://doi.org/10.1038/nature20153

Bluff, R. (2005). Grounded theory: The methodology. In I. Holloway (Ed.), *Qualitative research in health care* (pp. 147-167). Open University Press.

Bohlen, J. G., Held, J. P., Sanderson, M. O., & Boyer, C. M. (1982). Development of a woman's multiple orgasm pattern: A research case report. *Journal of Sex Research, 18*(2), 130–145. https://doi.org/10.1080/00224498209551144

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brewer, C., & Davis, J. (2023, July 24). Female sexuality and cannabis with Suzanne Mulvehill. [Video podcast episode 88]. In *Marijuana Mind Podcast*. https://www.youtube.com/watch?v=BBkEKhn3-Yg

Bromberg, W. (1934). Marihuana intoxication. A clinical study of cannabis sativa intoxication. *American Journal of Psychiatry, 91*, 303–330. https://doi.org/10.1176/ajp.91.2.303

Chapa, H. O., Ramirez, A., & Dawson, D. (2017). Etonogestrel contraceptive implant-associated secondary anorgasmia. *Contraception, 96*(4), 254–256. https://doi.org/10.1016/j.contraception.2017.06.008

Charmaz, K., & Bryant, A. (2011). Grounded theory and credibility. In: D. Silverman (Ed.), *Qualitative Research*. (3rd ed). (pp. 291–309). Sage.

Chen, J., Chen, Y., Gao, Q., Chen, G., Dai, Y., Yao, Z., & Lu, Q. (2018). Impaired prefrontal-amygdala pathway, self-reported emotion, and erection in psychogenic erectile dysfunction patients with normal nocturnal erection. *Frontiers in Human Neuroscience*, *12*, Article 157. https://doi.org/10.3389/fnhum.2018.00157

Chun, Y., Birks, M., Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, *7*. https://doi-org/10.1177/2050312118822927

Corbin, J., & Strauss, A. (2008). Basics of qualitative research: Techniques and procedures for developing grounded theory (*3rd* ed.). Sage.

Corretti, G., & Baldi, I. (2007, August 1). The relationship between anxiety disorders and sexual dysfunction. *Psychiatric Times*, *24*(9), 58-59. https://www.psychiatrictimes.com/view/relationship-between-anxiety-disorders-and-sexual-dysfunction

Costa, R. M., Pestana, J., Costa, D., & Wittmann, M. (2016). Altered states of consciousness are related to higher sexual responsiveness. *Consciousness and Cognition*, *42*(9), 135–141. https://doi.org/10.1016/j.concog.2016.03.013

Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative approaches to research.* Merrill/Pearson Education.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. (International student edition). Sage.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson Education.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed method approaches*. Sage.

Cuntim, M., & Nobre, P. (2011). The role of cognitive distraction on female orgasm. *Sexologies, 20*(4), 212–214. https://doi.org/10.1016/j.sexol.2011.08.001

Cuttler, C., Spradlin, A., & McLaughlin, R. J. (2018). A naturalistic examination of the perceived effects of cannabis on negative affect. *Journal of Affective Disorders*, *235*, 198–205. https://doi.org/10.1016/j.jad.2018.04.054

Dalziel, J. (2020a, February 12). *Let's talk about sex! And cannabis – Part 1*. Canada House Clinics. https://canadahouseclinics.ca/2020/02/12/lets-talk-about-sex-and-cannabis-part-1/

Dalziel, J. (2020b, February 14). *Let's talk about sex! And cannabis – Part 2*. Canada House Clinics. https://canadahouseclinics.ca/2020/02/14/lets-talk-about-sex-and-cannabis-part-2/

Darling, C. A., Davidson, J. K., & Jennings, D. A. (1991). The female sexual response revisited: Understanding the multiorgasmic experience in women. *Archives of Sexual Behavior*, *20*(6), 527–540. https://doi.org/10.1007/bf01550952

Dawley, H. H., Baxter, A. S., Winstead, D. K., & Gay, J. R. (1979). An attitude survey of the effects of marijuana on sexual enjoyment. *Journal of Clinical Psychology, 35*(1), 212–217. https://doi.org/10.1002/1097-4679(197901)35:13.0.co;2-k

Deng, L., Guindon, J., Cornett, B. L., Makriyannis, A., Mackie, K., & Hohmann, A. G. (2015). Chronic cannabinoid receptor 2 activation reverses paclitaxel neuropathy without tolerance or cannabinoid receptor 1-dependent withdrawal. *Biological Psychiatry, 77*(5), 475–487. https://doi.org/10.1016/j.biopsych.2014.04.009

Devane, W., Hanus, L., Breuer, A., Pertwee, R., Stevenson, L., Griffin, G., Gibson, D., Mandelbaum, A., Etinger, A., & Mechoulam, R. (1992). Isolation and structure of a brain constituent that binds to the cannabinoid receptor. *Science, 258*(5090), 1946-1949. https://www.doi.org/10.1126/science.1470919

Dhopeshwarkar, A., & Mackie, K. (2014). CB_2 Cannabinoid receptors as a therapeutic target–What does the future hold? *Molecular Pharmacology, 86*(4), 430–437. https://doi.org/10.1124/mol.114.094649

di Tomaso, E., Beltramo, M., & Piomelli, D. (1996). Brain cannabinoids in chocolate. *Nature, 382*(6593), 677–678. https://doi.org/10.1038/382677a0

Dolgoff, S., & Haase, M. (2023, July 17). These CBD lubes make for less painful and more satisfying sex, per experts. *Prevention*. https://www.prevention.com/sex/g33767458/best-cbd-lube/

Dove, N. L., & Wiederman, M. W. (2000). Cognitive distraction and women's sexual functioning. *Journal of Sex and Marital Therapy, 26*(1), 67–78. https://doi.org/10.1080/009262300278650https://doi.org/ 10.1080/009262300278650

Drew, W. G., & Miller, L. L. (1974). Cannabis: Neural mechanisms and behavior–A theoretical view. *Pharmacology, 11*(1), 12–32. https://www.doi.org/10.1159/000136463

Dubray, S., Gérard, M., Beaulieu-Prévost, D., & Courtois, F. (2017). Validation of a self-report questionnaire assessing the bodily and physiological sensations of orgasm. *Journal of Sexual Medicine, 14*(2), 255–263. https://doi.org/10.1016/j.jsxm.2016.12.006

Dubuc, B. (2012, March). *The brain from top to bottom: The evolutionary layers of the human brain*. https://thebrain.mcgill.ca/flash/i/i_05/i_05_cr/i_05_cr_her/i_05_cr_her.html

Dwarakanath, C. (1965). Use of opium and cannabis in the traditional systems of medicine in India. *Bulletin on Narcotics, 17*(1), 15–19.

Ehrhart, J., Obregon, D., Mori, T., Hou, H., Sun, N., Bai, Y., Klein, T., Fernandez, F., Tan, J., & Shytle, R. D. (2005). Stimulation of cannabinoid receptor 2 (CB_2) suppresses microglial activation. *Journal of Neuroinflammation, 2*, 29. https://doi.org/10.1186/1742-2094-2-29 . https://doi.org/10.1186/1742-2094-2-29

Ellis, H. (1936). *Studies in the psychology of sex*. Random House.

Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research, 15*(2), 195–219. https://doi.org/10.1108/10662240510590360

Everaerd, W., & Dekker, J. (1982). Treatment of secondary orgasmic dysfunction: A comparison of systematic desensitization and sex therapy. *Behavior Research and Therapy, 20*(3), 269–274. https://doi.org/10.1016/0005-7967(82)90145-0

Fahs, B. (2014). Coming to power: Women's fake orgasms and best orgasm experiences illuminate the failures of (hetero)sex and the pleasures of connection. *Culture, Health & Sexuality, 16*(8), 974–988. https://doi.org/10.1080/13691058.2014.924557

Feeney, D. M. (1976). The marijuana window: A theory of cannabis use. *Behavioral Biology*, *18*(4), 455–471. http://doi.org/10.1016/s0091-6773(76)92488-3

Flick, U. (2018). *The Sage handbook of qualitative data collection*. Sage.

Fowler, F. (2009). *Survey research methods* (4th ed.). Sage.

Frey, B. (2018). The SAGE encyclopedia of educational research, measurement, and evaluation. Sage. https://doi.org/10.4135/9781506326139

Frith, H., & Gleeson, K. (2004). Clothing and embodiment: Men managing body image and appearance. *Psychology of Men & Masculinity*, *5*(1), 40–48. https://doi.org/10.1037/1524-9220.5.1.40

Fuss, J., Bindila, L., Wiedemann, K., Auer, M. K., Briken, P., & Biedermann, S. V. (2017). Masturbation to orgasm stimulates the release of the endocannabinoid 2-arachidonoylglycerol in humans. *Journal of Sexual Medicine, 14*(11), 1372–1379. http://doi.org/10.1016/j.jsxm.2017.09.016

Gephart, R. P. (2004). Qualitative research and the academy of management journal. *Academy of Management Journal*, *47*(4), 454–462. https://doi.org/10.5465/amj.2004.14438580

Getz, W. D., & McKnight, C. E. (1972). The marijuana dilemma and the Army of the seventies: Group Study Project-Group Research Report. U.S. Army War College.

Glaser, B. G., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Aldine.

Goldenberg, S. (2019). Introduction to CBD. *Journal of Continuing Education Topics & Issues*, *21*(3), 58–62.

Goldstein, I. (2010). Orgasmic Anhedonia/PDOD. San Diego Sexual Medicine. http://sandiegosexualmedicine.com/female-issues/orgasmic-anhedonia-pdod

Goode, E. (1969). Marijuana and sex. *Evergreen Review, 66,* 19-21.

Goode, E. (1970). *The marijuana smokers.* Basic Books.

Goode, E. (1972). Sex and marijuana. *Sexual Behavior, 2,* 45–51.

Gorzalka, B. B., Hill, M. N., & Chang, S. C. (2010). Male–female differences in the effects of cannabinoids on sexual behavior and gonadal hormone function. *Hormones and Behavior*, *58*(1), 91–99. https://doi.org/10.1016/j.yhbeh.2009.08.009

Green, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, *11*(3), 255–274. https://doi.org/10.3102/01623737011003255

Gunduz-Cinar, O. (2020). The endocannabinoid system in the amygdala and modulation of fear. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *105*(3), 110116. https://doi.org/10.1016/j.pnpbp.2020.110116

Haines, L., & Green, W. (1970). Marijuana use patterns. *British Journal of Addiction to Alcohol and Other Drugs*, *65*(4), 347–362. https://doi.org/10.1111/j.1360-0443.1970.tb03954.x

Halikas, J., Weller, R., & Morse, C. (1982). Effects of regular marijuana use on sexual performance. *Journal of Psychoactive Drugs, 14*(1–2), 59–70. https://doi.org/10.1080/02791072.1982.10471911

Halsey, A., Kaufman, G., Shah, M., & Worthy, V. (2021). *The state of cannabis law: A fifty state compendium*. Wolters Kluwer.

Hanson, R. (2012, February 4). *Managing the caveman/cavewoman brain in the 21st century*. [Conference session]. Bridging the hearts and minds of youth conference. UCSD Center for Mindfulness. http://www.wisebrain.org/files/slides/UCSD_Caveman_Feb2012.pdf

Hanuš, L. O., & Mechoulam, R. (2005). Cannabinoid chemistry: An overview. In R. Mechoulam (Ed.), *Cannabinoids as therapeutics*, pp. 23–46. https://doi.org/10.1007/3-7643-7358-x_2

Heiman, J. R. (2000). Orgasmic disorders in women. In S. R. Leiblum & R. C. Rosen (Eds.), *Principles and practice of sex therapy* (pp. 118–153). Guilford Press.

Heiman, J. R., LoPiccolo, L., & LoPiccolo, J. (1981). The treatment of sexual dysfunction. In A.S. Gurman & D. P. Kniskern, (Eds). *Handbook of family therapy* (pp. 592–630). Brunner/Mazel.

Heiman, J. R., & Meston, M. M. (1997). Empirically validated treatment for sexual dysfunction. *Annual Review of Sex Research, 8*(1), 148–194.

Hermon, H. C. (1969). Preliminary observations on the use of marihuana in psychotherapy. *Marijuana Review 1*(3), 14–17.

Hite, S. (1976). *The Hite report: A nationwide study of female sexuality*. Dell.

Hogg, A. (2003). Web efforts energize customer research. *Electric Perspectives*, *28*(5), 81–83.

Holstege, G., Georgiadis, J. R., Paans, A. M., Meiners, L. C., Van Der Graf, F. H. C. E., & Reinders, A. A. (2003). Brain activation during human male ejaculation. *Journal of Neuroscience*, *23*(27), 9185–9193. https://doi.org/10.1523/jneurosci.23-27-09185.2003

Hu, S. (2014). Pretesting. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research,* pp. 5048–5052. Springer. https://doi-org/10.1007/978-94-007-0753-5_2256

Ibeas, Bih, C., Chen, T., Nunn, A. V., Bazelot, M., Dallas, M., & Whalley, B. J. (2015). Molecular targets of cannabidiol in neurological disorders. *Neurotherapeutics*, *12*, 699-730. https://doi.org/10.1007/s13311-015-0377-3

inhaleMD. (2017). *Marijuana for male and female sexual dysfunction in Boston, Massachusetts*. https://inhalemd.com/marijuana-male-female-sexual-dysfunction-boston-massachusetts/

IsHak, W. W., Bokarius, A., Jeffrey, J. K., Davis, M. C., & Bakhta, Y. (2010). Disorders of orgasm in women: A literature review of etiology and current treatments. *Journal of Sexual Medicine, 7*(10), 3254–3268. https://doi.org/10.1111/J.1743-6109.2010.01928.X

James, W. (1890). *The principles of psychology* (Vol. 1). Henry Holt and Co. https://doi.org/10.1037/10538-000

Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy, 5*(4), 87-88. https://doi.org/10.4103/0976-0105.141942

Jarvik, M., & Brecher, E. (1977). Drugs and sex: Inhibition and enhancement. In J. Money & H. Musaph (Eds.), Handbook of sexology (pp. 1095–1106). North Holland Biomedical.

Johnson, J. (2020, March 19). Everything you need to know about CBD oil. *MedicalNewsToday*. https://www.medicalnewstoday.co/articles/317221.php

Johnson, S. D., Phelps, D. L., & Cottler, L. B. (2004). The association of sexual dysfunction and substance use among a community epidemiological sample. *Archives of Sexual Behavior, 33*(1), 55–63. https://doi-org/10.1023/b:aseb.0000007462.97961.5a

Kaminski, N. E. (1998, December 28). Inhibition of the cAMP signaling cascade via cannabinoid receptors: A putative mechanism of immune modulation by cannabinoid compounds. *Toxicology Letters, 102-103,* 59–63. https://doi.org/10.1016/s0378-4274(98)00284-7

Kaplan, H. S. (1974). *The new sex therapy: Active treatment of sexual dysfunctions*. Baillière Tindall.

Karasu, T., Marczylo, T. H., Maccarrone, M., & Konje, J. C. (2011). The role of sex steroid hormones, cytokines and the endocannabinoid system in female fertility. *Human Reproduction Update, 17*(3), 347–361. https://doi.org/10.1093/humupd/dmq058

Kasman, A. M., Bhambhvani, H. P., Wilson-King, G., & Eisenberg, M. L. (2020). Assessment of the association of cannabis on female sexual function with the female sexual function index. *Sexual Medicine, 8*(4), 699-708. https://doi.org/10.1016/j.esxm.2020.06.009

Kenakin, T. (1987). Agonists, partial agonists, antagonists, inverse agonists and agonist/antagonists? *Trends in Pharmacological Sciences*, *8*(11), 423–426. https://doi.org/10.1016/0165-6147(87)90229-x

Kenya, S. (5 August, 2023). Fixing the orgasm gap [with Suzanne Mulvehill]. [Audio podcast episode 123]. In *Sex in South Beach*. https://sexinsouthbeachwithdrsonjia.libsyn.com/123-fixing-the-orgasm-gap

Kestenbaum, B. (2019). Population, exposure, and outcome. *Epidemiology and biostatistics: An introduction to clinical research* (2nd ed.), pp. 5-6. Springer. https://doi.org/10.1007/978-3-319-97433-0_2

Kilmann, P. R., Mills, K. H., Bella, B., Caid, C., Davidson, E., Drose, G., & Wanlass, R. (1983). The effects of sex education on women with secondary orgasmic dysfunction. *Journal of Sex and Marital Therapy, 9*(1), 79–87. https://doi.org/ 10.1080/00926238308405835

Kinsey, A., Pomeroy, W., Martin, C., & Gebhard, O. (1953). *Sexual behavior in the human female*. Saunders.

