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Comparing Mental and Physical Health of Full-Service Sex Workers in the United States to the Health of the General Population in 2019-2020

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ABSTRACT

Introduction: Full-service sex workers (FSSWs) are relatively prevalent in the U.S. and are known to face criminalization, stigma, and other factors relating to poor health. The main aim of this study was compare the mental and physical health of full-service sex workers in the United States in 2019-2020

Methods: In this prospective cohort study, participants were recruited through national community samples from U.S.-based FSSW advocacy and community organizations. Data were collected from November 2019 to February 2020. The study sample (n=83) included mostly of the white (81.9%), cisgender females (66.3%), who were relatively young (28.01 [4.25]), and identified as a sexual minority (57.8%). Participants completed an online survey on mental (e.g., depression, anxiety) and physical (e.g., sleep, fatigue) health, using the patient-reported outcomes measurement information system (PROMIS-29). Mean (SD) and Frequency (%) were used for description and for data analysis z-tests in SPSS version 27 with 5% significant level were used.

Results: The sample of FSSWs reported significantly poorer health in all health domains compared to the U.S. general population reference indices. FSSWs showed higher levels of depression (p <.001), anxiety (p <.001), fatigue (p <.001), sleep difficulties (p <.001), lower levels of physical functioning (p <.001) and the ability to participate in social activities (p =.03) compared with the U.S. reference indices.

Conclusions: FSSWs experience significant mental and physical health disparities compared to general population. the need for further investigation of the social-ecological determinants of health for members of this marginalized community, many of whom are known to face health inequities.

Keywords: Full-Service Sex Work, Sex Work, Health Disparities, Mental Health, Physical Health

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Introduction

Full-service sex workers (FSSW) are individuals who exchange sexual services for benefits such as money, goods, and other services (1–3). It is estimated that nearly 41 million individuals engage in full-service sex work worldwide (4), and approximately 1-2 million people engage in full-service sex work in the United States (1,2).

FSSWs reported a number of potential barriers to their health and well-being. Decline in health regarding this group may relate to the criminalized nature of the industry (5,6) and non-affirming sex work-related laws and policies (7). In addition, obtaining legal representation, protection, safety nets, and support may be difficult for FSSWs (2,6,8). FSSWs often report repeated experiences of stigma and discrimination, as well as feelings of marginalization, when seeking support from others (9). Due to low access to desired healthcare services or healthcare providers and healthcare policies which makes them feel discriminated or excluded, FSSWs may underutilize healthcare services compared to others (10). These barriers contribute significantly to relatively poor health among FSSWs compared to others. However, the extant empirical research on health among FSSWs is limited in several important ways (1).

Generally, little research on health has been done among FSSWs, indicating an apparent need for such work (8,9,11). In the present study , the difficulties of recruiting and/or retaining FSSWs in research studies has been mentioned(12,13). Regarding terminology, researchers have used multiple and sometimes non-overlapping definitions of FSSW(1–3,14–16), which makes it hard to synthesize the findings. Further, there is a lack of research including geographically-diverse samples of FSSWs in the U.S. Many FSSW studies are conducted internationally, or focus on one specific geographic location within the U.S. (17–20), indicating current findings may not be generalizable to U.S. FSSWs as a whole. The lack of literature regarding FSSWs' health may under-represent their mental health (3,21), and some studies have used checklist-item assessments of health indices, which have clear limitations (22,23). Many studies have used face-to-face interviews, which provide opportunities for collecting rich data directly from the participant, but, it also may lead to underreporting of physical and mental health issues due to social desirability (11,17,24). Others have used convenience sampling, which can introduce sampling bias (1,21,25).

Despite the above limitations, the current health research on FSSWs has provided several compelling findings, pointing to additional research being warranted. Broadly speaking, FSSWs may experience significant mental and physical health disparities when compared to the general population (2,8,17,24,26). Regarding physical health, many sex workers experience relatively high rates of homelessness, substance abuse, sexual risk, and violence – each of which can contribute to poor physical health and health conditions (17). Regarding mental health, relatively homogeneous samples of FSSWs (e.g., African American, from Miami) have reported high prevalence of anxiety, depression, post-traumatic stress syndrome, symptoms of psychosis, and suicide attempt, compared to the general population (17,20,24,27). While this research is important, there is a lack of other important studies. For example, no known study has assessed health comprehensively among the geographically-diverse U.S. FSSWs, followed by comparing the health of FSSWs to U.S. general population.

