About the nature of prostitution: Personality and individual differences

between sex workers and a cohort sample.

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**Abstract**

This paper explores the individual differences between sex workers (SW) and a cohort sample through the lens of personality and evolutionary psychology. The survey was completed by thirty-three individuals, thirteen in the Sex Worker Group and eighteen in the Cohort Group. Participants reported on measures of Life History Theory using the High-K Strategy scale, the Dark Triad (DT) using the Short Dark Triad measure, the Big Five dimensions of personality using the Ten-Item Personality Inventory, and attitudes toward casual sex and long-term commitment using the Multidimensional Sociosexual Inventory. We questioned whether: a) Sex workers would present scores indicating a faster life-history strategy than our cohort sample; b) Sex workers would present higher scores in measures of the DT when compared to cohort sample, c) Sex workers would have a higher presence of positive attitudes toward Short-Term mating and a lower presence of positive attitudes toward Long-Term mating when compared to our cohort sample, and d) Sex workers would have lower scores in the Agreeableness and Consciousness dimensions of the Big Five. Results of the study are anticipated to be preliminary, findings will help to understand the uniqueness of the characteristics of sex workers but more research is needed in this area.

*Keywords:* prostitution, sex work, evolutionary psychology, personality

**About the nature of prostitution: Personality and individual**

**differences between sex workers and a cohort sample.**

Prostitution and sex work have always been an area where people feel compelled to express their opinions based on stigma, emotions, and individual morals, despite the absence of extensive scholarly studies regarding the nature and extent of the issue. Prostitution is a prominent feature on the culture and history of the United States, however, most representations of prostitutes and sex workers are not based on the actual lives of individuals who are engaging on selling erotic/sexual services but instead on the needs of a narrative that portrays sex workers as the personification of societal problems, or falling into the stereotype of "pretty woman". While these cultural narratives might be entertaining for the general public, it perpetuates social attitudes and preoccupations instead of providing information about the real lives of those who participate in the sex trade industry. (Ditmore, 2010).

Over the past four decades, there has been evidence of a trend of normalization of the sex industry. Research suggests that this trend might have a close relationship with the internet, which provides a wealth of erotic services, information and the opportunities to connect with other interested parties. There have been several trade shows or expositions (Expo-Sex) that attract porn starts, sex-toy companies, the media and thousands of fans, but despite the efforts to normalize the overall sex industry, commercial sex continues to be viewed by many as deviant and harmful for society (Weitzer, 2011). This might be partially due to the consequential impact of mainstream mass media in our society, it is relevant to mention that representations of prostitution have been created and strongly labeled with a negative bias, as the media tends to

focus on the worst cases of abuse and they closely link prostitution with human trafficking. The media rarely portrays positive or even neutral reports of prostitution (Weitzer, 2018; Armstrong, 2019). The portrayal of prostitution by the media is typically constructed to convey the idea of a problematic, dangerous, and threatening subpopulation.

Bullough (1965) was the first, and so far the only one, to address the serious lack of comprehensive behavioral studies on prostitution. The nature of prostitution is not explained by a single component but rather by a range of complex psychological and environmental factors that calls for the development of the research in psychology. Most sex workers in the United States are thought to be women, but a groundbreaking study of adolescents who exchange in sex services in New York City found that 48% were female, 45% were male and 8% were transgender (Curtis, Terry, Dank, Dombrowski & Khan, 2008). It is also important to note that the average age at which participants started to engage in the sex trade was fifteen years old. (Curtis, Terry, Dank, Dombrowski & Khan, 2008). This is an important distinction from the normative research that focuses on sex work as phenomena almost exclusive to women and mainly in individuals of legal age, this is not more but another limitation of the research in prostitution (Ditmore, 2010).

Another key issue at the moment of conducting research on such a sensitive topic is the language used. We have opted for Hester, Mulvihill, Matolcsi, Sanchez & Walker (2019) definition: "Prostitution and/or sex work constitutes the provision of sexual or erotic acts or sexual intimacy in exchange for payment or other benefit or need". Prostitution and sex work are terms that refer to an income-generating activity and these terms reflect that reality instead of emphasizing issues of morality, as such, we will be utilizing only those terms interchangeably

throughout the study (Ditmore, 2010). The scope of this study was aimed towards the

understanding of the unique characteristics of the personality and individual differences of men

and women who currently engage in prostitution as well as a cohort sample of adults who do not

engage in prostitution.