Kinzl, J. F., Traweger, C., & Biebl, W. (1995). Sexual dysfunctions: Relationship to childhood sexual abuse and early family experiences in a nonclinical sample. *Child Abuse & Neglect*, *19*(7), 785–792. http://doi.org/10.1016/0145-2134(95)00048-d

Klein, C., Hill, M. N., Chang, S. C., Hillard, C. J., & Gorzalka, B. B. (2012). Circulating endocannabinoid concentrations and sexual arousal in women. *Journal of Sexual Medicine*, *9*(6), 1588–1601. https://doi.org/10.1111/j.1743-6109.2012.02708.x

Koff, W. (1974). Marijuana and sexual activity. *Journal of Sex Research, 10*(3), 194–204. https://doi.org/10.1080/00224497409550850

Kolansky, H., & Moore, W. T. (1972). Toxic effects of chronic marihuana use. *Journal of the American Medical Association, 222*(1), 35–41. https://doi.org/10.1001/jama.222.1.35

Koltai, H., & Namdar, D. (2020). Cannabis phytomolecule 'Entourage'': From domestication to medical use. *Trends in Plant Science*, *25*(10), 976–984. https://doi.org/10.1016/j.tplants.2020.04.007

Komisaruk, B. R., Beyer-Flores, C., & Whipple, B. (2006). *The science of orgasm*. Johns Hopkins University Press.

Komisaruk, B. R., & Whipple, B. (2005). Brain activity imaging during sexual response in women with spinal cord injury. In J. S. Hyde (Ed.), *Biological substrates of human sexuality*. (pp. 109–146). American Psychological Association. https://doi.org/10.1037/11196-005

Komisaruk, B. R., Whipple, B., Crawford, A., Grimes, S., Liu, W. C., Kalnin, A., & Mosier, K. (2004). Brain activation during vaginocervical self-stimulation and orgasm in women with complete spinal cord injury: fMRI evidence of mediation by the vagus nerves. *Brain Research, 1024*(1-2), 77–88. https://doi.org/10.1016/j.brainres.2004.07.029

Komisaruk, B. R., Wise, N., Frangos, E., & Allen, K. (2010). An fMRI time-course analysis of brain regions activated during self-stimulation to orgasm in women [Abstract]. *Society for Neuroscience Abstracts 285*, 6.

Kondracki, N. L., Wellman, N. S., & Amundson, D. R. (2002). Content analysis: Review of methods and their applications in nutrition education. *Journal of Nutrition Education and Behavior*, *34*(4), 224–230. https://doi-org/10.1016/s1499-4046(06)60097-3

Konorski, J. (1948). Conditioned reflexes and neuron organization. Cambridge University Press.

Kontula, O., & Miettinen, A. (2016). Determinants of female sexual orgasms. *Socioaffective Neuroscience & Psychology, 6*(1), 31624. https://doi.org/10.3402/snp.v6.31624

Kosiba, J. D., Maisto, S. A., & Ditre, J. W. (2019). Patient-reported use of medical cannabis for pain, anxiety, and depression symptoms: Systematic review and meta-analysis. *Social Science and Medicine, 233,* 181–192. https://doi.org/10.1016/j.socscimed.2019.06.005

Kossen, J. (2016, July 18). Why does cannabis get you 'high' and make you feel good? *Leafly*. https://www.leafly.com/news/cannabis-101/why-does-cannabis-make-you-feel-good

Krans, B. (2018). *Orgasmic dysfunction*. *Healthline*. *Healthline*. https://www.healthline.com/health/orgasmic-dysfunction

Kratochvil, S. (1994). Vaginální kontrakce při ženském orgasmu. [Vaginal contractions in female orgasm]. *Ceskoslovenska Psychiatrie, 90*(1), 28–33.

Laumann, E. O., Glasser, D., Neves, R., & Moreira, E. (2009). A population-based survey of sexual activity, sexual problems and associated help-seeking behavior patterns in mature adults in the United States of America. *International Journal of Impotence Research*, *21*(3), 171–178. https://doi.org/10.1038/ijir.2009.7

Laumann, E. O., Nicolosi, A., Glasser, D. B., Paik, A., Gingell, C., Moreira, E., & Wang, T. (2005). Sexual problems among women and men aged 40–80 y: Prevalence and correlates identified in the *Global Study of Sexual Attitudes and Behaviors*. *International Journal of Impotence Research*, *17*(1), 39–57. https://doi.org/10.1038/sj.ijir.3901250

Laumann, E. O., Paik, A., & Rosen, R. C. (1999). Sexual dysfunction in the United States. *Journal of the American Medical Association*, *281*(6), 537-544. https://doi.org/10.1001/jama.281.6.537

Letica-Crepulja, M., Stevanović, A., Protuđer, M., Popović, B., Salopek-Žiha, D., & Vondraček, S. (2019). Predictors of sexual dysfunction in veterans with post-traumatic stress disorder. *Journal of Clinical Medicine, 8*(4), 432. https://doi.org/10.3390/jcm8040432

Letourneau, E. J., Resnick, H. S., Kilpatrick, D. G., Saunders, B. E., & Best, C. L. (1996). Comorbidity of sexual problems and posttraumatic stress disorder in female crime victims. *Behavior Therapy, 27*(3), 321–336. https://doi.org/10.1016/s0005-7894(96)80020-7

Levin, R. J. (1981). The female orgasm – A current appraisal. *Journal of Psychosomatic Research, 25*(2), 119–133. https://doi.org/10.1016/0022-3999(81)90099-4

Levin, R. J. (2004). An orgasm is…who defines what an orgasm is? *Sexual and Relationship Therapy, 19*(1), 101–107. https://doi.org/10.1080/14681990410001641663

Lewis, B. (1970). *The sexual power of marijuana.* Wyden.

Libman, E., Fichten, C., & Brender, W. (1984). Prognostic factors and classification issues in the treatment of secondary orgasmic dysfunction. *Personality and Individual Differences, 5*(1), 1–10. https://doi.org/10.1016/0191-8869(84)90132-6

LoPiccolo, J., & Lobitz, W. C. (1972). The role of masturbation in the treatment of orgasmic dysfunction. *Archives of Sexual Behavior, 2*(2), 163–171. https://doi.org/10.1007/BF01541865

Lune, H., & Berg, B. L. (2017). An introduction to content analysis. *Qualitative research methods for the social sciences* (9th ed.) (pp. 181-200). Pearson.

Luscher, C., & Malenka, R. C. (2011). Drug-evoked synaptic plasticity in addiction: From molecular changes to circuit remodeling. *Neuron, 69*(4), 650–663. http://dx.doi.org/10.1016/j.neuron.2011.01.017

Lutz, B. (2009). Endocannabinoid signals in the control of emotion. *Current Opinion in Pharmacology. 9*(1), 46–52. https://doi.org/10.1016/j.coph.2008.12.001

Lynn, B., Gee, A., Zhang, L., & Pfaus, J. G. (2020). Effects of cannabinoids on female sexual function. *Sexual Medicine Reviews, 8*(1), 18–27. https://doi.org/10.1016/j.sxmr.2019.07.004

Lynn, B. K., López, J. D., Miller, C., Thompson, J., & Campian, E. C. (2019). The relationship between marijuana use prior to sex and sexual function in women. *Sexual Medicine*, *7*(2), 192–197. https://doi.org/10.1016/j.esxm.2019.01.003

MacCallum, C. A., & Russo, E. B. (2018). Practical considerations in medical cannabis administration and dosing. *European Journal of Internal Medicine, 49,* 12–19. https://doi.org/10.1016/j.ejim.2018.01.004

Mah, K., & Binik, Y. M. (2001). The nature of human orgasm: A critical review of major trends. *Clinical Psychology Review, 21*(6), 823–856. https://doi.org/10.1016/s0272-7358(00)00069-6

Mameli, M., & Luscher, C. (2011). Synaptic plasticity and addiction: Learning mechanisms gone awry. *Neuropharmacology, 61*(7), 1052–1059. http://dx.doi.org/10.1016/j.neuropharm.2011.01.036

Manta, A. (2021, April). *Buzz 7: Ashley-cannabis, sex and CBD* [Video]. RQS Podcast. https://open.spotify.com/episode/0ClfRrZZFBBBFU6HDY5Z0p

Manti, S., & Licari, A. (2018). How to obtain informed consent for research. *Breathe, 14*(2), 145–152. https://doi.org/10.1183/20734735.001918

Marchand, E. (2020). Psychological and behavioral treatment of female orgasmic disorder. *Sexual Medicine Reviews*, *9*(2), 194–211. https://doi.org/10.1016/j.sxmr.2020.07.007

Marek, M. W. (2020). Re: How to build a conceptual framework in qualitative research? ResearchGate. https://www.researchgate.net/post/How_to_build_a_conceptual_framework_in_qualitative_research/5eef5ab15c222b45dd10f775/citation/download

Masters, W., & Johnson, V. (1966). *Human sexual response.* Little, Brown.

Matheson, J., Sproule, B., Ciano, P. D., Fares, A., Foll, B. L., Mann, R. E., & Brands, B. (2019). Sex differences in the acute effects of smoked cannabis: Evidence from a human laboratory study of young adults. *Psychopharmacology, 237*(2), 305–316. https://doi.org/10.1007/s00213-019-05369-y

Matsuda, L. A., Lolait, S. J., Brownstein, M. J., Young, A. C., & Bonner, T. I. (1990). Structure of a cannabinoid receptor and functional expression of the cloned cDNA. *Nature, 346*(6284), 561–564. https://doi.org/10.1038/346561a0

McCabe, M. P. (1991). The development and maintenance of sexual dysfunction: An explanation based on cognitive theory. *Sexual and Marital Therapy, 6*(3), 245–260. https://doi.org/10.1080/02674659108409602 . https://doi.org/10.1080/02674659108409602

McGovern, K. B., Stewart, R. C., & LoPiccolo, J. (1975). Secondary orgasmic dysfunction. I. Analysis and strategies for treatment. *Archives of Sexual Behavior, 4*(3), 265–275. https://doi.org/10.1007/bf01541626

McMahon, C. G. (2007). Premature ejaculation. *Indian Journal of Urology, 23*(2), 97-108. https://doi-org/10.4103/0970-1591.32056

McNichols, N. K. (2021, June 2). 5 key new findings about the female orgasm. *Psychology Today*. https://www.psychologytoday.com/us/blog/everyone-top/202106/5-key-new-findings-about-the-female-orgasm

Mechoulam, R., Ben-Shabat, S., Hanus, L., Ligumsky, M., Kaminski, N. E., Schatz, A. R., Gopher, A., Almog, S., Martin, B. R., Compton, D. R., Pertwee, R. G., Griffin, G., Bayewitch, M., Barg, J., & Vogel, Z. (1995). Identification of an endogenous 2-monoglyceride, present in canine gut, that binds to cannabinoid receptors. *Biochemical Pharmacology, 50*(1), 83–90. https://doi.org/10.1016/0006-2952(95)00109-D

Mechoulam, R., Hanuš, L. O., Pertwee, R., & Howlett, A. C. (2014). Early phytocannabinoid chemistry to endocannabinoids and beyond. *Nature Reviews Neuroscience, 15*(11), 757–764. https://doi.org/10.1038/nrn3811

Mendy, J. (2020, June 4). Re: What is the difference between content analysis and thematic analysis as methods used in qualitative data analysis? Research Gate. http://www.tinyurl.com/86dawhwz

Merriam, S. B., & Simpson, E. L. (2000). *A guide to research for educators and trainers of adults.* Krieger.

Meston, C. M. (2003). Validation of the female sexual function index (FSFI) in women with female orgasmic disorder and in women with hypoactive sexual desire disorder. *Journal of Sex & Marital Therapy, 29*(1), 39–46. https://doi.org/10.1080/713847100

Meston, C. M., Hull, E., Levin, R. J., & Sipski, M. (2004a). Disorders of orgasm in women. *Journal of Sexual Medicine, 1*(1), 66–68. https://doi.org/10.1111/j.1743-6109.2004.10110.x

Meston, C. M., Levin, R. J., Sipski, M. L., Hull, E. M., & Heiman, J. R. (2004b). Women's orgasm. *Annual Review of Sex Research, 15*(1), 173–257.

Michelson, N. (2020, July 24). *The rise of the CannaSexual: Could this new movement spark your sex life?* HuffPost Personal. https://www.huffpost.com/entry/weed-sex-podcast_n_5f199ae0c5b6f2f6c9f29e83

Miller, E. K., Freedman, D. J., & Wallis, J. D. (2002). The prefrontal cortex: Categories, concepts and cognition. *Philosophical Transactions of the Royal Society of London B, 357*, 1123–1136. https://doi.org/10.1098/rstb.2002.1099

Ming, G., & Song, H. (2011). Adult neurogenesis in the mammalian brain: Significant answers and significant questions. *Neuron, 70*(4), 687-702. https://doi.org/10.1016/j.neuron.2011.05.001

Moser, A. (2019). *The influence of cannabis on sexual functioning and satisfaction*. [Master's thesis, East Carolina University]. The ScholarShip, East Carolina University's Institutional Repository. http://thescholarship.ecu.edu/handle/10342/7291

Moser, A., Ballard, S. M., Jensen, J., & Averett, P. (2023). The influence of cannabis on sexual functioning and satisfaction. *Journal of Cannabis Research*, *5*(2). https://doi.org/10.1186/s42238-022-00169-2

Muehlenhard, C. L., & Shippee, S. K. (2010). Men's and women's reports of pretending orgasm. *Journal of Sex Research*, *47*(6), 552–567. https://doi.org/10.1080/00224490903171794

Mulvehill, S. (2003). *Employee to entrepreneur: The employee's guide to entrepreneurial success*. Business Publications.

Mulvehill, S. (2008). *Empowerment for entrepreneurs: A 90-day guide*. iUniverse.

Mulvehill, S., & Tishler, J. (2021a, March 23). *Can cannabis be a treatment for female orgasmic disorder?* Cannabis Clinical Outcomes Research Conference 2021 . https://ccorc.mmjoutcomes.org/2021/03/23/can-cannabis-be-a-treatment-for-female-orgasmic-disorder/

Mulvehill, S., & Tishler, J. (2021b, March 23). *Cannabis, female orgasm, and female orgasmic disorder: Comprehensive literature review* [Conference presentation]. Cannabis Clinical Outcomes Research Conference, 2021 (virtual). https://ccorc.mmjoutcomes.org/2021/03/23/cannabis-female-orgasm-and-female-orgasmic-disorder/

Mulvehill, S., & Tishler, J. (2021c, November 19). *Four theories support a hypothesis that cannabis may be a treatment for female orgasmic disorder (FOD)* [Conference presentation]. World Meeting for Sexual Medicine 2021 (virtual). https://www1.statusplus.net/misc/posters/wmsm/wmsm_virtual2021/search/poster/220?redirect=pm

Mulvehill, S., & Tishler, J. (2022a, July 7). Therapeutic cannabis for female orgasmic disorder. [Video podcast episode 33]. In *Love Health Center*. https://www.love-health-center.org/en/podcast/suzanne-mulvehill-dr-jordan-tishler/.

