Sociodemographic Factors Associated with Emotional Distress, Transactional Sex and Psychoactive Substance Use during the First Wave of the COVID-19 Pandemic

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Abstract: The aim of this study was to identify the sociodemographic factors associated with emotional distress and determine if the quality of family relationships and the perception of social isolation can protect those who transacted sex or used psychoactive substances from emotional distress during the COVID-19 pandemic. Data for 426 people who transacted sex and 630 persons who used psychoactive drugs during the COVID-19 pandemic were extracted from a database of participants recruited from 152 countries. The extracted data were the dependent (emotional distress), independent (age, sex, education status, employment status, HIV status, the perception of social isolation, and the quality of family relationships), and confounding (country income level) variables. Multivariable logistic regression analyses were conducted to determine the associations between the dependent and independent variables after adjusting for confounders. Students who transacted sex (AOR:2.800) and who used psychoactive substances (AOR:2.270) had significantly higher odds of emotional distress. Participants who transacted sex, lived with HIV (AOR:2.582), or had the same/better quality of family relationships (AOR:1.829) had significantly higher odds of emotional distress. The participants who used psychoactive substances, had tertiary education (AOR:1.979), were retired (AOR:2.772), were unemployed (AOR:2.263), or felt socially isolated (AOR:2.069) had significantly higher odds of emotional distress. Being a student was the only sociodemographic risk indicator common to both populations. The risk indicators and protective factors for emotional distress differed for both populations despite both being at high risk for emotional distress.

Keywords: social isolation; sociodemographic; emotional distress; transactional sex; psychoactive; substances; COVID-19; pandemic

1. Introduction

Transactional sex is a term used to describe consensual sexual activities with the implicit or explicit understanding of receiving access to material or non-material benefits [1]. It is also referred to as the commodification of self or survival sex [2,3]. Transactional sex is likely to have increased during the COVID-19 pandemic because of the economic instability, food and housing insecurity, and poor humanitarian assistance associated with pandemics [4–6]. During past crises, such as the Ebola epidemic in West Africa, there were

increases in transactional sex, mainly for survival [7]. People who engage in transactional sex are already vulnerable to economic instability, food, and housing insecurity, and these conditions were exacerbated during the pandemic [8]. For example, women and girls living with and at high risk for HIV who engaged in transactional sex in Nigeria during the pandemic had more than four times higher odds of facing housing insecurity and more than two times higher odds of facing food insecurity and economic instability when compared with peers who did not transact sex [5]. Similarly, women living with HIV who transacted sex during the pandemic had higher odds of having limited access to HIV, tuberculosis, and sexual and reproductive health services when compared to women who did not transact sex. Financial challenges experienced during the pandemic are an often cited reason for engaging in transactional sex [6]. The burden caused by poor access to healthcare and financial challenges increases the likelihood that those who transacted sex during the COVID-19 pandemic will experience emotional distress to a greater degree [9].

Millions of deaths worldwide were attributed to COVID-19, and many individuals experienced the emotional burden of coping with the death of a close friend or family member due to COVID-19. These cumulative stressors experienced in the context of the pandemic can induce heightened stress for vulnerable populations, particularly people who transact sex [10]. Studies have reported a positive association between emotional distress and the use of psychoactive substances [11,12]. Those who routinely misused psychoactive substances were more likely to experience emotional distress during the COVID-19 pandemic. People with a history of drug use have an increased risk of contracting COVID-19, hospitalisation, and death from COVID-19 [10]. Many may also have faced challenges with access to addiction services and rehabilitation programmes [13,14]. The prolonged use of psychoactive substances results in neuronal adaptations in the stress and reward pathways of the brain and induces a flare-up of the neuroendocrine response, resulting in stress reactivity. Stress reactivity can exacerbate cravings for psychoactive substances when faced with stressful situations such as a pandemic [15,16].

However, stress does not always result in the use of psychoactive substances. In the face of stress, some individuals are able to tap into their sense of mastery over the stress-inducing situation and engage in proadaptive responses [11]. Differences in the way people adapt to stressors have been described by age, gender, occupation, and educational status [17–19]. COVID-19 is also a traumatic event that may trigger post-traumatic stress disorder [20]. However, little is currently understood about the sociodemographic factors that might increase the risk of emotional distress and the use of maladaptive coping mechanisms among people who used psychoactive substances and transacted sex during the COVID-19 pandemic.

The present study was based on the cognitive models of psychopathology that assume that cognitive phenomena mediate the relationships between events and experiences and their subsequent emotional responses [20]. Cognitive models recognise that an individual's response to an external event is based on information processing and cognitive appraisal [21]. For the purposes of this study, the external event is the COVID-19 pandemic, and the individual's response is expressed as emotional distress. Sociodemographic variables, including age [22], sex [23], sexual identity [24], level of education [25], employment status [26], and HIV status [27], may affect information and cognitive appraisal processes and, thus, moderate the response to the external stimulus. These sociodemographic factors can bias the negative automation of thoughts and biases in attention, interpretation, and memory that informs the cognition associated with emotional distress [28].