Fundamentally, Life-History (LH) theory is derived from evolutionary psychology and is

based on the premise that an array of behaviors and psychosocial indicators will vary in response

to life expectancy cues in the environment. In this "zero-sum game" (Gladden, Figueredo &

Jacobs, 2008. p. 270) resources investments in one particular element unavoidably draw away

from the available resources for other elements of our lives. It suggests that individuals might

allocate different amounts of resources for somatic effort (resources allocated toward individual

survival) and reproductive effort (resources allocated towards the production of new individuals)

based on their environment. (Jonason, Koenig & Tost. 2010; Gladden, Figueredo & Jacobs,

2008). Although the theory was developed originally to explain in between-species differences,

this theory has proven to be effective in predicting within-species differences as well, including

humans (Rushton, 1985). Systematic differences within humans are referred to as individual

differences or personality traits.

In principle, life-history theory predicts that non-random adaptations will occur in

consequence to the balance or dangerousness of socio-ecological conditions encountered in our

environmental circumstances, as well as unique individual genetic differences (Jonason, Koenig

& Tost. 2010). Life-history strategy occurs in a continuum and its traits include sexual, parental,

and cognitive factors that come together to produce functional and coordinated LH strategy, which is referred to as the "K-factor" in the literature (Figueredo et. al, 2005).

Rushton (1985) applied the model of life-history theory to humans and predicted that individuals who manifest a slower life-history strategy would demonstrate better health, higher environmental stability, and more resources invested in their children overall. Individuals with a slow LH strategy would also be characterized by a later onset of sexual maturation (e.g. puberty), later introduction to sexual intercourse, and higher levels of investment in somatic efforts. A slower life-history strategy is associated with a secure attachment, supportive communication (Olderback & Figueredo, 2009), and long-term mating effort (Figueredo et. al, 2005). On the contrary, individuals with a faster life history strategy are more likely to have experienced unstable environments, early onset of sexual maturation (e.g. menarche), an earlier beginning of sexual intercourse behavior (Quinlan, 2003), and higher levels of investment on reproductive effort (see also Figueredo et al. 2005). From an evolutionary perspective, this behavior increases the possibility of at least some reproductive accomplishment despite the risk of high mortality. (van Leeuwen & Mace, 2016). Essentially, the reproductive effort is modified by critical elements of the environment (e.g. resources at disposal, psycho-social circumstances), and distinctive characteristics reflect these components in their life history strategies (Jonason, Webster, Schmitt, Li & Crysel, 2012).

The literature suggests that personality traits may influence motivational biases that reflect on how an individual solves adaptive problems (Jonason & Zeigler-Hill, 2018). Life-history theory and personality traits have been recognized in the importance of the prediction of sexual behavior in the wider population (Patch & Figueredo, 2016). Personality

traits have been related to sexual promiscuity, risky sexual behavior, and general sexuality. (Lodi-Smith, Shepard &Wagner, 2014). Findings by Simpson et al. (2012), suggest that the peril to an unstable environment, especially in early childhood between ages 0 and 5, is a strong predictor for later behavior that could be considered sexually risky, translating into individuals who manifest a higher number of sexual partners, sometimes participate in delinquent behaviors and are more likely to be linked with criminal activity overall.

The Dark Triad (DT) describes three related personality traits that have been linked to negative outcomes in society and at a personal level, having a normally undesirable connotation associated with them (Jonason, Li & Buss, 2010). *Narcissism* is characterized by feelings of superiority and entitlement, *Machiavellism* corresponds to manipulative and exploitative tendencies, and *Psychopathy* is defined by impulsiveness and interpersonal hostility (Jonason & Lavertu, 2017; Valentova, et al., 2019). To varying degrees, all three traits entail a tendency towards emotional coldness, aggressiveness, and dishonesty (Paulhus & Williams, 2002; Jonason, Koeing & Tost, 2010; Jonason et al., 2012). Psychopathy has been shown to be the trait that correlates and reflects a fast life history strategy the best (Jonason, Koeing & Tost, 2010), although some of the research has been inconclusive regarding the correlation between DT traits and a fast life history strategy (Jonason et al. 2009; Patch & Figueredo, 2016; Jonason, Koeing & Tost, 2010), the existing theoretical work proposes that the Dark Triad could be an indicator of a lower K-factor, based on individuals' tendencies for risky behavior, immediate gratification, and a short-lived, unscrupulous sexuality (Jonason et al. 2009; Jonason et al., 2012).

The dark triad psychosocial traits have been suggested to be relevant in predicting a higher count of sexual partners and more permissive attitudes toward short-term mating

(Jonason, Valentine, Li & Haberson, 2011). This assumption could be consistent with the notion

that the inability to exercise self-control and delayed gratification is a consequence of exposure

to an unstable environment in childhood (Quinlan, 2003; Jonason, Koeing & Tost, 2010). The

unpredictability of a children's environment could trigger responses that prevent them from

making investments in long-term strategies, as they develop distorted expectations of their life, it

has been suggested that the dark triad traits might serve as coping strategies to overcome life's

challenges (Jonason, Icho & Ireland, 2016).