Mulvehill, S., & Tishler, J. (2022b, May 18). *Three theories explore why women who use cannabis regularly are twice as likely to orgasm*. [Conference presentation]. Cannabis Clinical Outcomes Research Conference 2022, Orlando, FL, United States. https://ccorc.mmjoutcomes.org/2022/05/17/three-theories-explore-why-women-who-use-cannabis-regularly-are-twice-as-likely-to-orgasm/

Mulvehill, S., & Tishler, J. (2023, May 18). *Assessment of cannabis use before partnered sex on women who report orgasm difficulty*. [Conference presentation]. Cannabis Clinical Outcomes Research Conference 2023, Orlando, FL, United States. https://ccorc.mmjoutcomes.org/2023/04/21/cannabis-helps-women-orgasm-and-increases-the-frequency-of-orgasm-in-women-who-report-difficulty-orgasming/

Najman, J. M., Dunne, M. P., Purdie, D. M., Boyle, F. M., & Coxeter, P. D. (2005). Sexual abuse in childhood and sexual dysfunction in adulthood: An Australian population-based study. *Archives of Sexual Behavior, 34*(5), 517–526. https://doi.org/10.1007/s10508-005-6277-6

Nauta, W. J. H. (1971). The problem of the frontal lobe: A reinterpretation. *Journal of Psychiatric Research, 8*(3-4), 167–187. https://doi.org/10.1016/0022-3956(71)90017-3

Novicki, C. (2019, March 16). What is the entourage effect? *Anavii Market*. https://www.anaviimarket.com/blogs/news/what-is-the-entourage-effect

Ogden, G. (1981). *Perception of touch in easily orgasmic women during peak sexual* experiences [Unpublished doctoral dissertation, Institute for Advanced Study of Human Sexuality (San Francisco, CA)].

Palamar, J. J., Acosta, P., Ompad, D. C., & Friedman, S. R. (2016). A qualitative investigation comparing psychosocial and physical sexual experiences related to alcohol and marijuana use among adults. *Archives of Sexual Behavior, 47*(3), 757–770. https://doi.org/10.1007/s10508-016-0782-7

Parish, S. J., Goldstein, A. T., Goldstein, S. W., Goldstein, I., Pfaus, J., Clayton, A., Giraldi, A., Simon, J. A., Althof., S. E., Bachmann, G., Komisaruk, B., Levin, R., Kellogg Spadt, S., Kingsberg, S. A., Perelman, M. A., Waldinger, M. D., & Whipple, B. (2016). Toward a more evidence-based nosology and nomenclature for female sexual dysfunctions—Part

II. *Journal of Sexual Medicine*, *13*(12), 1888–1906. https://doi.org/10.1016/j.jsxm.2016.09.020

Pasqualotto, E. B., Pasqualotto, F. F., Sobreiro, B. P., & Lucon, A. M. (2005). Female sexual dysfunction: The important points to remember. *Clinics*, *60*(1), 51–60. https://doi.org/10.1590/s1807-59322005000100011

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Sage.

Pauls, R. N., Kleeman, S. D., & Karram, M. M. (2005). Female sexual dysfunction: Principles of diagnosis and therapy. *Obstetrical & Gynecological Survey*, *60*(3), 196–205. https://doi.org/10.1097/01.ogx.0000157978.91721.0f

Perelman, M. A. (2010, February 24). *Anhedonia (PDOD).* Institute for Sexual Medicine. https://sexualmed.org/ known-issues/anhedonia

Porta, M. (Ed.). (2008). *A Dictionary of Epidemiology* (5th ed.). Oxford University Press.

Prenderville, J. A., Kelly, Á. M., & Downer, E. J. (2015). The role of cannabinoids in adult neurogenesis. *British Journal of Pharmacology*, *172*(16), 3950–3963. https://doi.org/10.1111/bph.13186

Rabinak, C. A., Blanchette, A., Zabik, N. L., Peters, C., Marusak, H. A., Iadipaolo, A., & Elrahal, F. (2020). Cannabinoid modulation of corticolimbic activation to threat in trauma-exposed adults: A preliminary study. *Psychopharmacology*, 237, 1813–1826. https://doi.org/10.1007/s00213-020-05499-8

Raymundi, A. M., da Silva, T. R., Sohn, J. M. B., Bertoglio, L. J., & Stern, C. A. (2020). Effects of Δ9-tetrahydrocannabinol on aversive memories and anxiety: A review from human studies. *BMC Psychiatry*, *20*(420). https://doi.org/10.1186/s12888-020-02813-8

Rayner, G. (2016, September 25). The emotion centre is the oldest part of the human brain: Why is mood so important? *The Conversation*. https://theconversation.com/the-emotion-centre-is-the-oldest-part-of-the-human-brain-why-is-mood-so-important-63324

Raypole, C. (2019). Endocannabinoid system: A simple guide to how it works. *Healthline.* https://www.healthline.com/health/endocannabinoid-system

Rees, P. M., Fowler, C. J., & Maas, C. P. (2007). Sexual function in men and women with neurological disorders. *The Lancet, 369*(9560), 512–525. https://doi.org/10.1016/s0140-6736(07)60238-4

Rexaline, S. (2019). *CBD vs. THC: The science behind the most popular cannabinoids*. Benzinga. https://finance.yahoo.com/news/cbd-vs-thc-science-behind-214537809.html

Riccetto, C., Lanza, A. H., Pereira, S., Pereira, L., Silva, J., & Palma, P. (2010). Pelvic floor muscle training in the treatment of women with secondary anorgasmia: Functional and electromyographic valuations. *International Urogynecology Journal, 21*, S33-S34.

Richters, J., Grulich, A. E., Visser, R. O., Smith, A., & Rissel, C. E. (2003). Sex in Australia: Sexual difficulties in a representative sample of adults. *Australian and New Zealand Journal of Public Health, 27*(2), 164–170. https://doi.org/10.1111/j.1467-842x.2003.tb00804.x

Robinson, T., Ali, M. U., Easterbrook, B., Coronado-Montoya, S., Daldegan-Bueno, D., Hall, W., Jutras-Aswad, D., & Fischer, B. (2022). Identifying risk-thresholds for the association between frequency of cannabis use and development of cannabis use disorder: A systematic review and meta-analysis. *Drug and Alcohol Dependence, 23*8, 109582. https://doi.org/10.1016/j.drugalcdep.2022.109582

Rocco, T. S., & Plakhotnik, M. S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: Terms, functions, and distinctions. *Human Resource Development Review, 8*(1), 120–130. https://doi-org/10.1177/1534484309332617

Rosen, R., Brown, C., Heiman, J., Leiblum, S., Meston, C., Shabsigh, R., Ferguson, D., & D'Agostino, R. (2000). The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex & Marital Therapy, 26*(2), 191–208. https://doi.org/10.1080/009262300278597

Ruel, E., Wagner III, W. & Gillespie, B. (2016). Pretesting and pilot testing. In The practice of survey research (pp. 101-119). Sage. https://doi.org/10.4135/9781483391700

Ruesink, G. B., & Georgiadis, J. R. (2017). Brain imaging of human sexual response: Recent developments and future directions. *Current Sexual Health Reports, 9*(4), 183–191. https://doi.org/10.1007/s11930-017-0123-4

Russo, E. (2002). Cannabis treatments in obstetrics and gynecology: A historical review. *Journal of Cannabis Therapeutics, 2*(3-4), 5–35. https://doi.org/10.1300/J175v02n03_02

Russo, E. B. (2016). Clinical endocannabinoid deficiency reconsidered: Current research supports the theory in migraine, fibromyalgia, irritable bowel, and other treatment-resistant syndromes. *Cannabis and Cannabinoid Research, 1*(1), 154–165. https://doi.org/10.1089/can.2016.0009

Russo, E. B. (2019). The case for the entourage effect and conventional breeding of clinical cannabis: No "strain," no gain. *Frontiers in Plant Science, 9*, 1969. https://doi.org/10.3389/fpls.2018.01969

Safarinejad, M. R. (2006). Female sexual dysfunction in a population-based study in Iran: Prevalence and associated risk factors. *International Journal of Impotence Research, 18*(4), 382–395. https://doi.org/10.1038/sj.ijir.3901440

Salkind, N. J. (2010). *Encyclopedia of research design*. Sage.

Salamone, J. D., & Correa, M. (2012). The mysterious motivational functions of mesolimbic dopamine. *Neuron, 76*(3), 470–485. https://doi.org/10.1016/j.neuron.2012.10.021

Salmani, Z., Zargham-Boroujeni, A., Salehi, M., K Killeen, T., & Merghati-Khoei, E. (2015). The existing therapeutic interventions for orgasmic disorders: Recommendations for culturally competent services, narrative review. *Iranian Journal of Reproductive Medicine, 13*(7), 403–412.

Sandelowski, M. (1999). Time and qualitative research. *Research in Nursing & Health, 22*(1), 79–87. https//doi.org/10.1002/(sici)1098-240x(199902)22:1<79::aid-nur9>3.0.co;2-3

Sayin, H. U. (2011). Altered states of consciousness occurring during expanded sexual response in the human female: Preliminary definitions. *NeuroQuantology, 9*(4), 882-891. https://doi.org/10.14704/nq.2011.9.4.486

Sayin, U. (2012). A comparative review of the neuro-psychopharmacology of hallucinogen-induced altered states of consciousness: The uniqueness of some hallucinogens. *NeuroQuantology, 10*(2), 316-340. https://doi.org/10.14704/nq.2012.10.2.528

Schaffer, R. (2023, June 14). *Female sexual dysfunction with heart failure "underrecognized and undertreated." Cardiologytoday*. https://www.healio.com/news/cardiology/20230614/female-sexual-dysfunction-with-heart-failure-underrecognized-and-undertreated

Scholl, N., Mulders, S., & Drent, R. (2002). Online qualitative market research: Interviewing the world at a fingertip, *Qualitative Market Research*, *5*(3), 210–223. https://doi.org/10.1108/13522750210697596

Séguin, L. J., & Blais, M. (2019). Pleasure is just the tip of the iceberg: Social representations, personal beliefs, and attributed meanings to partnered orgasm. *Canadian Journal of Human Sexuality*, *28*(3), 328–342. https://doi.org/10.3138/cjhs.2019-0027

Séguin, L. J., & Milhausen, R. R. (2016). Not all fakes are created equal: Examining the relationships between men's motives for pretending orgasm and sexual desire, and relationship and sexual satisfaction. *Sexual and Relationship Therapy*, *31*(2), 159–175. https://doi.org/10.1080/14681994.2016.1158803

Séguin, L. J., Milhausen, R. R., & Kukkonen, T. (2015). The development and validation of the motives for feigning orgasms scale. *Canadian Journal of Human Sexuality*, *24*(1), 31–48. https://doi.org/10.3138/cjhs.2613

Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, *61*(3), 261–264. https://doi.org/10.4103/0019-5154.182410

Sewell, R. A., Schnakenberg, A., Elander, J., Radhakrishnan, R., Williams, A., Skosnik, P. D., Pittman, B., Ranganathan, M., & D'Souza, D. C. (2012). Acute effects of THC on time perception in frequent and infrequent cannabis users. *Psychopharmacology*, *226*(2), 401–413. https://doi.org/10.1007/s00213-012-2915-6

Shadbolt, C. (2009). Sexuality and shame. *Transactional Analysis Journal*, *39*(2), 163–172. https://doi.org10.1177/036215370903900210

Shaw, C. A., & McEachern, J. C. (2001). *Toward a theory of neuroplasticity*. Psychology Press.

Sheatsley, P. B. (1983). Questionnaire construction and item writing. In P. H. Rossi, J. D. Wright, & A. B. Andersen, A.B. (Eds.), *Handbook of Survey Research* (pp. 195–230). Academic Press.

Shepherd, S. K., & Achterberg, C. L. (1992). Qualitative research methodology: Data collection, analysis, interpretation, and verification. In E. R. Monsen (Ed.), *Research: Successful Approaches* (2nd ed., pp. 82-88). American Dietetic Association.

Shindel, A. W., Eisenberg, M. L., Breyer, B. N., Sharlip, I. D., & Smith, J. F. (2011). Sexual function and depressive symptoms among female North American medical students. *Journal of Sexual Medicine*, *8*(2), 391–399. https://doi.org/10.1111/j.1743-6109.2010.02085.x

Siddique, S. A. (2003). *Vaginal anatomy and physiology. Journal of Pelvic Medicine and Surgery*, *9*(6), 263–272. https://doi-org/10.1097/01.spv.0000094481.95144.3d

Sieber, J. E. (2001). Privacy and confidentiality: As related to human research in social and behavioral science. In *Ethical and policy issues in research involving human research involving human participants*. (Commissioned Papers) (Vol. II, pp. N1–N50). National Bioethics Advisory Commission. http://hdl.handle.net/10822/941748

Simon, W., & Gagnon, J. H. (1986). Sexual scripts: Permanence and change. *Archives of Sexual Behavior*, *15*(2), 97–120. https://doi.org/10.1007/bf01542219

Simons, H. (2009). *Case study research in practice.* Sage.

Simons, J. S., & Carey, M. P. (2001). Prevalence of sexual dysfunctions: Results from a decade of research. *Archives of Sexual Behavior*, *30(*2), 177–219. https://www.doi.org/10.1023/a:1002729318254

Small, E. (2017). *Cannabis: A complete guide*. CRC Press.

Smith, A. M., Ferris, J. A., Simpson, J. M., Shelley, J., Pitts, M. K., & Richters, J. (2010). Cannabis use and sexual health. *Journal of Sexual Medicine, 7*(2), 787–793. https://doi.org/10.1111/j.1743-6109.2009.01453.x

Smith, A. M. A., Lyons, A., Ferris, J. A., Richters, J., Pitts, M. K., Shelley, J. M., Simpson, J. M., Heywood, W., & Patrick, K. (2012). Incidence and persistence/recurrence of women's sexual difficulties: Findings from the Australian longitudinal study of health and relationships. *Journal of Sex & Marital Therapy, 38*(4), 378–393. https://doi-org/10.1080/0092623x.2011.615898

Smith, L. (2022, October 19). What helps women experience orgasm? [with Suzanne Mulvehill]. [Audio podcast] In Omny Studio - Omny.fm. https://omny.fm/shows/hearts-entwined/what-helps-women-experience-orgasm-with-suzanne-mu?fbclid=IwAR2rBsra2hB2VXWMUw2MsFWH9QrxP9zg6-QJBdlSG09Fz4aIxXa1ku2K-kc

Soderpalm, B., & Ericson, M. (2013). Neurocircuitry involved in the development of alcohol addiction: The dopamine system and its access points. [Review]. *Current Topics in Behavioral Neurosciences, 13*, 127–161. http://dx.doi.org/10.1007/7854_2011_170

Stake, R. E. (1995). *The art of case study research*. Sage.

Sudman, S. (1983). Applied sampling. In P. H. Rossi, J. D. Wright, & A. B. Andersen (Eds.), *Handbook of survey research survey research* (pp. 145–194). Academic Press.

Sukel, K. (2011, May 11). The pathways of pleasure. *New Scientist*, *210*(2812), 6-7.

Sumnall, H., Beynon, C., Conchie, S., Riley, S., & Cole, J. (2006). An investigation of the subjective experiences of sex after alcohol or drug intoxication. *Journal of Psychopharmacology*, *21*(5), 525–537. https://doi.org10.1177/0269881106075590

Sun, A. J., & Eisenberg, M. L. (2017). Association between marijuana use and sexual frequency in the United States: A population-based study. *Journal of Sexual Medicine, 14*(11), 1342–1347. https://doi.org10.1016/j.jsxm.2017.09.005

Swartz, L. H. (1994). Absorbed states play different roles in female and male sexual response: Hypotheses for testing. *Journal of Sex & Marital Therapy, 20*(3), 244–253. https://doi.org/10.1080/00926239408403434

Szkudlarek, H. J., Rodríguez-Ruiz, M., Hudson, R., Felice, M. D., Jung, T., Rushlow, W. J., & Laviolette, S. R. (2021). THC and CBD produce divergent effects on perception and panic behaviours via distinct cortical molecular pathways. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *104*, 110029. https://doi.org/10.1016/j.pnpbp.2020.110029

Tart, C. (1990). *Altered states of consciousness* (3rd ed.). Harper Collins.

Tart, C. T. (1971). *On being stoned: A psychological study of marijuana intoxication.* Science and Behavior Books.

Tashakkori, A., & Teddlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches. Sage.

Tashakkori, A., & Teddlie, C. (Eds.). (2010). *SAGE handbook of mixed methods in social & behavioral research* (2nd ed.). Sage. https://doi.org/10.4135/9781506335193

Tavares, I. M., Laan, E. T. M., & Nobre, P. J. (2018). Sexual inhibition is a vulnerability factor for orgasm problems in women. *Journal of Sexual Medicine, 15*(3), 361–372. https://doi.org10.1016/j.jsxm.2017.12.015

Taylor P. (2000). *An observational and comparative study of practitioners of expanded orgasm: An investigation of an effective and accessible path to transcendent states of*

consciousness [Unpublished doctoral dissertation, International University of Professional Studies, Maui, Hawaii]. https://www.scribd.com/doc/33859474/Expanded-Orgasm-Dissertation-Patricia-Taylor-1

Terrell, S. R. (2021). *Statistics translated: A step-by-step guide to analyzing and interpreting data* (2nd ed.). Guilford Press.