The associations between age, sex, sexual identity, level of education, employment status, HIV status, and emotional distress were examined in two populations (those who transacted sex and those who used psychoactive substances) highly vulnerable to emotional distress during the COVID-19 pandemic. We also assessed for the associations between the quality of family relationships and feelings of social isolation with emotional distress in the studied population, as these factors are often seen as protective [29,30]. Socially vulnerable populations have a high risk for social isolation and poor quality of family

relationships [31,32]. It was hypothesised that age, sex at birth, sexual identity, level of education, employment status, HIV positivity status, the quality of family relationships, and feelings of social isolation would be associated with emotional distress among people who transacted sex and people who used psychoactive substances during the first wave of the COVID-19 pandemic.

2. Materials and Methods

Ethical approval was obtained for the study from the Human Research Ethics Committee at the Institute of Public Health of the Obafemi Awolowo University Ile-Ife, Nigeria (HREC No: IPHOAU/12/1557). Additional ethical approval was obtained from India (D-1791-uz and D-1790-uz), Saudi Arabia (CODJU-2006F), Brazil (CAAE N° 38423820.2.0000.0010), and the United Kingdom (13283/10570). Study participants provided consent before participating in the online survey.

This was a secondary analysis of the data extracted from a large, cross-sectional, multi-country study that collected data from 152 countries between July and December 2020. The primary study collected data from 21,206 adults using a questionnaire validated for global use [33] to determine the impact of COVID-19 on the mental health and wellness of adults. The overall content validity index of the questionnaire was 0.83.

Sample Size

Data from 430 participants who indicated they had transacted sex and 683 participants who had used psychoactive substances during the first wave of the COVID-19 pandemic were extracted for this analysis. The sample was considered statistically adequate, as there was a minimum of 10 participants with complete responses for each dependent variable available for this study. This enabled us to perform regression analyses with a minimum probability level of 0.05 [34,35].

Participant Recruitment

Study participants were recruited through respondent-driven sampling. The initial participants reached by 45 members of the MEHEWE Study Group (www.mehewe.org, accessed on 27 January 2023) were asked to share the survey link with their contacts around the world. The survey link was also posted on social media groups (Facebook, Twitter, and Instagram), network email lists, and WhatsApp groups. The respondents were encouraged to share the link further with their networks. They had to be 18 years and above, understand the survey language (the survey was conducted in English, French, Arabic, Portuguese, and Spanish), and be able to access the survey using an electronic device and an internet connection.

The survey was preceded by a brief introduction explaining the purpose of the study, informing the participants of their voluntary participation, and assuring the confidentiality of their data. Before proceeding, the participants were required to check a box that indicated consent. The questionnaire took an average of 11 min to complete. Multiple best-practice procedures were performed to increase the data quality of the survey, such as not including the data of those with incomplete responses and checking to identify and remove any survey responses completed below seven minutes—the lower limit of the time range to answer the questionnaire during the pilot phase [36,37]. Each participant could only complete a single questionnaire through IP address restrictions, though they could edit their answers freely until they chose to submit them. The full details of the methodology can be found elsewhere [33,38,39].

Selection of Respondents

All the participants who indicated they had transacted sex or used psychoactive substances (used illegal drugs, used prescription drugs without prescription, and injected drugs using needles) during the first wave of the pandemic were initially identified. The participants were further categorised into two groups: those who identified as having emotional distress and those who did not. For this cohort of participants, data were extracted on their self-reported HIV status and sociodemographic data (age, sex at birth,

level of education, and employment status). Data were also extracted on feelings of isolation and the quality of family relationships.

Dependent Variables

Emotional distress: The respondents were asked to indicate if they had experienced any of the ten listed emotions during the pandemic. This list included depression, anxiety, frustration or boredom, loneliness, anger, grief, or feeling of loss. The respondents were required to tick a box against any emotions they experienced during the pandemic. The participants were categorised as emotionally distressed if any of the boxes had been ticked. The responses were dichotomised into the presence (yes) or absence (no) of emotional distress. The questions were adapted from the Pandemic Stress Index [40], and the content validity index for each section of the Pandemic Stress Index was 0.90. The test–retest reliability score ranged from 0.09 to 0.91 [33].

Independent Variables

Living with HIV: The participants indicated if their HIV status was negative, positive, unknown, or if they were unwilling to declare it. Data extraction was limited to those participants who identified as having either HIV-positive or HIV-negative status.