Although there could numerous precedents for prostitution, the empirical literature has

documented some relevant attributes such as poor family functioning, adolescent alcohol/drug

abuse, and interparental violence (Nadon, Koverola, Schludermann, 1998). A history of

childhood sexual abuse, childhood physical abuse, and running away from home have been

identified as prominent features among sex workers. Childhood sexual abuse has been suggested

to significantly impact a woman's adult sexual behaviors and the constitution of their intimate

relationships. (Nadon, Koverola, Schludermann, 1998; Testa, VanZile-Tamsen, Livingston,

2006). The relationship between drug abuse and prostitution is unclear, previous research

suggests that the frequency of drug use was not relevant, but the range of substances used was

indeed consequential. Whether illegal substances abuse foreshadows or is the result of

prostitution is currently unsettled, but addiction signifies a reinforcement of the lifestyle to

support the habit (Nadon, Koverola, Schludermann, 1998; El-Bassel, Witte, Takeshi, Gilbert &

Wallace, 2001).

Human mating strategies take place in a spectrum, from short-term mating with little

commitment, to long-term mating, heavily characterized by strong feelings of commitment.

(Jonason & Buss, 2012). Different studies have established a positive correlation between the Dark Triad traits and short-term mating strategies (Jonason & Buss, 2012; Jonason et al., 2009; Stolarski, Czarna, Maleza, Synmaska, 2017), more notably psychopathy has been associated with high mating efforts and low parenting investment (Valentova, et al. 2019). Short-term mating enhances an unconstrained sociosexuality, resulting in more sexual partners, uncommitted relationships, and higher impulsivity (Penke & Asendorpf, 2008; McDonald, Donnellan & Navarrete, 2012). However, most of the research is focused on males, and there are important differences in how males and females express these personality traits. In a study conducted by (Stolarski, Czarna, Maleza, Synmaska, 2017), sociosexuality accounted for only 30% of the significance between life-history strategies and the dark triad in females, and some studies have found that males reported higher DT attitudes than women. (Patch & Figueredo, 2017).

Additionally, we considered that to better encompass the depth and complexity of the individuality of our targeted population, a common measure of personality should be used. The Big Five measures dimensions that consist of openness, conscientiousness, extroversion, agreeableness, and neuroticism, and has become a common measure of personality (Gosling, Rentfrow & Swann, 2003). Existing research supports the claim that the DT traits share one commonality among themselves in relation to the big five model, a negative correlation with the agreeableness dimension, which is not entirely surprising as this dimension is characterized by trustworthiness, altruism, compliance and a tender mindedness (Costa, McCrae, & Dye, 1991; Paulhus & Williams, 2002; Muris, Merckelbach, Otgaar & Meijer, 2017). Mixed results on the research may suggest that narcissism and psychopathy could be associated with extraversion and openness dimensions. Similarly, Machiavellianism and psychopathy have been proposed to be

negatively associated with conscientiousness. Surprisingly, only psychopaths were low on

neuroticism. (Paulhus & Williams, 2002). The findings of the existing research concerning the

correlations between the big five and the dark triad will be relevant at the moment of analyzing

the data for possible differences between what has already been established in the literature with

a general population and what our findings will suggest about individuals who participate in

prostitution.

The main objective of the present study is to open the discussion on the literature

regarding behavioral studies in prostitution, aiming to contribute to filling in the gaps in the

current knowledge of the lives of individuals involved in prostitution. Sex workers are a

population group that suffers from the absence of rigorous analysis and exploration, we intend to

address the underlying differences in personality's characteristics of the individuals who choose

to participate in sex work in contrast with our cohort. We have directed this study into creating

literature that reflects the reality of the individuality of those engaging prostitution.

Lastly, awareness of the sociocultural differences between researchers and our targeted sample

population must be recognized (Wahab, 2003; Sihna, 2017). It is partly due to this gap that

research on the topic of prostitution has been associated with stigmatization on many levels,

directly affecting the quality of research (Hammond & Kingston, 2014). The negative stigma

associated with the sexual services industry results in concerning problems for the researchers

regarding informed consent, confidentiality, ethics, and illegality (Shaver, 2005 & Sinha, 2017)

that must be carefully managed to produce valid and reliable results. The overall perception of

the sex industry under the models of stigmatization supposes the biggest challenge and the

biggest threat to sex workers and its research (Lutnick & Cohan, 2009).