Tesch, R. (1990). *Qualitative research: Analysis types and software tools*. Falmer Press.

Tishler, J., & Mulvehill, S. (2022, December 5). *Cannabis for treatment of human sexuality*. Association of Cannabinoid Specialists [Conference presentation]. [virtual]. https://vimeo.com/735566537/4e76b86158

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, *4*(3), 356–367. https://doi.org/10.1177/1534484305278283

United States National Academies of Sciences, Engineering, and Medicine. (2017). Multimodal therapy: Overview of principles, barriers, and opportunities. In *Developing multimodal therapies for brain disorders: Proceedings of a workshop* (pp. 5-18). National Academies Press. https://doi.org/10.17226/23657

United States National Institute on Drug Abuse. *How does marijuana produce its effects?* (2021, April 13). Department of Health and Human Services, National Institute on Drug Abuse. https://www.drugabuse.gov/publications/research-reports/marijuana/how-does-marijuana-produce-its-effects

Vanclay, F., Baines, J. T., & Taylor, C. N. (2013). Principles for ethical research involving humans: Ethical professional practice in impact assessment, Part I. *Impact Assessment and Project Appraisal*, *31*(4), 243–253. https://doi.org/10.1080/14615517.2013.850307

Ventegodt, S., & Merrick, J. (2008). Theory of sexuality and psychological causes of sexual problems. In J. M. Carroll & M. K. Alena (Eds). *Psychological sexual dysfunctions* (pp. 121–145). Nova Science.

Weller, R. A., & Halikas, J. A. (1984). Marijuana use and sexual behavior. *Journal of Sex Research*, *20*(2), 186–193. https://doi.org/10.1080/00224498409551216

Whipple, B., & Graziottin, A. (2006). Orgasmic disorders in women. In H. Porst & J. Buvat (Eds.), *Standard practice of sexual medicine* (pp. 334–341). John Wiley & Sons. https://doi.org/10.1002/9780470755235.ch24

Whipple, B., Ogden, G., & Komisaruk, B. R. (1992). Physiological correlates of imagery-induced orgasm in women. *Archives of Sexual Behavior*, *21*(2), 121–133. https://doi.org/10.1007/BF01542589

Whiting, P. F., Wolff, R. F., Deshpande, S., Di Nisio, M., Duffy, S., Hernandez, A. V., Keurentjes, J. C., Lang, S., Misso, K., Ryder, S., Schmidlkofer, S., Westwood, M., & Kleijnen, J. (2015). Cannabinoids for medical use. *Journal of the American Medical Association*, *313*(24), 2456. https://doi.org/10.1001/jama.2015.6358

Wiebe, E., & Just, A. (2019). How cannabis alters sexual experience: A survey of men and women. *Journal of Sexual Medicine*, *16*(11), 1758–1762. https://doi.org/10.1016/j.jsxm.2019.07.023

Wilson, A., & Laskey, N. (2003). Internet-based marketing research: A serious alternative to traditional research methods. *Marketing Intelligence & Planning*, *21*(2), 79–84. https://doi.org/10.1108/02634500310465380

World Association of Sexual Health. *Declaration of sexual rights.* (2014).

https://worldsexualhealth.net/wp-content/uploads/2013/08/Declaration-of-Sexual-Rights-2014-plain-text.pdf

World Association of Sexual Health. *Sexual health for the millennium: A declaration and technical document.* (2008). https://worldsexualhealth.net/wp-content/uploads/2013/08/millennium-declaration-english.pdf

Wylie, K., & Levin, R. J. (2013). A self-treated case of female pleasure dissociative orgasmic disorder (PDOD). *Sexual & Relationship Therapy, 28*(3), 294–298. https://doi.org/10.1080/14681994.2012.762087

Yagoda, M. (2017, April 20). The sex therapists using pot to help patients find their 'full sexual potential' *Vice*. https://www.vice.com/en/article/gyxqn3/how-sex-therapists-are-using-weed-to-help-patients-relax-weedweek2017

Yehuda, R., Lehrner, A., & Rosenbaum, T. Y. (2015). PTSD and sexual dysfunction in men and women. *Journal of Sexual Medicine, 12*(5), 1107–1119. https://doi.org/10.1111/jsm.12856

Zinko, C. (Host). (2018, February 13). *Sexologist Diana Urman on using cannabis to achieve orgasm, and more*. [Audio podcast]. The hash podcast. https://soundcloud.com/thehashpodcast/sexologist-diana-urman-talks-cannabis-and-coitus

Zou, S., & Kumar, U. (2018). Cannabinoid receptors and the endocannabinoid system: Signaling and function in the central nervous system. *International Journal of Molecular Sciences, 19*(3), 833. https://doi.org/10.3390/ijms19030833

Appendix A: IRB Approval Letter

INTERNATIONAL INSTITUTE OF CLINICAL SEXOLOGY

IICS IRB NUMBER: 2022301 IRB REFERENCE DATE: 3/24/22IRB EXPIRATION DATE: 4/24/22

March 24, 2022

Suzanne Mulvehill, MBA, BSWVia dei Pozzi, 1
Valsolda, (CO) Italia 22010

RE: *An observational study to explore if women who have difficulty orgasming or female orgasmic disorder are using cannabis to treat their orgasmic difficulty/disorder and determine the effects, if any.*

Dear Suzanne:

This letter confirms that Institutional Review Board approval was granted for your dissertation project as referenced on the above date. This approval is granted for a one-year period. This approval applies to the use of human subjects only.
Any anticipated problems involving risk to human subjects and any serious adverse effects must be reported promptly to me and to Dr. Clark.
IRB approval is given with the understanding that no changes may be made in the procedures to be followed nor the consent form(s) to be used until such modifications have been submitted for review and approval is granted.

Wishing you the best of luck as you pursue this valuable work further.

Sincerely,

Janis Roszler, PhD, LMFTIRB Coordinator

Appendix B: Recruitment Email to Professional Associations and Cannabis Dispensaries

Dear (Professional Association),

I am conducting a study to explore whether women use cannabis to treat their orgasmic disorder. Female orgasmic disorder (FOD) is characterized by difficulty experiencing orgasm and/or markedly reduced intensity of orgasmic sensations[1] and affects up to 41% of women worldwide[2]. Studies have suggested that cannabis eases women's orgasmic difficulty[3] helps women orgasm[4], and increases the frequency, intensity, and quality of women's orgasm[5]. Researchers have suggested cannabis as a treatment for FOD and sexual disorders for more than 50 years, yet no studies were found to evaluate if cannabis helps women orgasm who have FOD.

Please help me recruit women for this study by promoting my survey to your members. Sexually active women who use cannabis, are at least 21 years of age and have self-reported or diagnosed FOD are invited to complete the survey. The survey will take no more than 15 minutes to complete and will be available for 5 months or until 400 usable surveys are collected. Interviews will be conducted following the survey with those participants who wish to participate. Survey participants will remain anonymous.

The Qualtrics online survey link will be placed here.

Thank you for your attention to this matter.
Sincerely,

Suzanne Mulvehill, MBA, BSW
Doctoral Student, Clinical Sexologist
Suzanne.mulvehill@gmail.com

---

[1] American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders.* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

[2] Laumann, E. O., Glasser, D., Neves, R., & Moreira, E. (2009). A population-based survey of sexual activity, sexual problems and associated help-seeking behavior patterns in mature adults in the United States of America. *International Journal of Impotence Research*, *21*(3), 171–178. https://www.doi.org/10.1038/ijir.2009.7

[3] Wiebe, E., & Just, A. (2019). How cannabis alters sexual experience: A survey of men and women. *Journal of Sexual Medicine, 16*(11), 1758–1762. https://doi.org/10.1016/j.jsxm.2019.07.023

[4] Kasman, A. M., Bhambhvani, H. P., Wilson-King, G., & Eisenberg, M. L. (2020). Assessment of the association of cannabis on female sexual function with the female sexual function index. *Sexual Medicine, 8*(4), 699-708. https://doi.org/10.1016/j.esxm.2020.06.009

[5] Lynn, B. K., López, J. D., Miller, C., Thompson, J., & Campian, E. C. (2019). The relationship between marijuana use prior to sex and sexual function in women. *Sexual Medicine, 7*(2), 192–197. https://doi.org/10.1016/j.esxm.2019.01.003

Appendix C: Recruitment Message

Thank you for clicking on our link!

A doctoral student at the International Institute of Clinical Sexology is conducting a research study to explore cannabis's effect, if any, on female orgasmic disorder. To conduct this study, we need to collect accurate data from women at least 21 years of age who are sexually active and use cannabis rarely to those who use cannabis every day.

We believe the data that you and others contribute to this research study could be useful to policymakers and the medical community when designing regulations for legal cannabis. This survey will take **10-15 minutes** to complete. Participation is entirely voluntary, and you may quit the survey at any time. You will be asked potentially sensitive questions about your beliefs and/or use of cannabis and sexual activity.

All responses are CONFIDENTIAL.

All data will be stored through Qualtrics, the online survey software provider. IP addresses are not tracked.

One final note: At the end of this survey, you will have the option to provide your contact information if you wish to participate in an interview to deepen the research. To participate in a brief interview, we will ask for your email address and/or phone number so we can follow up with you to schedule an interview.

Your participation and honest answers are appreciated!!

Appendix D: Survey

Female Orgasm Research Project

We are collecting data on sexually active women who use cannabis and have difficulty orgasming during partnered sex. To begin, we need to ask for your consent to participate. Please read and/or download the consent form. Do you consent to participate in our survey?

1. Are you pregnant or breastfeeding?

- ○ Yes (If Yes, END OF SURVEY)
- ○ No

2. Please choose your age group.

- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65+

3. When is the last time you used cannabis?

- ○ Within the last month
- ○ More than a month ago (IF more than a month ago, END OF SURVEY)
- ○ I do not use cannabis (IF does not use cannabis, END OF SURVEY)

4. In the last month, have you used other recreational substances besides cannabis? (Mushrooms, Ecstasy, Cocaine, Heroin, LSD, Morphine, etc.)

- ○ Yes (If yes, END OF SURVEY)
- ○ No

5. When is the last time you had partnered sex?

- ○ Within the last month
- ○ More than a month ago (If more than a month ago, END OF SURVEY)

6. Do you have difficulty orgasming during partnered sex?

- ○ Yes
- ○ No

Display This Question:

If 6 = Yes

7. Describe your difficulty orgasming during partnered sex. Check all that apply.

- ☐ I have never had an orgasm.
- ☐ I used to be able to orgasm but cannot any longer.
- ☐ I sometimes orgasm.
- ☐ I can have orgasms in some situations but not others. (For example, orgasm during oral sex or orgasm only with a vibrator)

- [ ] I have reduced intensity of my orgasms.
- [ ] My orgasms take longer than I would like.
- [ ] My orgasms are sometimes not pleasurable.
- [ ] My orgasms are never pleasurable.
- [ ] Other: Please describe below

_____

8. Do you have any other sexual difficulties?

- ○ Yes
- ○ No

Skip To: 10 If 8 = No

9. Please check other sexual difficulties. Check all that apply.

- [ ] Low sexual desire
- [ ] Low sexual arousal
- [ ] Pain during sex
- [ ] Other: Please describe below

_____

10. How OFTEN do you have partnered sex?

- ○ One or times a day
- ○ 2-3 times a week
- ○ 4-5 times a week
- ○ A few times a month
- ○ Once every few months

11. How OFTEN do you use cannabis BEFORE partnered sex?

- ○ Never
- ○ Rarely
- ○ Some of the time
- ○ About half of the time
- ○ Most of the time
- ○ Every time

12. How LONG have you been using cannabis BEFORE partnered sex?

- ○ I do not use cannabis before partnered sex
- ○ Less than 1 year
- ○ 1-3 years
- ○ 3-5 years

○ 5+ years

13. How LONG have you been using cannabis?

○ Less than 1 year

○ 1-3 years

○ 3-5 years

○ 5 + years

14. How OFTEN do you use cannabis?

○ Daily

○ A few times a week

○ A few times a month

○ A few times a year

○ Other: Please describe below _____

15. What is the primary reason you use cannabis?

○ Pain

○ Relaxation

○ Sleep

○ Sex

○ Other medical problem

○ Prescription, for what diagnosis? Please describe below.

16. What is your primary cannabis intake method?

○ Smoking

○ Vaping oil

○ Vaporizing cannabis flower (weed)

○ Edibles

○ Tincture

○ Topicals

○ Other: Please describe _____

17. Over the past month, when you USED cannabis BEFORE partnered sex, how often did you reach orgasm (climax)?

○ Almost always or always

○ Most times (more than 1/2 of the time)

○ Sometimes (about 1/2 of the time)

○ A few times

○ Almost never or never

18. Over the past month, when you DID NOT use cannabis BEFORE partnered sex, how often did you reach orgasm (climax)?

- ○ Almost always or always
- ○ Most times (more than 1/2 of the time)
- ○ Sometimes (about 1/2 of the time)
- ○ A few times
- ○ Almost never or never

19. Over the past month, how difficult was it for you to orgasm (climax), when you USED cannabis BEFORE partnered sex?

- ○ Extremely difficult or impossible
- ○ Very difficult
- ○ Difficult
- ○ Slightly difficult
- ○ Not difficult

20. Over the past month, how difficult was it for you to reach orgasm (climax), when you DID NOT USE cannabis BEFORE partnered sex?

- ○ Extremely difficult or impossible
- ○ Very difficult
- ○ Difficult
- ○ Slightly difficult

○ Not difficult

21. Over the past month, how satisfied were you with your ability to reach orgasm (climax) USING CANNABIS BEFORE partnered sex?

○ Very satisfied

○ Moderately satisfied

○ About equally satisfied and dissatisfied

○ Moderately dissatisfied

○ Very dissatisfied

22. Over the past month, how satisfied were you with your ability to reach orgasm (climax) NOT USING CANNABIS BEFORE partnered sex?

○ Very satisfied

○ Moderately satisfied

○ About equally satisfied and dissatisfied

○ Moderately dissatisfied

○ Very dissatisfied

23. What is your race/ethnicity?

○ Asian

○ Black/African American

- ○ Hispanic
- ○ Multiracial
- ○ Native American
- ○ Pacific Islander
- ○ White/Caucasian
- ○ Other: _____

24. What is your highest level of education?

- ○ Less than high school diploma or GED
- ○ High school diploma or GED
- ○ Some College
- ○ Associate Degree
- ○ Bachelor's Degree
- ○ Graduate Degree

25. What is your annual income?

- ○ Less than $20,000
- ○ $20,000 - $34,999
- ○ $35,000 - $49,999

- ○ $50,000 - $74,999
- ○ $75,000 - $99,999
- ○ Over $100,000

26. What religion do you practice?

- ○ I do not practice a religion
- ○ Buddhist
- ○ Christian (Catholic, Protestant, or any Christian denomination)
- ○ Hindu
- ○ Jewish
- ○ Muslim
- ○ Sikh
- ○ Other: Please describe below _____

27. How devout are you in your religion?

- ○ Very devout
- ○ Somewhat devout
- ○ Not at all devout
- ○ I do not practice a religion

○ I prefer not to answer

28. To which gender do you most identify?

○ Female - Born with Female Genitalia

○ Female - Born with Male Genitalia

○ Transgender female (assigned male at birth, sex reassignment to female

○ Other: Write in below _____

○ Prefer not to answer

29. Do you identify as LGBTQI+ (Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, Intersex, or other)?

○ Yes

○ No

○ Prefer not to answer

30. What is your current relationship status?

○ Single

○ Married

○ In a relationship

○ Divorced

○ Other: Describe below _____

31. What is your current sexual relationship status?

- In a sexual relationship with one person (less than 10 years)
- In a long-term sexual relationship with one person (more than 10 years)
- Engaging in sex with more than one person
- Not in a sexual relationship with a person

32. How satisfied are you in your partnered relationship (s)?

- Very satisfied
- Moderately satisfied
- About equally satisfied and dissatisfied
- Somewhat dissatisfied
- Very dissatisfied
- I am not in a partnered relationship

33. Are you on any prescription medication?

- Yes
- No

Display This Question:

If 33 = Yes

34. Please check all prescription medication that you are currently taking

☐ Opioids (Common for pain relief, including, Oxycodone, Morphine, Fentanyl)

☐ Benzodiazepines (Common for anxiety/depression, including Ativan, Klonopin, Restoril, Valium, Xanax)

☐ Non-benzodiazepines (Common for insomnia, including Ambien, Zolpimist)

☐ Stimulants (Common for various conditions, including Adderall, Dexedrine, Ritalin)

☐ Other _____

35 Do you have a mental health diagnosis?

○ Yes

○ No

Display This Question:

If 35 = Yes

36. Please check your mental health diagnosis.

☐ Anxiety Disorder

☐ Depressive Disorder

☐ Bipolar Disorder

☐ Post-traumatic stress disorder (PTSD)

☐ Other _____

37. Do you have a history of sexual abuse?

- ○ Yes
- ○ No

38. How often do you masturbate?

- ○ I do not masturbate
- ○ One or more times a day
- ○ 2-3 times a week
- ○ 4-5 times a week
- ○ A few times a month
- ○ Once every few months

39. Is there anything we did not ask that you think is important for us to know regarding your experience with cannabis, sex, and orgasm?