Social isolation: Social isolation was measured by asking each respondent how the pandemic affected their sense of isolation compared with that before the COVID-19 pandemic. The possible responses included feeling the same, less socially isolated, or more socially isolated. The responses were dichotomised into same/less socially isolated (no) vs. more socially isolated (yes). The content validity index of this section of the questionnaire was 0.90. The test–retest reliability score ranged from 0.24 to 0.41 [33].

Quality of family relationships: This was measured by asking the participants how the quality of their relationship with family members had changed during the pandemic. Family members were defined as parents, siblings, spouses, partners, children, and other family members. Possible responses included becoming a lot worse, a little worse, remaining the same, becoming a little better, or a lot better. The responses on family relationships were dichotomised into improved/remained unchanged (remained the same, became a little better, or became a lot better) vs. worsened (became a lot worse and became a little worse). The content validity index of the section of the questionnaire that contained these questions was 0.90 [33].

Sociodemographic variables: The sociodemographic variables were age in years, sex at birth (male, female), the highest level of education attained (none, primary, secondary, or college/university), and employment status (employed, unemployed, student, or retiree).

Confounding Variables

Country income level was obtained from the publicly available data of the World Bank Data Bank [41]. Differences in the countries' income levels affect the formulation of policies and the strength of healthcare systems to address the COVID-19 pandemic. Based on income level, countries were classified into low-income countries (LICs) with a gross national income (GNI) per capita USD $\leq$ 1035 in 2019, lower-middle-income countries (LMICs) with GNI between USD 1036 and USD 4045, upper-middle-income countries (UMICs) with GNI between USD 4046 and USD 12,535, and high-income countries (HICs) with a GNI of USD $\geq$ 12,536.

Statistical Analyses

The raw data were downloaded, cleaned, and imported to SPSS version 23.0 (IBM Corp., Armonk, NY, USA) for analysis. The characteristics of the study participants were described using mean $\pm$ standard deviation for continuous variables and frequency and percentage for categorical variables. Where appropriate, chi-square tests and *t*-tests were used to assess the associations between the dependent, independent, and confounding variables. Inferential analyses were conducted using multivariate logistic regression analysis and adjusted for confounding variables. Adjusted odds ratios (AoR) for the multivariate logistic regression model and 95% confidence intervals (CIs) were calculated. Statistical significance was set at <0.05.

3. Results

Table 1 shows that among the 426 persons who transacted sex, 231 (54.2%) felt emotionally distressed. Additionally, 102 (23.9%) were living with HIV, 247 (58.0%) were male, 289 (67.8%) had tertiary education, 71 (16.5%) were unemployed, 123 (28.9%) were sexual minority individuals, 294 (69.0%) felt socially isolated during the first wave of the COVID-19 pandemic, and 154 (36.2%) had worsened quality of family relationships during the pandemic.

Table 1. Multivariate logistic regression analysis to determine factors associated with emotional distress for people who transacted sex during the first wave of the COVID-19 pandemic (N = 426).

Variables	Total	Emotional Distress (n%)		AOR; 95% CI; p Value
	N = 426	Yes	No	
	n (%)	231 (54.2)	195 (45.8)	
Economic region				
LIC	5 (1.2)	3 (60.0)	2 (40.0)	1.599; 0.235–10.896; p = 0.632
LMIC	233 (54.7)	125 (53.6)	108 (46.4)	0.834; 0.512–1.358; p = 465
UMIC	47 (11.0)	31 (66.0)	16 (34.0)	1.539; 0.730–3.243; p = 0.257
HIC	141 (33.1)	72 (51.1)	69 (48.9)	1.000
Age	32.1 (9.5)	31.7 (9.4)	32.6 (9.6)	1.000; 0.977–1.023; p = 0.983
Sex at birth				
Male	247 (58.0)	127 (51.4)	120 (48.6)	1.000
Female	179 (42.0)	104 (58.1)	75 (41.9)	1.219; 0.799–1.861; p = 0.359
Level of education				
No formal education	15 (3.5)	7 (46.7)	8 (53.3)	0.721; 0.234–2.222; p = 0.569
Primary	24 (5.6)	17 (70.8)	7 (29.2)	2.242; 0.845–5.951; p = 0.105
Secondary	98 (23.0)	56 (57.1)	42 (42.9)	0.447; 0.035–5.647; p = 0.533
Tertiary	289 (67.8)	151 (52.2)	138 (47.8)	1.000
Employment status				
Retired	3 (0.7)	1 (33.3)	2 (66.7)	0.447; 0.035–5.647; p = 0.533
Student	48 (11.3)	36 (75.0)	12 (25.0)	2.800; 1.278–6.138; p = 0.010
Employed	305 (71.6)	151 (49.5)	154 (50.5)	1.000
Unemployed	70 (16.4)	43 (61.4)	27 (38.6)	1.356; 0.736–2.501; p = 0.329
Sexual identity				
Heterosexuals	303 (71.1)	158 (52.1)	145 (47.9)	0.946; 0.594–1.506; p = 0.816
Sexual minority individuals	123 (28.9)	73 (59.3)	50 (40.7)	1.000
Living with HIV				
Yes	102 (23.9)	71 (69.6)	31 (30.4)	2.582; 1.491–4.472; p = 0.001
No	324 (76.1)	160 (49.4)	164 (50.6)	1.000
Socially isolated				
Yes	294 (69.0)	167 (56.8)	127 (43.2)	1.393; 0.901–2.153; p = 0.136
No	132 (31.0)	64 (48.5)	68 (51.5)	1.000
Quality of relationship with family				
Same/Better	272 (63.8)	161 (59.2)	111 (40.8)	1.829; 1.186–2.821; p = 0.006
Worse	154 (36.2)	70 (45.5)	84 (54.5)	1.000