Stigma is defined as a product of some visible disgraced trait or as a result of a perceived

moral defect (Goffman, 1963; Armstrong, 2018;), in the terrain of sex work is widely spread, but

it does present variance, prostitution carries a generally more severe stigma than pornography or

commercial stripping (Weitzer, 2011). The stigma against female sex workers is attached to a

long history of patriarchal norms concerning our society. The idea that women are having sexual

intercourse as a means to earn money and not with the idea of commitment, challenges the

normally accepted roles of females (Amrstrong, 2018). It is important to note that despite the

focus of the research of stigma in sex workers if mostly on women, all sex workers experience

negative consequences of stigma, including male and transgender sex workers (Samudzi &

Mannel, 2015). Although it is argued that the current context of our society has somewhat shifted

from morally repressive to somewhat more permissive views of sexuality, there are still moral

judgments against women who freely experience their sexuality.

Fundamentally, the study looks to expand the comprehension of the singularities of the

personalities of sex workers, the results of the study are anticipated to be preliminary, as much

more research is needed in this area.

**Hypotheses**

Based on the above discussion, the hypotheses were as follows:

a.  Sex workers would present scores indicating a faster life-history strategy than our cohort sample;

b.  Sex workers would present higher scores in measures of the DT when compared to our cohort sample;

c.  Sex workers would have a higher presence of positive attitudes toward Short-Term mating and a lower presence of positive attitudes toward Long-Term mating when compared to our cohort sample; and

d.  Sex workers would have lower scores in the Agreeableness and Consciousness dimensions of the Big Five when compared to our cohort sample.

**Methods & Materials**

*Participants*

We decided to recruit participants for our Sex Worker group from a collaborator, adjunct professor Jennifer Wolfey, from the Rochester Institute of Technology, who currently privately counsels and assists prostitutes across the Rochester region as part of her routinely professional environment. The targeted participants for the study were individuals who were actively engaging in the activity of prostitution as previously defined. This group was denominated Sex Worker (SW), although we were expecting participants for the SW group to be female and male, as we had no exclusion of gender in the study in recognition of the underestimated representation of the population of male sex workers, only female sex workers completed the survey.

The survey was completed by thirty-two individuals, thirteen in the Sex Worker Group, who were all (100%) females, aged 18 to 54 (M= 29.15, SD=11.66); and eighteen in the Cohort Group, who were fourteen (77%) females, aged 19 to 56 (M= 30.77, SD=13.59). We excluded one participant from the analysis from the Cohort Group because they did not meet the requirement of being of legal age.

Incentives for participation for the SW group consisted of items tailored to their particular needs at the time, in the form of essentials for intimacy or health care (e.g. shampoo, deodorant, sanitary pads). The items that were received by the participants varied in accordance with the unique needs of the individuals who form our targeted population. We opted for this option as we had been counseled against the use of monetary compensation because of its implication in a possible trade for illegal substances abuse. We have agreed on this unique incentive strategy for the sex worker condition group to be able to appeal to participants that might have very different and particular needs.

Those recruited for the Cohort group (CG) were recruited by snowball sampling, offering extra credit opportunities in Introductory Psychology courses. Students were instructed to pass the survey to family members, or friends.

### Procedure

The questionnaire that was developed for this project is a compilation of different psychological measures that have been selected after careful consideration of the time

availability of the participants, relevance to the topic, and statistical support derived from the literature.

Respondents that were part of the category of sex workers met with adjunct professor Jennifer Wolfey who administered the survey, as we understand the risks associated with studying prostitution and the length of time that will take to develop the meaningful relationship necessary for the level of disclosure required for the study. Therefore she was the only one who was in contact with the sex workers and who conducted the interviews.

On account of concerns of legality and anonymity due to the nature of the work in which our targeted sample engages, we did not require signed informed consent nor we collected any identifiable information. Nonetheless, participants were debriefed and informed of the purpose of the study, the expected duration of the study, and the emphasized confidentiality of any personal identificators. To ensure that participation in the study was entirely voluntary and uncompelled, the survey package was given to our participants only after careful review of the consent form, securing the rights and welfare of our participants.

For the control group, the survey was completed online to assure anonymity and confidentiality. All participants were given informed consent forms and were debriefed on the purpose of the study. Participants under the age of eighteen were allowed to participate in both conditions for extra credit or resources, depending on the condition, but their data was removed before analysis.

This study was approved by the IRB of the Rochester Institute of Technology.