Therefore, FSSWs are relatively common in the U.S., and face multiple barriers to health and well-being. There is a lack of literature on FSSWs' health which has several limitations, but the extant empirical work provides some evidence regarding health disparities between FSSWs and others. The purpose of this study was to increase the literature on FSSWs' health and address some of the current limitations of the literature, by investigating group-level differences between geographically diverse U.S. FSSWs and U.S. general population in multiple domains of health. In particular, a psychometrically valid measure of health assessed and provided population-level norms for each

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health domain (28,29), comparing the health of the geographically-diverse sample of U.S. FSSWs with a norm-referenced sample of U.S. general population. To facilitate the study design and recruitment, community-based participatory research strategies were used, enlisting several local and national community organizations to collaborate. Based on previous work, it was hypothesized that FSSWs would report poorer health in all domains tested, compared to the general population reference group.

Methods

This was a prospective cohort design with a sample size of 83 FSSWs who participated in a larger study regarding sexual behaviors, health attitudes, and HIV prevention. Data were collected from November 2019 to February 2020. An *a priori* power analysis using G*Power for two-tailed independent means that comparisons indicated that a total of 64 individuals in the FSSWs and 64 individuals in the U.S. reference groups were needed to achieve 80% power with medium effect size (Cohen's d = .5). Given that the U.S. reference indices are generated from data obtained through the U.S. Census, the analyses of this study were appropriately powered. This study and its methods were approved by the authors' Institutional Review Board (IRB-2019-030).

The study survey was developed with input and community-level recommendations from a local sex worker organization, provided during the community meetings attended by the authors of this study. In particular, community members provided recommendations for wording of survey questions, such that they reflected sensitivity to the community and identified additional important areas of investigation. Participants were recruited through community-based collaboration with several local and national sex worker advocacy organizations. These organizations disseminated the online survey to their community via flyers, word of mouth, and internal listserv/media postings, representing a national-level community-based sampling methodology. These methods were chosen because it is often difficult for non-community members to access and sample the community (12).

Potential participants of the study completed an online screener to determine eligibility for the current study. Inclusion criteria from the larger study required participants to be 18 and above, who have performed full-service sex work (i.e., receptive or penetrative anal or vaginal sex for goods, money, or other services) prior to 2018, and currently perform non-regulated full-service sex work. Due to the nature of the larger study investigating pre-exposure prophylaxis, participants were excluded if they were diagnosed with HIV, and oral sex was not included in this study's definition of full-service sex work. Additionally, temporal demand of performing sex work prior to 2018 were used to define sex work in this and the larger study, to investigate the effects of recent policy variables on FSSWs. Eligible participants were directed to the online informed consent page. Participants who gave their consent were then directed to a Qualtrics survey. To ensure anonymity and improve the security of this population, participants signed an electronic consent form, and the identifying information was stored separately from the study data. Survey completion time was approximately 25 minutes. Participants received a $10 Amazon gift card for completing the survey. Sociodemographic items and a subset of health-related questions were used for this study.

Measures

Sociodemographic information

Participant's race, ethnicity, gender, the highest education level, sexual orientation, sex-work income, non-sex-work income, and total time engaging in full-service sex work were all assessed using standard face-validity items. IP address was used to identify state-level breadth of survey reach.