40. Would you be willing to be participate in a 20–30-minute interview to further the research on cannabis, sex, and female orgasm?

- ○ Yes
- ○ No

Display This Question:

If 40 = Yes

41. Please share your email address and/or telephone number below. Your information will remain confidential.

○ E-mail _____

○ Telephone Number _____

END OF SURVEY

Appendix E: Postcards, Social Media Posts, and Postcard Distribution List

Survey Postcard 1, 5,000 distributed

The following associations hosted the postcard electronically.

- Association of Cannabinoid Specialists (posted survey flyer in their electronic newsletter)
- Georgia Medical Cannabis Society (posted a link on their website)
- Sex Coach University (posted in their electronic newsletter)

Survey Postcard #2 (online and in paper form)

LinkedIn Posts

- CBD & Cannabis Professional Business Network
- Psychedelics and Female Sexuality
- E-Sexual Health Research
- Psycho Sexual Therapists
- Suzanne Mulvehill

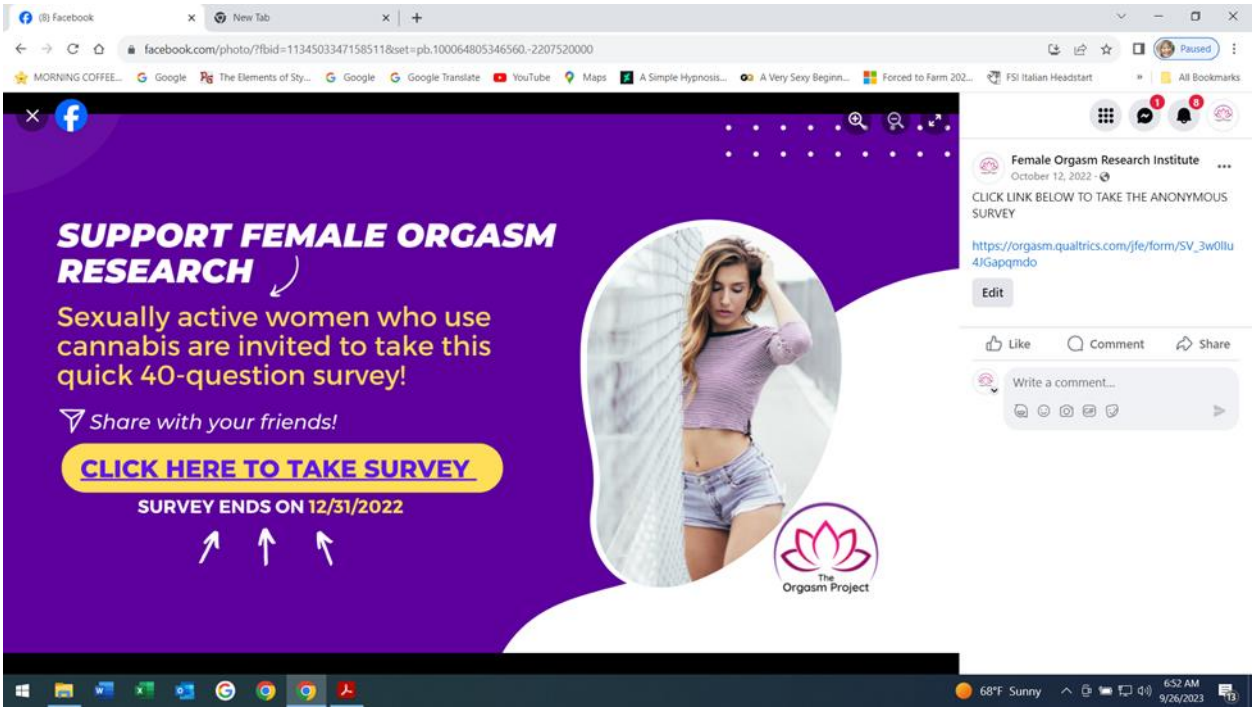
    Reposted by:

    - Jessica Zendler
    - Dee Hartmann, PT, DPT

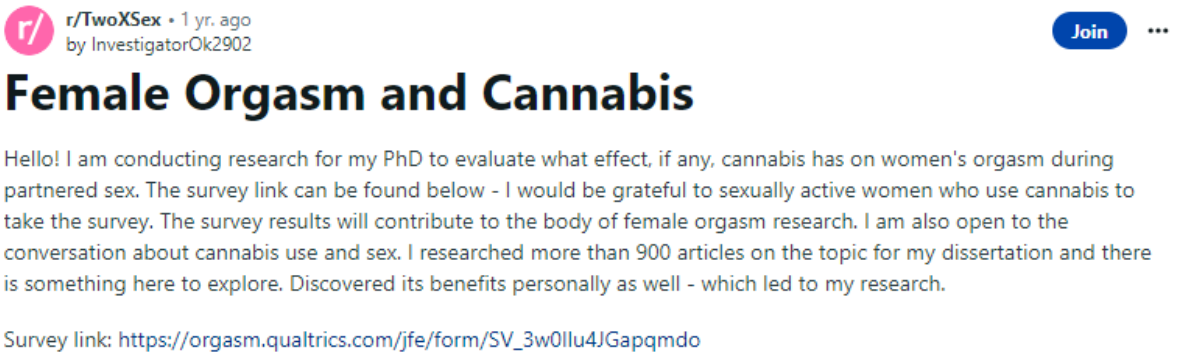
Podcasts

- The Podcast Factory Org (NPO), Love Health Center
- Camille Parle Sexe Podcast

Facebook Post



Reddit Post



South Florida Locations where the survey flyers were distributed (with one location in St. Louis, MO and one in Cambridge, MA)

Cannabis Dispensaries

- Fluent, Deerfield Beach, FL
- Miracle Leaf, Deerfield Beach, FL
- Rise Dispensaries (Central Florida locations)
- Sanctuary Cannabis, Lake Worth, FL

Adult Book Stores/Lingerie

- Adult Video Warehouse, Pompano Beach, FL

- Adult Video & Novelty, West Palm Beach, FL
- Love Toys & Lingerie, Pompano Beach, FL
- MegaSex Adult Emporium, Fort Lauderdale, FL
- Pleasure Palace Adult Gifts & Novelty, Fort Lauderdale, FL
- Pompano Book & Video, Pompano Beach, FL
- Sexxy Toys & Lingerie, Delray Beach, FL
- The Adult Store – Universal Video, Lauderhill, FL

Medical Offices

- An OZ of Wellness, Boca Raton, FL
- Evora Women's Health, St. Louis, MO
- Maureen Weiland, MD., Greenacres, FL
- Melanie Bone, MD., West Palm Beach, FL
- inhaleMD, Inc., Cambridge, MA
- Marijuana Doctors, Deerfield Beach, FL
- MMJ Health, Palm Beach Gardens, FL
- Steven Birnbach, MD., Boca Raton, FL

South Florida Vape and Smoke Shops

- Cloud House Vape & Smoke Shop, Boca Raton, FL
- Double D's Vape and Tobacco World (2 locations) Boynton Beach and Boca Raton, FL
- Eagle Vapes, Boynton Beach, FL
- Electric Smoke Vape, Palm Springs, FL
- Grateful J's (5 locations) Coral Springs, Lake Worth, Lauderdale by the Sea, Margate, and Pompano Beach, FL

- Hot Box Smoke and Vape Shop, Lake Worth, FL
- House of Smokes, Lake Worth, FL
- Lighthouse Vape and Smoke Shop, Lake Worth and Delray Beach, FL
- Marleys, Boca Raton East, Boca Raton West, and Jupiter, FL
- Sexy Smoke and Vape Shop, Delray Beach, FL
- Spark 1 Smoke Shop, Boynton Beach, FL
- Vapes and Glass, Boynton Beach, FL
- Vapes and More, Boca Raton, FL
- Vapes and Smokes of Delray, Delray Beach, FL
- Yolo Vapes N'Smoke, Boca Raton, FL

Appendix F: Reasons Women Reported Experiencing FOD

Describe your difficulty orgasming during partnered sex. Check all that apply. - Selected Choice	I have never had an orgasm	I used to be able to orgasm but cannot any longer	I sometimes orgasm	I can have orgasms in some situations but not others	I have reduced intensity of my orgasms	My orgasms take longer than I would like	My orgasms are sometimes not pleasurable	My orgasms are never pleasurable	Other
Total number of women per category	12	8	99	144	44	118	28	1	21
Percentage of total per category	6.2%	4.1%	51.0%	74.2%	22.7%	60.8%	14.4%	0.5%	10.8%

Note: Six women out of the 12 who reported that they never had an orgasm only chose that category and never had an orgasm. The researcher, therefore, assumes that this is the accurate number of women who have Lifelong FOD and have never had an orgasm in any situation. The other six women reported either orgasming in some situations, such as masturbation, but not others, that their orgasms were not as intense as they had been in the past, or another category that indicates that they have Situational FOD, rather than Lifelong FOD, and therefore, the accurate number of women for reporting purposes that accurately reflects the number of women in this study who never had an orgasm in their life, or have Lifelong FOD is 3% (b = 6/194).

Appendix G: "Other" Reasons Women Reported for FOD

Cannabis Solved Orgasm Difficulty

- *"I had difficulty until I started using cannabis before sex."*
- *"I never had an orgasm, but once I started smoking and using a vibrator/having sex with my partner, I've been able to orgasm more than I ever have, even without smoking now."*

Cannabis-assisted Orgasm

- *"Without pot have a long time to orgasm."*
- *"I started dabs over nine days ago. My sex drive is back! I can only take one hit...and only a few times a week...but its back."*

Masturbation Only Orgasm – Not During Partnered Sex

- *"Without pot have a long time to orgasm."*
- *"I started dabs over nine days ago. My sex drive is back! I can only take one hit....and only a few times a week....but its back."*

Masturbation Only Orgasm – Not During Partnered Sex

- *"I only orgasm during masturbation and it takes at minimum 10 minutes."*
- *"I can only orgasm when masturbating on my own.."*
- *"I usually need to give myself a hand."*
- *"I lack feeling during partnered sex, with any stimulation. I haven't orgasmed with my girlfriend but I can orgasm on my own."*

Medication – SSRI

- *"Sexual dysfunction due to SSRIs. Can sometimes orgasm via oral."*

- *"SSRI use has made it much more difficult to orgasm."*
- *"I take an SSRI."*

Medication – Birth Control

- *"Birth control has impacted my sex drive* [lowered a bit] *and* [I feel like] *the intensity of orgasms is weaker."*

Orgasm Difficulty – Penile-Vaginal Intercourse (PVI)

- *"Never had an orgasm from penetrative sex."*
- *"Not sure if able to achieve through only PIV."*

Orgasm Inconsistent

- *"I can orgasm but it is difficult sometimes."*
- *"I sometimes don't, as in more often than not I do but occasionally don't."*

Orgasm Takes Longer than Desired

- *"My orgasms take a longer time to reach."*

Partner-related

- *"Directing partner during sexual activity."*
- *"With some partners it's easier than with others."*

Sensation-related

- *"Oversensitive leading to numbness."*

Shame-related

- *"In the past I have felt ashamed from having an orgasm at the "wrong" time."*

Surgery-related

- *"Post-hysterectomy partnered orgasms are harder and take longer to reach, are shorter with less intensity."*

Appendix H: "Other" Sexual Issues Reported by Women With FOD

	Pain during sex	Low sexual desire	Low sexual arousal	Other	Total
Total number of women per category	24	19	18	17	78
Percentage of total per category	51%	40%	38%	36%	

Note: Forty-seven women with FOD reported "other' sexual issues (23.2%, *n* = 47/202). Percentages are based on the 47 women who reported "other' sexual issues. Thematically grouped categories and comments are listed from most to least.

Vaginismus/Tightness

- *"Vaginismus"* (reported by 3 women)
- *"Tightness"* (reported by 1 woman)

Sexual Abuse/Trauma

- *"PTSD from abuse."*
- *"Anxiety from sexual trauma."*
- *"Sexual trauma from my past that affects me mentally sometimes."*

Vaginal Dryness/Getting Lubricated

- *"Vaginal dryness."*
- *"Getting wet."*
- *"Vaginal dryness from being post-menopausal."*

Other

- *"Irregular menstruation and bleeding brought on by PVI sex."*
- *"I have breast cancer- have been put into medical menopause at 29. I can ONLY get aroused with THC."*
- *"Too high sex drive."*

- *"It can be difficult to stay in my body and notice physical sensations."*

Appendix I: "Other" Sexual Issues Reported by Women Without FOD

	Pain During Sex	Low Sexual Desire	Low Sexual Arousal	Other	Total
Total number of women per category	10	16	10	7	43
Percentage of total per category	36%	57%	36%	25%	

Note: Twenty-eight women (15%, *n* = 28/185) without FOD reported "Other" sexual issues. Percentages of total per category are calculated based on a total of these 28 women. Thematically grouped categories and comments are listed from most to least.