*Measures*

**Demographics:** Relevant to the study, we asked questions regarding gender, age, and sexual orientation.

**Age of Onset:** These questions were developed as a complementary measure of Life-History Strategy, they refer to onset of puberty, illegal substance use, and alcohol consumption. We have decided to include in this section as well as questions regarding offspring. This was addressed in the following format:

"Do you have any children? If Yes, please answer:

a) How many children do you have?

b) How old were you the first time you had a child?"

Pertinent to our targeted sample of sex workers, we thought it would be of relevance to include measurements regarding abortion. This was measured in a single item: "Have you or your partner experienced any abortions?"

**Ten-Item Personality Inventory (TIPI)** (Gosling,  Rentfrow,  & Swann, 2003): The Ten-Item Personality Inventory is an extremely short measure of the Big-Five personality dimensions, used in instances where very brief measures are needed. Although somewhat inferior to the standard measures (Big-Five Inventory or NEO Five-Factor Inventory), the TIPI has adequate levels of validity and reliability.  This measure was chosen as it was essential to include multiple instruments, and due to time constraints, a brief measure of the dimensions was vital.

**The Dark Triad of Personality (D3-Short)** (Paulhus, 2013): The SD3 is a brief measure that consists of 27 items that measure the dark triad dimensions of personality, which corresponds to

psychopathy, narcissism, and Machiavellianism. Items assess dark triad characteristics such as grandiosity, risk-taking, and manipulation in a 5 point Likert Scale.

**High-K Strategy Scale** (Giosan, 2006): The High-K strategy scale is a 26-item compromising elements of social capital, risk consideration, upward mobility and health measures in a 7 point Likert Scale.. We have decided to adjust the scale on item number twelve which originally states "If I were to face a *sudden* threat (e.i.: flood, fire), I believe I would have the ability to protect myself and my family"; because our targeted population is most likely to live in an unstable environment, sudden threats might not be easily assumed to be a flood or fire, for which we have opted to rephrase the question as follows: "If I were to face a *natural* threat (e.i.: flood, fire), I believe I would have the ability to protect myself and my family." We thought that the rephrasing of the question would avoid any confusion in regard to the essence of the question.

**The Multidimensional Sociosexuality Inventory** (Jackson & Kirkpatrick, 2007): The Multidimensional Sociosexuality Inventory is a 20-item scale inventory measuring attitudes towards casual sex and short-term mating on a 7 point Likert Scale. The first ten items measure short-term orientation and the last ten-items measure long-term mating orientation. Due to the nature of our targeted population, we have decided to exclude the last three items of the measure, as they target the number of sexual intimacy partners. The three excluded questions from the inventory are a)"During your entire life, with how many partners of the opposite sex have you had sexual intercourse?" b) "With how many partners of the opposite sex have you had sexual intercourse within the past year?" c) "With how many partners of the opposite sex have you had

sex on one and only one occasion?". We believe that as our participants engage in active

prostitution recalling this information would be problematic and not particularly accurate.

**Expected life-span:** Expected life-span was measured in a single item "If you had to guess, at

what age do you think you will die?" and it was intended to be a complementary measure of Life

History theory.

**Describe your first sexual experience:** This was the only open-ended question on the survey

and it intended to gather information about the nature of the first sexual experience to the extent

to which each participant was comfortable.

### Results

To test our several hypotheses, multiple independent samples t-test were performed.

Additionally, the assumption of homogeneity of the variances was tested and satisfied via

Levene's test.

Table 1: Questions about Onset

| Sex Workers (SW) | Cohort Group (CG) |
|---|---|
| Age of first parturition<br>Mean      20.66<br>SD      4.44 | Age of first parturition<br>Mean      27.5<br>SD      5.04 |
| Age of first alcoholic beverage<br>Mean      12.76<br>SD      1.09 | Age of first alcoholic beverage<br>Mean      15.7<br>SD      2.66 |
| Age of first alcoholic intoxication<br>Mean      13.07<br>SD      1.03 | Age of first alcoholic intoxication<br>Mean      17.37<br>SD      1.03 |
| Have you ever used illegal substances?<br>YES      13 (100%)<br>NO      0 (0%) | Have you ever used illegal substances?<br>YES      11 (61.11%)<br>NO      7 (38.8%) |
| How old were you when you first tried illegal substances?<br>Mean      12.58<br>SD      1.30 | How old were you when you first tried illegal substances?<br>Mean      18.36<br>SD      2.11 |

Consistent with our discussion on Life History Theory, we observed a significantly earlier age of parturition in sex workers than in Cohort Sample, sex workers tended to show a higher number of offspring as well (these results were excluded from results section because our sample was too small to be significant), both indicators of a faster strategy (van Leeuwen & Mace, 2016; Quinlan, 2003; Figueredo et al. 2005). The role of early alcohol consumption has not been largely studied in relation to the dark triads or life history theory, but the literature has suggested that adolescent alcohol and drug consumption are characteristic of the prostitution background (Nadon, Koverola, Schludermann, 1998), participants from the sex worker group had significantly earlier ages of first alcoholic beverages and first intoxication, even further evidence to support those claims is that the totality of our sex worker sample has been involved with illegal substance consumption, but only 61.11% of our cohort sample has ever consumed illegal substances. Participants in the cohort group who did consume drugs, had a significantly later age of first interactions with illegal substances, averaging at eighteen years old, a legal adult. In contrast, participants from the sex worker group had their first interaction with illicit drugs at early adolescence, averaging twelve years old.