Patient Reported Outcomes Measure Information System-29 (PROMIS-29)

The PROMIS-29 is a 29-item measure that assesses overall health and specific health domains in the last 30 days (29). The overall measure

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demonstrates test-retest reliability and internal consistency among individual subscales and composite scores (α=.73-.95) (28). Specific subscales used in this study include depression (α=.84), anxiety (α=.80), fatigue (α=.83), sleep disorder (α=.88), ability to participate in social roles and activities (α=.78), and physical functioning (α=.86). Symptom-oriented health domain subscales (i.e., anxiety, depression, fatigue, and sleep disturbance) are coded such that higher scores indicate worse symptomology. Functional-oriented health domain subscales (i.e., physical functioning and social role) are coded such that higher scores represent better functioning in those domains. Pain interference and pain intensity subscales were removed to ease participant' response burden.

Statistical Analysis

All analyses were conducted using SPSS v.27. As data surrounding sex work is often questioned for integrity (12), several methods of data quality assurance were used. To assure data quality, potential problematic patterns in responses were assessed (e.g., responding "neutral" to all questions), and response sets originating from the same IP address were excluded. Moreover, four embedded captcha tasks and Likert-style attention checks were used throughout the survey. The subjects' characteristics were analyzed using descriptive statistics of sociodemographic (such as mean (SD), Frequency (%)) and PROMIS-29 variables. The PROMIS-29 provides T-scores for each raw score. As such, the obtained scores become standardized for comparison, and a difference of scores by 10 represents one standard deviation. Thus, the central analyses of this paper were conducted using z-tests to test significant differences between the obtained T-scores for FSSWs' sample and the general population reference T-scores. Six z-tests – one for each health domain, were conducted. *P*-values < .05 level were considered significant.

Results

The sample mostly included white people, cisgender female, identified as a sexual minority, who were relatively young, and had received some formal college education. Full sociodemographic information is included in Table 1. Data were obtained from a total of 30 geographic states/territories. California, New York, Illinois, Ohio, Georgia, Pennsylvania, and Texas demonstrated the largest geographic clustering sources of participants' data. Additional descriptive information of geographic density and dispersion of data can be found in Figure 1.

Table 1. Socio demographic Characteristics of Participants

Characteristic	*n/M(SD)*	%
Race		
White	68	81.9
Black/African American	7	8.4
Other	5	6.0
Asian	3	3.6
Ethnicity		
Hispanic, Latino, Latina, *Latinx*	19	22.9
Gender		
Cisgender Female	55	66.3
Cisgender Male	11	13.3
Gender Nonconforming	9	10.8
Transgender Female	5	6.0
Transgender Male	2	2.4
Not Listed/Other	1	1.2
Education		
Less than High School Degree	12	14.5
High School Degree/GED	22	26.5
Some College, No Degree	35	42.2
Associates/Technical Degree	3	3.6

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Characteristic	*n/M(SD)*	%
Bachelor's degree	7	8.4
Graduate Degree	4	4.8
Sexual Orientation		
Straight	35	42.2
Gay/Lesbian	9	10.8
Bisexual	18	21.7
Queer	18	21.7
Not Listed	3	3.6
Age		
Years	28.01 *(4.25)*	-
history of Sex Worker (Year)		
Years	4.35 *(3.10)*	-
Income		
Non-Sex Work Income	1.62 (.94)	-
Sex Work Income	2.41 (1.23)	-
Sex Work Income	2.41 (1.23)	-

Note: Income questions were assessed through Likert-style responses such that higher Likert values indicate higher income.

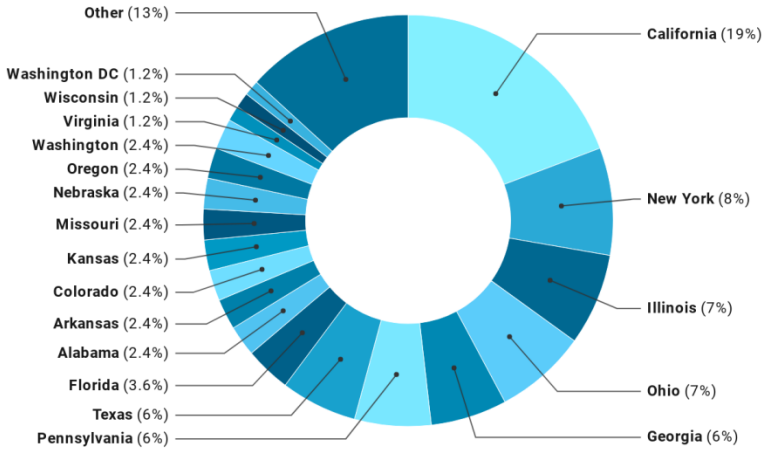

Figure 1. Geographic Breakdown of Study Sample

**Note.* States classified as "Other" in this figure include the following: Arizona, Iowa, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, Oklahoma, Rhode Island, and Tennessee. Each state within the "Other" classification represents 1.2% of the total data obtained.