Sexual Abuse/Trauma

- *"Intrusive thoughts about previous trauma."*
- *"Sex abuse related trauma."*

Medical Issues

- *"Chronic pain stops me orgasming a lot, my pelvis muscles are always tight."*
- *"Endometriosis-pleasure during sex randomly is muted or becomes uncomfortable."*

Other Sexual Issues

- *"Vaginal dryness."*
- *"Desire for enhanced pleasure."*
- *"Hard time letting go and enjoying myself. Insecurities keep me from feeling comfortable."*

Appendix J: Additional Comments Reported by Women With FOD

Cannabis-Assisted Orgasm and Sensual Pleasure

- *"You asked about the last month's use but I want you to know that before using cannabis I had NEVER had an orgasm."*
- *"It might be relevant to know that cannabis not only helps my ability of orgasm, but can also make the orgasms much more intense and pleasurable."*
- *"When I do orgasm, it's much better/ easier while using cannabis."*
- *"I struggle to orgasm. Even masturbation with a heavy-duty vibrator can create this difficulty and I've never orgasmed in partnered sex."*
- *"Cannabis heightens sensual pleasure and touch but makes orgasm more difficult. Overall prolonged greater levels of pleasure but lower chance of orgasm. So, ask questions about pleasure from sex, don't just see orgasm as the goal."*
- *"In my experience, cannabis use makes little difference to my ability to orgasm with my partner in the room. Stoned or not, I can climax within 1 minute if I'm alone (masturbating). My male partner is also a cannabis user."*
- *"Not necessarily about orgasm, but just my whole body feels better on cannabis - tingly and effervescent. That helps achieve orgasm quicker because my body is all keyed up with pleasurable feelings."*
- *"While it's a bit easier to get to orgasm from partnered sex with cannabis the best part is the pleasure lasts and is more intense during partnered sex after using cannabis and the climax is more intense."*

- *"I always orgasm every time I have partnered sex, but generally find it difficult to as I can only orgasm in certain situations. Rather than increasing the number of times I orgasm (since I already orgasm regardless), cannabis allows me to orgasm in other situations."*
- *"The cannabis calms me down. My social anxiety prevents me from fully orgasming."*
- *"Cannabis heightens my perception of physical sensations, which can make sex more pleasurable. But one downside is that it seems to also cause oral and vaginal dryness."*
- *"It FEELS more difficult to climax when I'm high but the orgasm is light years better most of the time. I think it takes the same amount of effort in reality but the payoff is way better."*
- *"When I was younger it seemed,* [cannabis] *helped me relax into orgasm but it's harder for me to relax now."*
- *"All of your questions are centered around whether cannabis can make a difference in reaching orgasm during partnered sex. As you've seen from my answers, cannabis does not make a difference for me in my capacity to reach orgasms during partnered sex. However, it dramatically increases pleasure during partnered sex, as it makes both my skin and my genitals much more sensitive. It also makes it a lot easier to reach orgasm when I masturbate alone, thanks to increased genitals sensation."*

<u>Cannabis, Orgasm, Sex, and Penetrative Sex</u>

- *"I could never orgasm from PVI* [penile-vaginal intercourse] *sex until I started using cannabis first."*
- *"The only way I can reach vaginal orgasm is from using cannabis prior to sexual activity. Before this happened I assumed I was one of the many that could not orgasm this way. Also, my orgasms are a good 10 times stronger after using."*

- *"Marijuana or not, I pretty much cannot orgasm without either a vibrator providing clitoral stimulation, or I'm sitting on my husband's face. I DO think that marijuana helps me reach orgasm easier but only in those contexts, not during* PVI [penile-vaginal intercourse] *non-vibrator sex. I only note this because those are independent and inconsistent variables that are hard to tease out from the marijuana use. I feel Cannabis definitely makes me feel more free and I think less, which I believe helps reach orgasm."*

<u>Cannabis, Orgasm, Anxiety, ADHD, Focus, or Distraction</u>

- *"Often, my difficulty with orgasm seems to stem from distraction and/or sensory overwhelm, which I believe is related to ADHD. Cannabis helps mitigate those symptoms somewhat."*
- *"As someone with anxiety and ADHD, it is very difficult to get out of my own head and be present during sex. I have found that I experience better sex after using cannabis because it diminishes my tendency to overthink. I enjoy the moment. It will still take me a bit to reach orgasm, but I still orgasm more than I do compared to sex without having had cannabis."*
- *"I think cannabis can help people relax more with anxiety towards sex and orgasms."*
- *"Sometimes cannabis can help me just focus on what is happening, other times it can make me lazy and uninterested. I have always struggled to feel comfortable while a partner is trying to get me to orgasm, the cannabis does help me relax and just enjoy my partner."*

<u>Cannabis, Sex, and Sex Drive</u>

- *"The sexual drive after use of cannabis."*
- *"I find it difficult to enjoy sex without the use of cannabis."*
- *"Cannabis makes sex better."*
- *"I am trying dabs and doing so medicinally, I am back sexually."*

Cannabis, Sexual Abuse History, Abusive Marriage

- *"I was sexually assaulted when I was 18 and avoided relationships and sex for many years after. Cannabis has been the most incredible discovery for me in my sex life. It shuts off my brain and stress so I can be in the moment."*
- *"Weed helps lower my inhibitions and helps me block flashbacks from childhood sexual abuse* [CSA]*."*
- *"Past abusive partner introduced me to cannabis to lower my inhibitions during sex."*
- *"Partnered sex is long distance with voice and cam; sexual desire and arousal are easier and intense with cannabis than without, so orgasm seems "closer" but is still hampered by the anxiety of sexual trauma."*
- *"My relationship with my sexuality has changed significantly since leaving an abusive marriage. I transitioned from feeling like my sexuality was payment for love, now I'm more focused on positivity and pleasure."*

Cannabis Strains and Dosage

- *"When I use cannabis, which is often, the tolerance of foreplay varies a lot. Sometimes, after smoking I feel too sensitive, and I have to interrupt it. However, there are other times I feel the foreplay was just perfect in terms of intensity, and that it was the smoking that enhanced it. Might be a good idea to come up with a question that will help you gauge that gap."*
- *"I am good with just one hit, more than that I get sleepy instead of relaxed, or my mind won't focus on sex and be all over the place."*
- *"Some strains can't get me there so it's sometimes an experiment but doesn't matter if it's indica or sativa - just some won't push me over the edge."*

- *"Certain strains are better for arousal. For example: Peach Crescendo is amazing for a pre-sex smoke however Grand Daddy Purple puts me right to sleep with no sexy time."*

Corrections

- *"I accidentally said Yes to LGBT. I am straight! Sorry!!"*
- *"I have never orgasmed during partnered sex and I accidentally answered a question about non-cannabis sex as if I've orgasmed - please change."*
- *"I meant to pick my relationship as married or something like that."*

Gratitude for the Study

- *"No! Just glad to see someone is doing this important work :)"*

Medication, Birth Control Pills, Arousal, and Orgasm

- *"I find that cannabis typically lets me relax more which in turn lets me let loose and be more comfortable and less in my head during sex which in turn helps me orgasm more. However, once I started birth control, my overall sex drive and orgasm frequency has dropped quite a bite. Cannabis still improves my sex drive/orgasm frequency but not as much as it did before birth control."*
- *"I am currently on birth control pills, which has definitely impacted my ability to get aroused or reach climax."*
- *"The medications I am on are SSRIs."*

Partners Using Cannabis Before Sex

- *"I find that the experience is increasingly enhanced when both my husband and I use cannabis prior to sex, but especially prior to spending time together before the sex."*

Suggestions for Future Research

- *"Neurodivergence"*
- *"I think the difference between climax while using cannabis and masturbating, and climax while using cannabis in partnered sex would be worth investigating."*
- *"Whether or not women have sex with men or with other women VASTLY affects their orgasm count and quality."*
- *"The length of time it takes to orgasm. Are you specifically asking about clitoral orgasm or any type of female orgasm? Does this include vaginal, anal orgasms, etc.? I think with the number of different orgasms this research would be better if you specified which type, you are asking about."*
- *"1. If you have given birth in the last year or so. 2. Nothing about being asexual 3. Anti-depressants."*
- *"Should ask/account for birth control methods."*
- *"Maybe about the use of birth control?"*
- *"How much you smoke when you smoke,"*
- *"What do you think are the causes of your sexual dysfunctions"? (for this person, she responded, "low sexual desire.")*

Surgery

- *"Only remaining sex organ is right ovary; Hx* [history of] *of total abdominal hysterectomy and* [uni]*lateral oophorectomy."*

THC Lube

- *"THC lube is a huge game changer! As well as whatever is in "1906 Love Drops, they increase sensitivity substantially!"*

Vaginismus

- *"I have vaginismus."*

Appendix K: Additional Comments Reported by Women Without FOD

Cannabis and Orgasm

- *"My orgasms are usually more intense and last longer when I have used cannabis before sex."*
- *"While I typically have no issues orgasming without cannabis - when I have imbibed my orgasms are absolutely better."*
- *"The intensity of the orgasm using cannabis vs orgasm without cannabis."*
- *"Quality of orgasm is the biggest difference for me when looking at sex with or without cannabis. I am fortunate to not really have difficulty with reaching orgasm, but my partner and I both prefer to use cannabis before sex simply because the length, intensity, and overall quality of our orgasms is definitely heightened when using cannabis."*
- *"The orgasms are more intense on cannabis."*
- *"My orgasms feel better and more intense when I've ingested cannabis."*
- *"Orgasms while high on cannabis are nearly always better than regular orgasms (though regular orgasms are still awesome!)"*
- *"My orgasms are a lot stronger on mild to moderate cannabis use."*
- *"Stronger effect on edibles, more orgasms."*
- *"Orgasms tend to be more intense with cannabis use."*
- *"It allows me to have longer more frequent orgasms."*
- *"The orgasm is perceived from deeper inside & penetrates the whole body. It feels like a different (lower) wavelength."*
- *"The quality of the orgasm is what interests me the most. They are so much more intense and heavier, longer fuller everything."*

- *"Orgasms on cannabis are more intense, and while I don't have trouble getting to organs without it's much easier with cannabis."*
- *"For me, cannabis makes reaching orgasm easier and they are more intense. It also makes it easier to climax multiple times. I become much more sensitive to touch. This is only when I use vape oil. Gummies help with relaxation and sleep but I haven't noticed a big difference with orgasm."*
- *"Cannabis is not necessary for my orgasms but chances them to much much longer and more intense and very ready to achieve multiple orgasms."*
- *"It makes orgasms longer and stronger."*
- *"My frequency of orgasm hasn't changed, but cannabis has made my orgasms much stronger and it has made having multiples easier."*
- *"It's a different orgasm. It's usually more intense for me than when I'm sober, but it usually allows me to enjoy more intensely since I'm not as worried about what I'm doing."*
- *"Cannabis equals multiple strong orgasms; no cannabis equals orgasms that are less intense."*
- *"I have many multiple orgasms when using vaporized cannabis, esp. more sativa blends. I had trouble with orgasms during most of my life, taking a long time to come. Now I have multiples at a single sexual touch. I am having the best sex of my entire life. Also, I used to only come with oral sex and now come with finger touch and during intercourse."*

<u>Cannabis and Partnered Sex</u>

- *"Cannabis makes my sexual experiences better."*
- *"Sex feels better with weed!"*
- *"Cannabis made a huge improvement in my sex life. I am grateful for it!"*

- *"Definitely enhances the experience for me to smoke before sex. Makes touch and feeling amplified."*
- *"I find using cannabis with sex keeps my mind present and makes the overall experience more enjoyable."*
- *"Cannabis makes sex feel better which in turn helps me climax."*
- *"In the beginning of my relationship, I could not orgasm without cannabis. I've been with my partner for eight years now so the comfort level has meant I can orgasm more easily and without cannabis assistance."*
- *"The reason I don't struggle at all with an orgasm is because I often use a vibrator while having sex, or my husband will give me oral sex in which I will orgasm 90% of the time, and often I will use a vibrator or some other toy while we are having PIV and it makes everything feel so much better, I usually have 2-3 orgasms per session. Using a butt-plug sets me on fire as well, and everything is much more on fire regardless of the activity, when using some form of cannabis. I prefer Binoid brand vapes."*
- *"I've only used cannabis with my current partner. I have not with any other former partners."*

<u>Cannabis Intake Methods</u>

- *"Edibles enhance sex in a way that inhaling smoke does not for me. It is great for my partner as well."*
- *"The way it's ingested makes a difference for me on how likely I am to climax. Edibles are the best way also topical so I use it in multiple ways before sex."*
- *"My experience with cannabis and sex depends on how I consume cannabis- with edibles, I have difficulty with sensation and orgasms may take longer, but are more intense.*

- *When I smoke/vape cannabis, my orgasms tend to be quicker and I find myself less distracted and physically overwhelmed compared to edibles."*

Cannabis Negative Effects

- *"When I have sex after using cannabis, it feels a lot better and I feel more connected to my partner, despite it being more difficult for me to achieve orgasm."*
- *"Cannabis makes me feel distracted during sex."*
- *"I actually try to avoid cannabis before sex these days because I mainly use strains that help me relax my anxiety, so I find they usually make me too tired for sex. So, I've started avoiding cannabis before sex, but would be interested in trying cannabis products that are less tiring (but still not anxiety evoking) for sex."*

Cannabis, Pain, Medical Issues, and Lubrication

- *"That partnered sex is different at different times of the month, and different times of day. And there is more to consider other than cannabis for sex. Although, I am happy cannabis is being looked at ... I think that is not the only factor relevant to pleasure in sex."*
- *"I take my cannabis like my husband takes his Viagra!"*
- *"Cannabis helps me have less pain with sex and also greatly increases my natural lubrication and sense of pleasure. Regularly, I sometimes find it hard to naturally get wet enough or feel pain, but when I use cannabis I don't have pain with sex at all."*
- *"I'd say cannabis does help with orgasms but for myself I do find it negatively affects natural lubrication ability."*
- *"I have endometriosis."*

Sensitivity and Arousal

- *"It makes me more sensitive and turned on usually."*

- *"While I don't have trouble orgasming, I get aroused much easier when I'm on cannabis. Arousal takes longer without cannabis. Orgasms on cannabis are more intense and longer than not on it."*

Suggestions for Future Research

- *"If other substances are involved."*
- *"Ask about circumcised versus uncut."*
- *"You didn't distinguish between penetrative orgasms versus oral/masturbation. Also, you didn't ask about the difference in sensation without orgasm."*
- *"You should ask your respondents whether they take SSRIs --this is important because they can impact sexual functioning."*
- *"Why was there no "a few times a week" option for masturbating?"*
- *"The question about prescriptions is too limiting. I take something that was not listed. I chose the one because I take a sleep aid occasionally."*
- *"I'm only on birth control pills - no other medication - that wasn't an option for question 33."*
- *"Specify if partnered sex includes the use of vibrators."*
- *"Ask more questions about the quality and quantity of orgasm with cannabis compared to without."*
- *"You didn't ask about how I achieve orgasm during sexual intercourse or during solo play. It is important to ask if I was able to achieve orgasm with penetration alone, with use of lubes, with use of toys, with use of finger clitoral stimulation, etc. These same questions should be asked during masturbation as well. Additionally, ask if any cannabis infused lubes were used."*

- *"There were no questions in regards to safety/comfort/ability to communicate with partner(s)."*

Appendix L: Interview Questions

Introduction

The researcher asked the following interview questions of 40 women who consented to be interviewed in the survey and gave their contact information; 20 women who reported orgasm difficulty, known in this appendix as Group 1, and 20 who reported not having orgasm difficulty, known as Group 2.

Group #1 - Women who answered "yes" to difficulty orgasming during partnered sex.

1. What strain(s) of cannabis do you use in general?
2. What strain(s) of cannabis do you use before partnered sex?
3. When do you use cannabis before partnered sex?
4. Why do you use cannabis before partnered sex?
5. What prompted you to start using cannabis before partnered sex?
6. How long after you started using cannabis before sex did you notice if cannabis had an effect or not on your ability to orgasm?
7. Do you and your partner both use cannabis before sex? If yes, every time, sometimes, etc.
8. When did your difficulty experiencing orgasm during partnered sex begin?
9. Have you ever sought treatment for your orgasmic difficulty? If yes, what was the treatment and did it help?
10. Can you please describe your difficulty orgasming during partnered sex?
11. What effect, if any, does cannabis have on your orgasm during partnered sex?
12. What kind of orgasms do you have during partnered sex with and without cannabis before partnered sex? Clitoral, anal, vaginal, etc.

13. In what situations do you orgasm during partnered sex with cannabis before sex and without cannabis before sex? I.e., Oral sex, penetration only, penetration and manual clitoral stimulation, vibrator, other?
14. Is there anything else you would like to share about cannabis and female orgasm that we did not discuss?

Group #2 – Women who answered "no" to difficulty orgasming during partnered sex

1. What strain of cannabis do you use in general?
2. What strain of cannabis do you use before partnered sex?
3. When do you use cannabis before partnered sex?
4. Why do you use cannabis before partnered sex?
5. What prompted you to start using cannabis before sex?
6. How long after you started using cannabis before sex did you notice if cannabis had an effect or not on your ability to orgasm?
7. Do you and your partner both use cannabis before sex? If yes, every time, sometimes, etc.
8. Was there ever a time you could not orgasm or had difficulty orgasming? If yes, did you seek treatment?
9. If yes, what was the treatment and how did it help?
10. What effect, if any, does cannabis have on your orgasm during partnered sex?
11. What kind of orgasms do you have during partnered sex? Clitoral, anal, vaginal, etc.
12. In what situations do you orgasm during partnered sex? I.e.. Oral sex, penetration only, penetration and manual clitoral stimulation, vibrator, other….
13. Is there anything you would say to women who have difficulty orgasming that might help them become orgasmic during partnered sex?