Table 2: Independent Samples Test

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|---|---|---|---|---|---|---|---|
| | Sex Workers | | Cohort | | | | |
| | Mean | SD | Mean | SD | t | df | Sig. (2-tailed) |
| Agreeableness | 3.88 | 0.68 | 2.97 | 1.091 | 2.66 | 29 | 0.013 |
| Conscientiousness | 4.42 | 0.79 | 2.91 | 0.87 | 4.91 | 29 | <0.001 |
| Openness | 4.76 | 0.88 | 3.083 | 0.89 | 5.21 | 29 | <0.001 |
| Machiavellianism | 4.61 | 0.29 | 2.78 | 0.64 | 10.72 | 24.95 | <0.001 |
| High - K | 52.84 | 13.21 | 46.44 | 12.21 | 2.73 | 17.53 | 0.014 |
| Long-Term Mating | 4.84 | 0.82 | 2.99 | 0.28 | 7.79 | 14.06 | <0.001 |

On Table 2, the results that were statistically significant are presented and summarized. Unfortunately, due to circumstances that we will discuss in more detail during the discussion portion of the paper, they are mostly contradictory from our original hypotheses.

*Discussion*

The responses from the Cohort group were collected beginning on April 6th, 2020; the collection period lasted about two weeks. Unfortunately, at this point in time, a global pandemic had begun to take place and our Cohort sample was exposed to prolonged and unwilling isolation. COVID-19 is a new disease, which was unknown before the outbreak began in Wuhan China (WHO, 2020), this virus has caused a strain all around the globe, with continuously increasing active cases and death toll globally (Phelan, Katz & Gostin, 2020).

Due to the high infectivity of the novel coronavirus, a mass quarantine has been implemented in almost all territories in the United States. A quarantine is the separation of people and implementation of regulations of movement (Brooks et al., 2020), isolation as a result of a response to an infectious illness is thought to impact mental health stability, but to which extent is still fully unexplored, but so far, the literature suggests that a quarantine situation increases feelings of anxiety and anger (Jeong et al., 2016), as well as acute stress disorder (Brooks et al., 2020).

We believe that COVID-19 might have heavily impacted our data in regards to participants in the cohort group. We have opted to include the norms of each measure to further

support our argument, as it is normally expected that the cohort will be somewhat similar to the norms.

Figure 1: Life-History Strategy



**High-K Life Strategy**
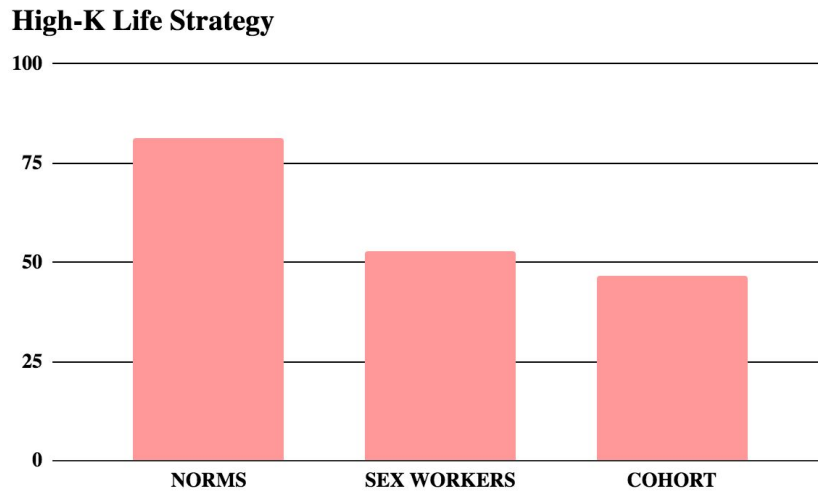
Although the group of sex workers scored significantly lower in the High-K Scale, meaning that they had faster life history strategy than the norms, they did not have a faster life-history strategy than the cohort. Some items measured that had overwhelming low scores across participants are in the cohort group are: a) The activities I engage in, both at work and elsewhere, are safe (not life threatening; b) I live in a place where I can easily go outside and enjoy nature; and c)  The neighborhood where I live is safe.