FSSWs in this sample reported poorer health in all domains compared to the population norms. Specifically, the sample FSSWs expressed higher levels of fatigue, depression, anxiety, and sleep disorder, and lower levels of physical functioning ($p < .001$), as well as less ability to participate in social roles and activities ($p = .03$), compared to the general population's normed reference of the PROMIS-29 measure found on the PROMIS 29 – PROFILE v2.0 table set of the manual scoring.

Table 2. Health Comparisons of FSSW to General Population Normed (G.P.N) Reference

	M (*SD*)	***G.P.N reference* mean**	***p* value***
Depression	10.42 (3.76)	8.52	$p < .001$
Anxiety	11.01 (3.72)	10.40	$p < .001$
Fatigue	11.96 (3.60)	6.12	$p < .001$
Sleep Disturbance	11.40 (4.08)	8.52	$p < .001$
Physical Functioning	13.84 (2.28)	-9.98	$p < .001$
Social Role Satisfaction	11.41 (3.08)	2.23	$p = .03$

Note: General population normed reference T-scores M(*SD*) are 50(*10*) across all health domains

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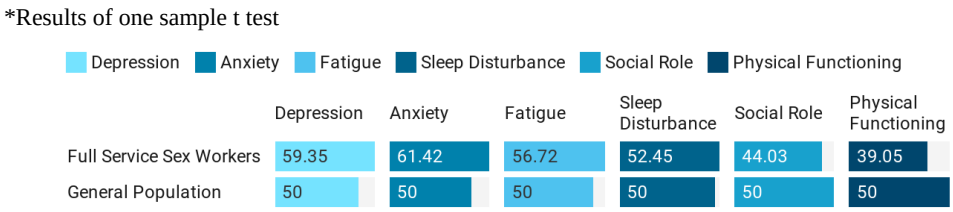

Figure 2. Bar Chart for Visual Comparison of Health Indices

Note: Symptom-oriented subscales (i.e., anxiety, depression, fatigue, and sleep disturbance) is coded such that higher scores indicate worse symptomology. Functional-oriented subscales (i.e., physical functioning and social role) are coded such that higher scores represent better functioning in those domains

Discussion

This was the first known study to directly compare the health of U.S. FSSWs to U.S. general population, using a psychometrically valid measure of multiple domains of health. Previous papers have explored either physical or mental health among FSSWs; however , there were no known studies conducting a comprehensive assessment of physical and mental health among a diverse sample of U.S. FSSWs (2,8,17,24,26). Participants in this sample reported poorer health compared with the U.S. general population in all the six tested health domains. Accordingly, the evidence which was provided , indicated that, on average, U.S. FSSWs experienced more fatigue, worse physical functioning, sleep disorder, less ability to engage socially, more depression, and anxiety. The results indicated that FSSWs face multiple physical and mental health disparities in the U.S that extend beyond sexual health risk.

Stigma may explain these multiple health disparities between U.S. FSSWs and general population, which is consistent with fundamental cause theory, stating that socially-based factors such as stigma may explain health inequities among many marginalized individuals (30). The stigma of sex work may have an impact on multiple domains of life such as self-perception, social relationships, and access to and utilization of health services (31,32). Thus, stigma could have pervasive and enduring effects on both mental and physical health of sex workers. The current study does not investigate associations between stigma and health; however, future research can test both bivariate associations between these variables, as well as models in which stigma mediates the association between participating in FSSWs and health outcomes.