14. Is there anything else you would like to share about cannabis and female orgasm that we did not discuss?

Appendix M: Reasons Women With FOD Reported Cannabis Use Before Partnered Sex

Relaxation, Self-Confidence, Comfort, Less Inhibited, Quiets the Mind, Reduces Pain

- *"It helps me relax and I have more of a chance to orgasm."*
- *"I am less anxious. I am a fat woman and I try to love my body. Cannabis helps me with confidence and I am physically more comfortable."*
- *"I am less self-conscious, less scared. All the things that can hold me back get dampened."*
- *"It quiets my mind and gives me a feeling of, 'Don't worry, you don't have to worry about anything right now, so surrender'."*
- *"I feel more relaxed and I am not trying to aim for orgasm. I can enjoy and be in the moment without an end goal to orgasm. It changes the environment altogether."*
- *"It is hard to switch into sexy mode from mom role and shut off that part of my brain that I need to shut off. Cannabis helps me get 'out of my head'."*
- *"When I use cannabis, I can stay in the moment and focus on pleasure."*
- *"I can focus. I am not anxious, or not thinking about tomorrow."*
- *"Cannabis lowers my inhibitions, and I feel relaxed and comfortable, physically."*
- *"Cannabis brings down my anxiety level. Makes me feel more in the moment. I am not thinking about other things. I am feeling freer about myself."*
- *"I feel I can let myself relax more."*
- *"Cannabis helps me get out of my head and stop the big thinking side of my brain."*
- *"Cannabis helps reduce the pain I have during sex from vaginismus. It is so important to me to relax and feel good and not be thinking so much about what is going on."*

- *"I had crappy partners. They were not spending enough time in arousal. Then I would get worried* [*that*] *I was taking too long and get anxiety and go into my head. Once that starts, there is no stopping it. Cannabis stops it."*

Increased Sensation, Arousal, Heightened Senses and Sensation

- *"Cannabis heightens my sensations and I have more intense orgasms with less physical effort."*
- *"Cannabis heightens arousal and makes sensations more powerful."*
- *"I am more focused on the bodily sensations, the feeling good sensations."*

More Intense Orgasms; Better Orgasms; Multiple Orgasms; Easier to Orgasm

- *"I have more intense orgasms with cannabis. Cannabis intensifies it."*
- *"Cannabis definitely makes orgasms more powerful."*
- *"Orgasms are stronger and I orgasm more when using cannabis, and there can be multiple orgasms with cannabis and that is rare without it."*
- *"Orgasms feel more intense."*
- *"Without cannabis, it is kind of effort to put in that I "get there" locking everything up to the point where I come. With cannabis my perception is completely different - the physical work I have to do to "get there" does not have to lock up."*
- *"Letting go was the biggest part, cannabis helps me let go and experience it."*

Improved Sexual Experience; Sex Feels Better, More Fun, More Bonded and Connected Experience With Partner

- *"Cannabis makes our sex better. It is a discovery we had together."*
- *"Sex is fun - cannabis facilitates that."*
- *"I use cannabis to enjoy the experience more."*

- *"It makes sex better and I use it every time."*
- *"It makes me laugh and sex is fun! I love it when we have fun and it is not always serious. We laugh at whatever is happening.* [Cannabis] *makes it giggly and fun."*
- *"There is an increase in enjoyment. When I use cannabis, it is a slightly better experience."*
- *"I experience a bonding with my partner, personal time together."*
- *"The experience overall is better. I am more connected to my partner."*
- *"Before this partner, I always had difficulty orgasming with a partner, but not with this partner. This is my first committed relationship, there is better compatibility and increased attention to my pleasure."*

Appendix N: What Prompted Women With FOD to Start Using Cannabis Before Partnered Sex

Process of Discovery Unrelated to Sex (45%, *n* = 9/20)

- *"I did not specifically plan to use cannabis before sex and then I noticed it felt good. I noticed it the first time I used cannabis and had sex. It made foreplay and intercourse feel better. I felt less anxious and noticed I could get out of my own head."*
- *"It was a coincidence. I started using edibles. Not for sex reasons, then after an hour it was like, "Let's have sex!"*
- *"I started using cannabis for processing PTSD. I had sexually avoidant behaviors and started noticing it was making masturbation better and then your study prompted me to try it before partnered sex."*
- *"The* [COVID] *pandemic prompted me to start using cannabis before sex. I only used cannabis once or twice before this and noticed that cannabis increased my arousal."*
- *"About 1-2 years ago, I would notice when I used cannabis that it would increase my libido. That is when I noticed the connection."*
- *"I asked my dad for a hit of cannabis after a stressful day at work and went home and had sex with my husband and for the first time ever, I had an orgasm during partnered sex."*
- *"After experiencing cannabis' effects non-sexually, for example, quieting my mind, not worrying about the future and experiencing more relaxation, I became interested in incorporating cannabis into my sexual life, first into masturbation and then with a partner."*
- *"I was young when I started smoking. I was 15 when I started. As an adult, I thought, 'Well, this worked when I was young, so let's see! I went through a trial and error and found this* [cannabis] *works."*

- *"I noticed that it* [cannabis] *increased my libido."*

Process of Discovery Related to Sex (45%, *n* = 9/20)

- *"I was dating a guy, who is now my husband, who I had explained my sexual abuse history to and he said, "Try this* [cannabis]" *before we had sex. And it worked the first time."*
- *"I started using cannabis with a sexual partner I had in 2018. It changed my perspective on what sex could feel like. It was total chance. The first time I used cannabis before sex, everything felt better. I felt more relaxed and more turned on."*
- *"It started as a bonding experience with my partner and it became intimate afterwards."*
- *"It was a boyfriend's idea, before the* [COVID] *pandemic, that is how I learned sex was better. With new partners I tell them I use cannabis before sex and they join in using it."*
- *"It was a one-off incident where my partner and I had a good experience that we created. We were both high and we were both enjoying being with each other in the moment."*
- *"My partner and I started off something that made our sex better. It was a discovery we had together."*
- *"I stumbled on it with my current partner. It was random. A friend had given me a little chocolate with cannabis in it. It was a totally different experience. It became a habit to use cannabis before sex."*
- *"My husband had read about it and then we tried it."*
- *"I just knew my orgasms were just way better with it."*

Social Media or Friends

- *"I learned about cannabis before sex through the social media, on Reddit, and hearing from friends."*

- *"I heard that sex was better and that made me check it out. I do not remember where I heard it but I noticed that it made sex better for me, too, and I use it everytime before sex."*

Appendix O: What Prompted Women Without FOD to Use Cannabis Before Partnered Sex

Process of Discovery

- *"I was super against it. I started using it because my flatmates were using it. I tried it randomally and I would smoke during COVID. It became a relaxation ritual and I noticed I was feeling more turned on when my boyfriend was not around. He does not partake."*
- *"I started taking it and I noticed how intense my orgasms were and shortly afterwards, my doctor, Dr. Becky Lynn, did research on it."*
- *"I am not able to mentally let go." - can have shivers out if alone - too in head - am I doing it right - frustrated the whole situation - why am I questioning this. All heady chatter calms down - Heady with sativa =- makes it more heady . I was a hard-core alcoholic for 10 plus years - after sobering up, time trying sober sex and was not working - felt like two rocks rubbing together /grinding together - easier for me to get high – I float along with it versus grinding along with it."*
- *"It happened organically, but now there is intention behind using cannabis before sex. I did start noticing that when I was on cannabis it made the sex better. I don't go out of my way to smoke it but I do push for sex more when I am stoned because I like it. I like having sex like this. I get stoned and then I am like, Am I horny? Maybe I am, I associate smoking cannabis with sex when husband is around.*
- *"I initially wanted to try it. I liked it and continued using it."*
- *"I like it! I can pinpoint it. At one point, I was on birth control and it tanked my libido. I needed to figure it out so I looked at arousal specifically and I eventually got off birth control but still like using cannabis before sex."*

- *"I don't have an exact answer. I was a recreational user and within the last two years I started using it before sex. For me, cannabis helped me be more present with my partner and more connected with myself."*
- *"I wanted to try it for no reason. I did not have problems orgasming or generally having sex. I was curious."*
- *"I married and divorced a blues musician. He was a regular user and I got to understand the benefits of it. The more experience you have navigating the drug, the more you get to dial in to how good it is."*
- *"I started using it mostly because of my boyfriend's erectile dysfunction problem, and discovered it worked better for me too."*
- *"I had a large ovarian cyst removed and I could not orgasm after that. I did not tell my doctor as I was sure it was mostly psychological as I had been through some trauma. I was not using cannabis at the time. Then, I started using it for other reasons and realized immediately that it increased my libido and I started orgasming again,"*
- *"I got high as a teenager and I enjoyed using it before physical activity, like before running and it enhances the physical experiences of yoga."*
- *"I never used cannabis until I was 60. My son introduced me to it. I have chronic lime disease and I took a few hits from his joint and my anxiety went down. I started noticing my arousal increasing and within a week after using cannabis, my orgasm was there. I am 71 now. I orgasm now with or without cannabis before sex."*
- *"I started smoking with my neighbors when I was 41. They grew in their house and I was around them quite a bit. They would say, "Why don't you try it?" Eventually, I did. And by this point, I was not having sex with my prior husband. I never orgasmed with him. I noticed*

its aphrodisiac effects and I bought myself some toys and started orgasming. I am 52 now and I am married. I come from a background of childhood sexual abuse and sometimes it is easy to get inside my head. I find cannabis to be the most effective tool to stay out of my head, it helps me lower my 'mental walls' during sex. Cannabis is what helped me figure out how to orgasm."

Process of Discovery With Use Before Sex

- *"When I was in high school, I met a guy who smoked a lot of weed and when we smoked we would have great sex. I kept that memory in my back pocket."*

Medicinal Use

- *"I have used cannabis since I was 16 or 17 years old. For the last few years, I use it medicinally and the strains and orgasms are stronger since using medicinally. Medicinal is more controlled."*

Social Media

- *"I read that cannabis makes sex more pleasurable or that it can. It was a nice thing I discovered about it, even at my age, that I would feel my libido has increased and the pleasure has increased as well. It was a coincidence for me."*
- *"I live in Seattle and listen to Dan Salvage's Savage Lovecast podcast. He suggested that people who were uptight about sex to use cannabis. It's not the target market for that but I heard it regularly."*

Appendix P: Cannabis' Effect on Orgasm, If Any, For Women With FOD

More Intense Orgasms; More Sensation; Easier to Orgasm; Multiple Orgasms; Expanded Types of Orgasms

- *"Increased sensation - more intensity more of a full body involvement."*
- *"Increased quality and intensity. Cannabis definitely prolongs the length of orgasm and makes them easier to achieve."*
- *"Absolutely easier to orgasm. (Cannabis) can remove anxiety from the process."*
- *"Makes it more intense and makes me feel closer with my partner. More intimate."*
- *"Amplifies it - overall feeling is extended."*
- *"More intense orgasms with cannabis. Cannabis intensifies it."*
- *"Before using cannabis, I almost never orgasmed. I would orgasm once out of 10 times."*
- *"Intensity and how they feel changes - it becomes easier to orgasm - it becomes a better orgasm."*
- *"Orgasms are stronger and I orgasm more when using cannabis. There can be multiple orgasms with cannabis and that is rare without it."*
- *"Definitely more intense. I am a multiple orgasm kind of person. It is easier to get to the next orgasm with cannabis."*
- *"Cannabis helps me let go and experience it."*
- *"No comparison. Cannabis helps me have an orgasm in general."*
- *"I enjoy sex more with cannabis and it tends to be more likely that I will orgasm."*
- *"It is easier to get to the next orgasm with cannabis."*
- *"Orgasm lasts longer and feels stronger. I do not sit there with a stop watch. I am not sure if it is actually this way or if it is my perception because of cannabis."*

- *"Cannabis has expanded the types of orgasms I can have - full body or localized or mental when not doing anything physical."*

More Connection with Partner

- *"The experience overall is more connected to partner. And overall, I am less self-conscious, less scared. All the things that can hold me back get dampened."*

No Effect on Orgasm

- *"Not that I could notice. Cannabis does not affect the orgasm; it does change the overall experience of sex for me and I noticed it was not always helping."*

Orgasm Returned

- *"Cannabis gave me my orgasm back."*

Still Experimenting

- *"I am still experimenting."*

Appendix Q: FOD During Partnered Sex Described

Took Too Long to Orgasm

- *"Took too long"* [three women's comments]
- *"Takes too long. And I personally need to fantasize."*
- *"Took a long time. It created frustration. He got upset, and it gave me anxiety."*
- *"It gets to a point where I think, "It is not going to happen."*

Difficulty Letting Go

- *"Either way, it is a similar problem – with prior partners and with medication. I get up to the edge, but I don't go over."*
- *"Letting go was the biggest part. My love languages were not hit. I need other arousal types to get to that point."*
- *"All muscles lock and bear down – pushing more blood flow down into genital area."*

Mind is too Active

- *"The difficulty comes, not as much now, but it still happens. It happens when he is pleasuring me and giving me attention. My mind becomes more active than I want it to be. 'Is he getting bored?' 'It is taking too long?'* "[I start] *thinking about ways to feel good instead of just feeling it. That is where the difficulty comes. My mind creates stories that are distracting or it is just 'talking' vs. following the 'pull of pleasure' and allowing it to guide me. When that does happen* [the pleasure guides me], *it guides me to get there* [to orgasm]*."*
- *"Mostly a mental thing. When by myself, I know what to do. If my partner is in the room, it can be hard. I put pressure on myself."*
- *"More thinking – mental thinking piece – and a pain component – anxious avoidant pain cycle. I get stuck in my head."*

Triggers from Trauma

- *"I had triggers from previous trauma. There came a point when I cannot control my chemistry and automatic reactions. I tried mindful techniques. I do not have them (triggers from trauma) anymore."*

Lack of Sensation

- *"Lack of any sensation, really. When I was finally well enough to reexamine self-pleasure, I found myself not feeling any sensation when using the same technique that I used in the past. It took a few months, where my body was healed enough (from neuropathy) that I could feel sensation again. It was a period of time of about six months of very little sensation."*

Partner Issues

- *"Historically, I had crappy partners. They were not spending enough time in arousal, and I would get anxious, then I would get worried that it is taking too long. The anxiety was in my head, and once that starts, there is no stopping it for me. Cannabis stops that cycle."*

Appendix R: Additional Comments by Women With FOD

Releasing Shame and Old Beliefs About Using Cannabis

- *"Focus on how cannabis can help women orgasm versus how they got to the place of the struggle. Dip toes into spirituality in some traditions. Release the shame on women who are relying on cannabis. Cannabis is a tool; it is not something to be ashamed about."*
- *"Letting go of shame and worry is key."*
- *"I wish cannabis was more accepted as an overall property of healing."*
- *"Re-learn that these drugs are all not all bad for you. That is all the message we are getting. I met a guy who introduced me to these drugs. There is still a little voice that says, "You shouldn't be doing this." I am overcoming the message that I was conditioned with as a child and as a young adult. The benefits of the altered state medicine. I noticed these messages have come up during the last month of experimentation. I use cannabis experimentally vs. recreationally."*
- *"It is important that we talk about women who have been able to open up their sexuality, how cannabis affects their sexuality, and dealing with trauma."*
- *"I am a huge proponent of women's sexuality. Women becoming educated and standing up for themselves."*

Environment, Setting, and Intention When Using Cannabis

- *"The setting is important. I have two teenagers in the house. It is very important that they do not see me high. One must feel safe in their environment. It does alter how you appear. Do not be stressed if children see you. It is planned when we smoke a joint together. The spontaneity is not there, but there is intimacy."*

- *"I experienced vaginismus during a period of my life. Cannabis helped me with penetration again."*
- *"I just like to smoke weed and have sex! My relationship status has changed. I am still in the relationship that I have been in for eleven and a half years, but it is an open relationship now. With my main partner, I use cannabis before sex 75% of the time; with other people, I use it 100% of the time. With my main partner, sex is sometimes spontaneous to use cannabis before sex; with all other people, sex is planned."*
- *"It is not instant, but once you put the intention in it, everything changes."*
- *"I think cannabis is a great thing for people who do not get dependent."*

Dosing

- *"I am always thinking in terms of dose. When I use 10MG, I know I am high. There is a lot to be said about a lower dose as well."*
- *"I can change the dose if I want a stronger feeling. For example, if I am in a work situation, I use about ¼ of the dose."*

THC Lube

- *"One time, I got some THC lube. It was amazing. I used it all and cannot find it anymore. THC lube made everything way more intense. The high is a body high in your cervix and uterus."*

Other Benefits

- *"One of the other benefits of cannabis is the different head spaces it can put me into. I am thinking about my pleasure and their pleasure, and focus is on the enjoyment of each other vs. the laundry list of intrusive things that can get into my head. One of the other things I enjoy is it (cannabis) puts me in the mindset of just enjoying the moment."*

Appendix S: Additional Comments by Women Without FOD

Cannabis and First Orgasm

- *"Cannabis is what help me figure out how to orgasm. I started smoking pot when about 41 years old, and that is when I started (sexually) experimenting with myself. When I moved out from my ex-husband's house and moved in with her current partner, I had no orgasm issues at all. It can take a lot longer. If I do not smoke pot before sex, I do not orgasm. I cannot stay out of her head long enough to get there."*

Dosage

- *"How did other females understand the right dosage for them - what is the difference between those who smoke flower vs. take edibles or how they got involved in what works best for them."*

Life Changing, More Adventure

- *"Everything I touched on, I feel passionate about. It has been a life-changing experience for me, for my mental health, and for a really nice sex life it has been a gift, and my husband would agree."*
- *"Cannabis allows for a little more adventure than you may not normally want to do."*
- *"I am just really glad that someone is looking into it. I think that cannabis and female orgasm, female sexual health is under-researched and underutilized."*

Learning About Oneself; Trauma; Setting Boundaries; Getting Off Medication

- *"I feel like this is significant for me with cannabis. I do not use edibles with sex. They are too unpredictable. I was too high one time to know and understand what was happening. That was a very negative experience. The people (I just met) and I smoked with and planned to*

have sex with. I smoked with first without having sex. Before, I would have smoked with them and had sex. This is a very important point."