The results regarding this dimension seem to be affected by COVID-19, as a pandemic that has generated stress and panic among the community, it is unsurprising to see that participants give such responses to the statements.

Figure 2: The Dark Triad

**The Dark Triad**
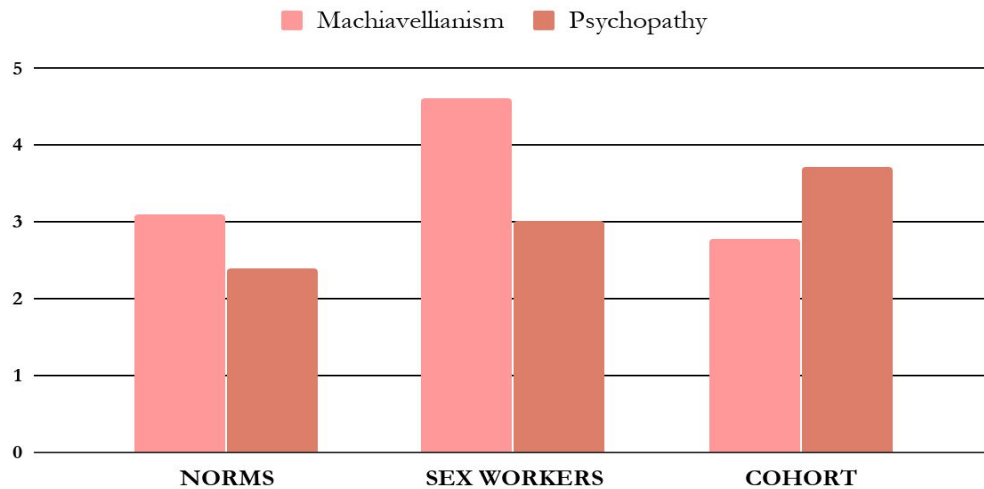


From the Dark Triad measures, we will only be addressing the dimensions that were significant. Sex Workers scored significantly higher in Machiavellianism than our Cohort. This particular trait of personality is characterized by impulsivity, manipulation, and cynicism. Although we expected to see higher scores across all dimensions of the dark triad in the sex worker group, narcissism was non-significant, and the psychopathy dimension shed some interesting results, that once again, might be influenced by COVID-19.

The difference between the norms and sex workers is not statistically significant in the psychopathy dimension, but differences between the norms and the cohort are very strong. This could be because unwilling restraint of movement is likely to corrode community confidence, provoke feelings of anger, and resentment toward government officials (Jeong et al., 2016). Some of the items in this scale that were overwhelmingly high in our cohort group were: a) People often say I'm out of control; b) Payback needs to be quick and nasty, and c) I like to get revenge on authorities.

Figure 3: Mating Attitudes



**Multidimensional Sociosexuality Inventory**
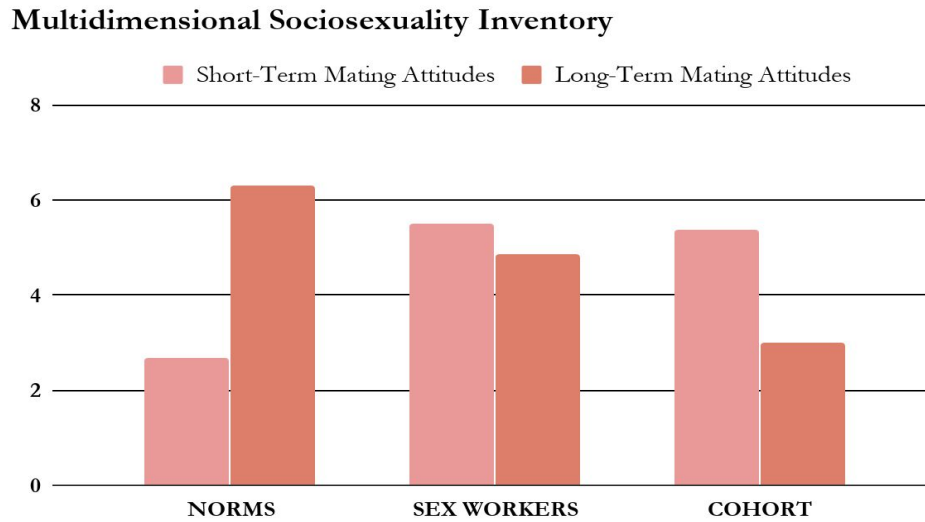
Contrary to our initial prediction, Sex Workers exhibited about the same willingness and desire for casual sex than our Cohort group. This is significantly higher than what was expected from the cohort based on the norms. We believe that this result might be influenced by COVID-19, as expectations of a shorter life or a risky environment could mean that individuals become more open to casual sex. Some of the items measured in this scale were: a) I can easily imagine myself being comfortable and enjoying "casual" sex with different partners and b) Sex without love is OK.