Related theories also may help to further explain the findings of this study. For example, minority stress theory proposes that being identified as a minority may relate to experiencing both distal and proximal stressors, each of which relates to poor health. Examples of distal stressors include discriminatory behavior, violence, and stigma from others. Examples of proximal stressors include concealing one's identity and self-stigma (33). U.S. FSSWs are a minority, insofar as they are relatively few compared to non-FSSWs, and also because they are frequently marginalized and even criminalized (2,6). They, therefore, may experience distal stress in the form of stigma from others, and proximal stress in the form of stigma about themselves. This combined experience of stigma from others and about themselves could explain relatively poor physical and mental health compared to non-FSSWs. The social ecological model also may help to explain the current findings. This model describes the various levels (e.g., microsystem, mesosystem, macrosystem) of factors that influence mental and physical health (10). FSSWs may experience self-stigma in their microsystem, difficulties in their patient-provider relationship in the mesosystem, and criminalization in the macrosystem. These factors likely relate to mental and physical health disparities among the U.S. FSSWs.

This study is notable not only for its findings, but also for its sample and methodology. Regarding the sample, participants were recruited through a national sampling. The final sample included FSSWs from 30 unique geographic

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states/territories in the U.S. .Additionally, nearly 60% of the subjects were identified as a sexual minority. These are improvements over past studies on FSSWs ,which include samples that are less diverse geographically and in terms of sexual orientation (34). The authors were able to recruit a somewhat diverse sample because of the community's collaboration. They were partnered with both local and national sex worker organizations to design the online survey and to recruit participants into the study. It is recommended that future researchers attempt to use community-based approaches when working with FSSWs, because such approaches can facilitate critical community's input throughout the study conception and execution.

The findings of this paper have implications for future research, healthcare provision, and policymaking. Future research can build upon these findings by testing empirical models including variables mentioned above such as patient-provider relationship, stigma, and health. Longitudinal studies regarding FSSWs can track FSSWs' health over time, while psychoeducational and behavioral interventions can be designed to improve their health. Future research also can aim to include diverse FSSW samples in terms of age, biological sex, gender identity, and race/ethnicity. Regarding healthcare provision, it is important for healthcare providers to remain aware and unbiased in their work with FSSWs. This includes neutral assessments of health behavior and tailored treatment recommendations to maximize health (e.g., suggesting harm reduction approaches instead of abstinence). Regarding policy, clinics and hospitals should create institutional and training policies for healthcare providers and other staff who support working with FSSWs – which ultimately could help promote cultural sensitivity, meet the unique health needs of FSSWs, and reduce health inequities in this group. Overall, it is critical for healthcare institutions and individual providers to provide healthcare services to FSSWs, suitable for their unique needs. As per the study's findings, it is clear that these needs extend beyond sexual health and include domains in both mental and physical health. More broadly, the findings point to the importance of state- and federal-level policy protecting the health and rights of FSSWs.

This study had several limitations worth considering. First, the subjects were primarily white and cisgender females. Therefore, they may not represent FSSWs with more diverse gender and racial/ethnic identifies. Next, within-group comparisons of health among the FSSWs was not conducted. However, as per above, some FSSWs may especially report poor health. Finally, the community sampling technique and online survey may have precluded the authors from including FSSWs who are experiencing severe marginalization and/or lack of resources.

Conclusion

A geographically-diverse sample of U.S. FSSWs reported poorer mental and physical health in all domains when compared to U.S. general population. These findings highlight the need for further research, clinical work, and policy initiatives aiming to reduce health disparities among FSSWs. Additionally, these findings underscore the need for physicians to address the comprehensive mental and physical health needs of FSSWs.

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Stephen Ramos and Steff Du Bois developed the present study, acquired funding through the

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American Psychological Foundation, and met with community collaborators throughout the development and dissemination of the study. Winifred Guerra contributed to the introduction, while Stephen Ramos provided supervision and contributed to the methods, statistical analyses, results, and discussion sections. Steff Du Bois also provided advisory supervision and mentorship throughout manuscript development.

Conflict of Interest

All authors declared no conflict of interest.

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