- *"I experienced a really traumatic event in my 20s and was prescribed Klonopin to use every day for a few days. I am in my 30s now, and I am better than in my twenties. I smoke a lot of weed now. I stopped all of my psychotic meds, and I manage mental health with cannabis. A lot of people who smoke a lot of weed self-medicate - I am an example of someone who chose not to be medicated. I have ADHD, and it kills my libido. Marijuana used to ameliorate the effects of the meds. I learned a lot about my body on stimulants - they repress my libido - stimulants repress my creative urge - repress esthetic joy - have taken them for two years - I realize how much of my sex and sexuality is related to my ADHD. I think Adderall pushes you towards finishing tasks - but then [you] don't enjoy the process of doing it. I realized that part of my use of cannabis during sex - increases my esthetic sensations - I enjoy cooking high - taking Adderall helps me understand what are the intrinsic parts of me and what are the manipulated parts of me."*

Other Comments

- *"I have premenstrual dysphoric disorder* [*PMDD*]*, so when I ovulate, my hormones go crazy. It mimics bipolar symptoms. When ovulating, I would lose who I was. I would get suicidal and very anxious. I am not this kind of person regularly. I really thought I was going insane. I just had a hysterectomy, and I had endometriosis. The PMDD has subsided."*
- *"This is a funny one; it was something I told my ex when we were high. I said something like, "My clitoris feels twice the size!" I felt like I had a huge, really huge clitoris. It was a completely new experience. My partner was very excited about it and a little bit scared. He*

was not sure if he was going to hurt me or something. There was a lot of respect coming from his side.“

Appendix T: Advice From Women Without FOD to Women With FOD

Experiment and Try Cannabis

- *"Change your shower head and explore!"*
- *"Try weed and sensory deprivation; this worked for me."*
- *"The first thing would be "give cannabis a try." It doesn't make you a junkie - it is more like a medication."*
- *"Try weed. It just comes so naturally to me orgasming. I really have no problem orgasming. I can orgasm with my legs crossed and by doing Kegels. I am blessed with that. I have never had to work very hard for it."*
- *"Try not to try!"*
- *"Do not hold the feelings in. Breathe with it. Do not climb it. It will pull you up; it will happen for you. You are not doing it. It will happen (orgasm) when there is a glitch."*
- *"Breathe!"*
- *"Learn about using cannabis and sex. Try different strains to see what works for you."*
- *"Buy a toy and experiment."*
- *"Yes, I think that this (cannabis) should be Female Viagra; it allows you to relax to a level that I think many women cannot do on a day-to-day basis and get more in your body."*

Practice and Re-Train Yourself; Learn About Your Body and Quiet The Mind

- *"Start with yourself. Whether using a vibrator, rubbing nipples, you've got to figure out how to make yourself come. Then, progressively as you learn how to relax and open communication with your partner, you can guide your partner. Once you feel your orgasm, you can guide your partner to go to it. It's practice! You have to practice having orgasms."*

- *"Lay down the pleasure pathways from the genitals to the brain. These pathways need to be strengthened. Practice connecting sensations from genitals. Learn how to feel safe to get into the parasympathetic tone. You do not need a blank mind. Decide where to put your mind. For example, put your mind on your experience or on fantasies. Learn the sensations in your body and get the pathways to strengthen and fire together."*
- *"Get to know your own body and turn off your brain."*
- *"I am a big fan of mindful masturbation, taking the time to really get to know your body, what pleasures you. Not just sexually. And when you decide to masturbate, set the scene. Light a candle, maybe use some cannabis, because your partner is never going to know how to pleasure you the way you pleasure you. The best thing you can do with a partner is to help them out and point them in the right direction."*
- *"Learn your own body and learn how to please yourself, then you can teach your partner how to please you. Don't be afraid of substances to help. Mushrooms and cannabis can alter brain chemistry. Toys are your friend."*
- *"Number one, get to know your body. Do not compare yourself to others as to what they are experiencing in orgasm. Really take the time to learn your body, and if learning your body is difficult for you, go slow. And then take it a step further. Massage and then shower. Every person's body is different."*
- *"Mostly, it is more about turning off the brain. Women struggle between all the stuff going on in their head and erotic desire."*

<u>Choose An Understanding Partner</u>

- *"Make sure you have a partner who is understanding and patient. And don't lower your expectations. For example, don't be too embarrassed or shy if you don't have orgasms easily,*

and be creative and eventually, you will find a way. Just work on it together with your partner or alone, it doesn't matter."

- *"Having a partner that enjoys having sex with you is a huge one. My husband gets off from female pleasure. Our sex life is focused on me having a good time. Picking the right partner is a huge factor in having good sex. I have better sex when I am having sex with someone who is having sex with me, not just my vagina."*

Appendix U: Women Without FOD Report if They Ever Had FOD

When Younger

- *"Yes, when I was young. I am a child of trauma, and once I got to the point of being sexually healthy and had one partner, I could orgasm. In the beginning, I could not always orgasm. I was in a lesbian relationship and had a lot more attention. I started with pot there. I was 18 years old."*
- *"When I was younger, I did not consistently orgasm."*
- *"I had trouble with orgasms during most of my life, taking a long time to come. I never masturbated until I was in my 50's. Now I have multiples at a single sexual touch. I am having the best sex of my entire life at age 71! Also, I used to only come with oral sex and now come with finger touch and during intercourse. About 10 years ago, I started using cannabis."*
- *"Yes, the first few marriages were not so robust. Had a way harder time climaxing when I was younger. Took a few marriages - to incorporate cannabis into sex. Did not happen until kids were out of the picture."*
- *"Yes, definitely, when I was a teenager. How did that change? It had nothing to do with my body. It had to do with having more experienced partners, and maybe it was a mental thing because now I know I should not be afraid to tell my partner what I need and want and to express my desires."*
- *"When I was younger, I could not orgasm from oral sex, especially where I have to concentrate. The orgasm was not the problem. I wanted to enjoy other kinds of pleasure. Now I orgasm every time with oral sex."*

Partner Issues/New Sex Partner

- *"I had partners who made me feel like I was taking too long."*
- *"Yes, when I was married. I used manual stimulation to do its thing."*
- *"When I have a new sex partner, it is hard at first."*
- *"In my first marriage, I never orgasmed with my partner. Until the very end of that marriage when I bought myself some toys and started smoking pot."*
- *"I previously thought I could not orgasm - because I never orgasmed with my ex-husband - from age 19-45. So did not have a lot of time for experimentation."*

Surgery

- *"I could not orgasm for four years after I had an ovarian cyst removed. I discovered cannabis and orgasmed the first time I tried it. Nowadays, I can orgasm without cannabis, but I still use it as it's become part of my relaxing routine and I can orgasm more easily using it and just generally feel more sexual, so I always have more multiple orgasms when I'm high."*

Anti-depressants

- *"I was on antidepressants, and that affected me negatively, but beyond that, I am pretty blessed. The antidepressants affected any kind of sexual pleasure - I could not orgasm on my own, no matter how hard I tried. I was not using cannabis when I was on the antidepressants. While being on cannabis, I have had a hormonal IUD removed, and that did not change anything. I also have gone on Ritalin, and that has not affected anything either."*

Stress

- *"When sober and if I am going through really stressful times. If something has to get done, or if there is any pressure of me having to come, I will have a more difficult time. If anxious*

and the usual encouragement turns into pressure. Harder to come when sober in these circumstances."

Appendix V: World Association for Sexual Health Declaration of Sexual Rights

DECLARATION OF SEXUAL RIGHTS

In recognition that sexual rights are essential for the achievement of the highest attainable sexual health, the World Association for Sexual Health:

STATES that sexual rights are grounded in universal human rights that are already recognized in international and regional human rights documents, in national constitutions and laws, human rights standards and principles, and in scientific knowledge related to human sexuality and sexual health.

REAFFIRMS that sexuality is a central aspect of being human throughout life, encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles, and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious, and spiritual factors.

RECOGNIZES that sexuality is a source of pleasure and wellbeing and contributes to overall fulfillment and satisfaction.

REAFFIRMS that sexual health is a state of physical, emotional, mental and social wellbeing in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual

health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence.

REAFFIRMS that sexual health cannot be defined, understood or made operational without a broad understanding of sexuality.

REAFFIRMS that for sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.

RECOGNIZES that sexual rights are based on the inherent freedom, dignity, and equality of all human beings and include a commitment to protection from harm.

STATES that equality and non-discrimination are foundational to all human rights protection and promotion and include the prohibition of any distinction, exclusion or restriction on the basis of race, ethnicity, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status, including disability, age, nationality, marital and family status, sexual orientation and gender identity, health status, place of residence, economic and social situation.

RECOGNIZES that persons' sexual orientations, gender identities, gender expressions and bodily diversities require human rights protection.

RECOGNIZES that all types of violence, harassment, discrimination, exclusion, and stigmatization are violations of human rights, and impact the wellbeing of individuals, families and communities.

AFFIRMS that the obligations to respect, protect and fulfill human rights apply to all sexual rights and freedoms.

AFFIRMS that sexual rights protect all people's rights to fulfill and express their sexuality and enjoy sexual health, with due regard for the rights of others.

Sexual rights are human rights pertaining to sexuality:

1. The right to equality and non-discrimination

Everyone is entitled to enjoy all sexual rights set forth in this Declaration without distinction of any kind such as race, ethnicity, color, sex, language, religion, political or other opinion, national or social origin, place of residence, property, birth, disability, age, nationality, marital and family status, sexual orientation, gender identity and expression, health status, economic and social situation and other status.

2. The right to life, liberty, and security of the person

Everyone has the right to life, liberty, and security that cannot be arbitrarily threatened, limited, or taken away for reasons related to sexuality. These include: sexual orientation, consensual sexual behavior and practices, gender identity and expression, or because of accessing or providing services related to sexual and reproductive health.

3. The right to autonomy and bodily integrity

Everyone has the right to control and decide freely on matters related to their sexuality and their body. This includes the choice of sexual behaviors, practices, partners and relationships with due regard to the rights of others. Free and informed decision making requires free and informed consent prior to any sexually-related testing, interventions, therapies, surgeries, or research.

4. The right to be free from torture and cruel, inhuman, or degrading treatment or punishment

Everyone shall be free from torture and cruel, inhuman, or degrading treatment or punishment related to sexuality, including: harmful traditional practices; forced sterilization, contraception,

or abortion; and other forms of torture, cruel, inhuman, or degrading treatment perpetrated for reasons related to someone's sex, gender, sexual orientation, gender identity and expression, and bodily diversity.

5. The right to be free from all forms of violence and coercion

Everyone shall be free from sexuality related violence and coercion, including: rape, sexual abuse, sexual harassment, bullying, sexual exploitation and slavery, trafficking for purposes of sexual exploitation, virginity testing, and violence committed because of real or perceived sexual practices, sexual orientation, gender identity and expression, and bodily diversity.

6. The right to privacy

Everyone has the right to privacy related to sexuality, sexual life, and choices regarding their own body and consensual sexual relations and practices without arbitrary interference and intrusion. This includes the right to control the disclosure of sexuality-related personal information to others.

7. The right to the highest attainable standard of health, including sexual health; with the possibility of pleasurable, satisfying, and safe sexual experiences

Everyone has the right to the highest attainable level of health and wellbeing in relation to sexuality, including the possibility of pleasurable, satisfying, and safe sexual experiences. This requires the availability, accessibility, acceptability of quality health services and access to the conditions that influence and determine health including sexual health.

8. The right to enjoy the benefits of scientific progress and its application

Everyone has the right to enjoy the benefits of scientific progress and its applications in relation to sexuality and sexual health.

9. The right to information

Everyone shall have access to scientifically accurate and understandable information related to sexuality, sexual health, and sexual rights through diverse sources. Such information should not be arbitrarily censored, withheld, or intentionally misrepresented.

10. The right to education and the right to comprehensive sexuality education

Everyone has the right to education and comprehensive sexuality education. Comprehensive sexuality education must be age appropriate, scientifically accurate, culturally competent, and grounded in human rights, gender equality, and a positive approach to sexuality and pleasure.

11. The right to enter, form, and dissolve marriage and other similar types of relationships based on equality and full and free consent

Everyone has the right to choose whether or not to marry and to enter freely and with full and free consent into marriage, partnership or other similar relationships. All persons are entitled to equal rights entering into, during, and at dissolution of marriage, partnership and other similar relationships, without discrimination and exclusion of any kind. This right includes equal entitlements to social welfare and other benefits regardless of the form of such relationships.

12. The right to decide whether to have children, the number and spacing of children, and to have the information and the means to do so

Everyone has the right to decide whether to have children and the number and spacing of children. To exercise this right requires access to the conditions that influence and determine health and wellbeing, including sexual and reproductive health services related to pregnancy, contraception, fertility, pregnancy termination, and adoption.

13. The right to the freedom of thought, opinion, and expression

Everyone has the right to freedom of thought, opinion, and expression regarding sexuality and has the right to express their own sexuality through, for example, appearance, communication, and behavior, with due respect to the rights of others.

14. The right to freedom of association and peaceful assembly

Everyone has the right to peacefully organize, associate, assemble, demonstrate, and advocate including about sexuality, sexual health, and sexual rights.

15. The right to participation in public and political life

Everyone is entitled to an environment that enables active, free, and meaningful participation in and contribution to the civil, economic, social, cultural, political, and other aspects of human life at local, national, regional, and international levels. In particular, all persons are entitled to participate in the development and implementation of policies that determine their welfare, including their sexuality and sexual health.

16. The right to access to justice, remedies, and redress

Everyone has the right to access to justice, remedies, and redress for violations of their sexual rights. This requires effective, adequate, accessible, and appropriate educative, legislative, judicial, and other measures. Remedies include redress through restitution, compensation, rehabilitation, satisfaction, and guarantee of non-repetition.

******

The *World Association for Sexual Health* (WAS) is a multidisciplinary, world-wide group of scientific societies, NGOs and professionals in the field of human sexuality which promotes sexual health throughout the lifespan and through the world by developing, promoting and supporting sexology and sexual rights for all. The WAS accomplishes this by advocacy

actions, networking, facilitating the exchange of information, ideas and experiences and advancing scientifically based sexuality research, sexuality education and clinical sexology, with a trans-disciplinary approach. The *WAS Declaration of Sexual Rights* was originally proclaimed at the 13th World Congress of Sexology in Valencia, Spain in 1997 and then, in 1999, a revision was approved in Hong Kong by the WAS General Assembly and then reaffirmed in the *WAS Declaration: Sexual Health for the Millenium* (2008). This revised declaration was approved by the WAS Advisory Council in March, 2014.