Differences in Long-Term Mating attitudes suggest that Sex Workers have a higher desire to form long-lasting and meaningful relationships than our Cohort sample, and a non-significantly different from the norms. These results indicate that sex workers have desires and expectations to form long-lasting committed relationships despite being involved in prostitution. This is supported by some of the responses from the question: "Describe your first

sexual experience" by some sex workers; where they shared that they have had life-long partners with who they had sexual intercourse for the first time, children, and continued to be together.

Figure 4: The Big Five
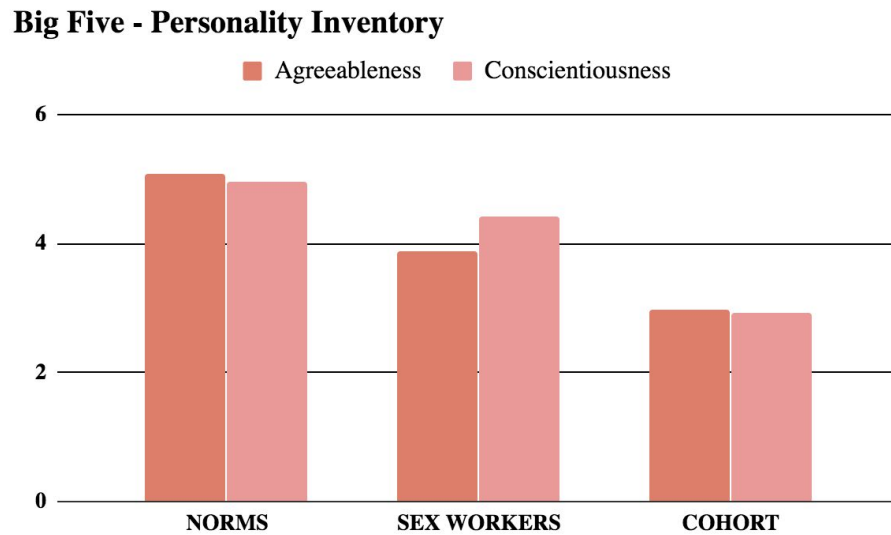


We only discuss results that were statistically significant in this section. The dimensions of neuroticism, openness to experience, and extroversion were non-significant. We expected lower levels of Agreeableness and Conscientiousness in our Sex Worker Sample, as it is a trait commonly associated with the dark triads and overall criminal behavior in the literature, but the results were non-consistent with our hypothesis, as our cohort as in discordance with the norms.

Conscientiousness is a trait that is characterized as a tendency to act in a socially acceptable way, and it facilitates goal-directed behavior, as such, results might have been affected by isolation. The agreeableness dimension is concerned with one's orientation towards others, it is a good predictor of how well an individual might interact with others. Sex workers were not significantly different from the norms, suggesting that they might have good

interpersonal skills, this would not be unanticipated, as prostitution is a profession that requires intimate contact.

### *Limitations*

It is vital that we also acknowledge the main challenges that arise when attempting to conduct research with participants who are part of the sexual service industry. First, the magnitude of the population remains unknown, lessening the success of traditional methods of sampling (Shaver, 2005). Our study counted with the participation of a key informant, however, this means that our data most likely reflected interactions with participants who are actively seeking help. Second, prostitution remains illegal in most of the U.S. territories. Our study was be aimed at sex workers who operate in the Greater Rochester area, the New York State Law: Penal Law, Article 230, defines the crime of prostitution as: " A person is guilty of prostitution when such person engages or agrees or offers to engage in sexual conduct with another person in return for a fee", the crime is classified as a B misdemeanor and is punishable by jail time and/or a fine. Due to fears of criminal reprehension, it is often presumed that many individuals will refuse to participate or will give unreliable answers to protect their privacy. These issues may arise when the investigation involves concerns regarding confidentiality. (Shaver, 2005). We attempt to lessen this concern by opting to avoid collecting any identifiable information from participants.

Besides the enhanced problems due to the targeted population, results were based on self-report measures, which sometimes can be influenced by self-presentation bias, emotionality at the time of taking the survey, and without questions, a pandemic. Although ensuring

anonymity improves the veracity of participant's responses, the heavy influence of COVID-19 in

the cohort group severely limits the possibility of generalization of results.

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