The factors associated with emotional distress among people who transacted sex during the COVID-19 pandemic were employment status, HIV status, and the quality of family relationships. Students who transacted sex during the pandemic had higher odds of emotional distress when compared with those who were unemployed (AOR2.800; 95% CI: 1.278–6.138; p = 0.010). In addition, those living with HIV also had higher odds of emotional distress than those who were not living with HIV (AOR:2.582; 95% CI: 1.491–4.472; p = 0.001). Additionally, those with no changes or better quality of family relationships had higher odds of emotional distress when compared with individuals who had worsened family relationships (AOR:1.829; 95% CI: 1.186–2.821; p = 0.006).

Table 2 shows that among the 630 respondents who used psychoactive substances during the COVID-19 pandemic, 462 (66.5%) were emotionally distressed. Additionally, 62 (9.1%) were living with HIV, 331 (48.7%) were male, 498 (73.2%) had tertiary education, 80 (11.8%) were unemployed, 172 (25.3%) were sexual minority individuals, 451 (66.3%) felt socially isolated during the first wave of the COVID-19 pandemic, and 191 (28.1%) had worsened quality of family relationships during the pandemic.

Table 2. Multivariate logistic regression analysis to determine factors associated with emotional distress for people who used psychoactive drugs during the first wave of the COVID-19 pandemic (N = 680).

Variables	Total	Emotional Distress n (%)		AOR; 95% CI; *p* Value
	N = 680	Yes	No	
	n (%)	452 (66.5)	228 (33.5)	
Economic region				
LIC	10 (1.5)	3 (30.0)	7 (70.0)	0.243; 0.056–1.050; *p* = 0.058
LMIC	348 (51.2)	219 (62.9)	129 (37.1)	0.717; 0.477–1.077; *p* = 0.109
UMIC	131 (19.3)	100 (76.3)	31 (23.7)	1.184; 0.680–2.063; *p* = 0.550
HIC	191 (28.1)	130 (68.1)	61 (31.9)	1.000
Age	35.7 (13.6)	35.3 (14.3)	36.6 (12.1)	0.991; 0.976–1.006; *p* = 0.236
Sex at birth				
Male	331 (48.7)	206 (62.2)	125 (37.8)	1.000
Female	349 (51.3)	246 (70.5)	103 (29.5)	1.085; 0.767–1.534; *p* = 0.648
Level of education				
No formal education	4 (0.6)	2 (50.0)	2 (50.0)	0.590; 0.074–4.691; *p* = 0.618
Primary	34 (5.0)	20 (58.8)	14 (41.2)	0.671; 0.305–1.478; *p* = 0.322
Secondary	144 (21.2)	118 (81.9)	26 (18.1)	1.979; 1.190–3.289; *p* = 0.008
College/university	498 (73.2)	312 (62.7)	186 (37.3)	1.000
Employment status				
Retired	38 (5.6)	31 (81.6)	7 (18.4)	2.772; 1.052–7.302; *p* = 0.039
Student	107 (15.7)	88 (82.2)	19 (17.8)	2.270; 1.223–4.212; *p* = 0.009
Employed	455 (66.9)	271 (59.6)	184 (40.4)	1.000
Unemployed	80 (11.8)	62 (77.5)	18 (22.5)	2.263; 1.258–4.071; *p* = 0.006
Sexual identity				
Heterosexuals	508 (74.7)	330 (65.0)	178 (35.0)	0.816; 0.529–1.259; *p* = 0.359
Sexual minority individuals	172 (25.3)	122 (70.9)	50 (29.1)	1.000
Living with HIV				
Yes	62 (9.1)	48 (77.4)	14 (22.6)	1.865; 0.937–3.713; *p* = 0.076
No	618 (90.9)	404 (65.4)	214 (34.6)	1.000
Socially isolated				
Yes	451 (66.3)	324 (71.8)	127 (28.2)	2.069; 1.450–2.953; *p* < 0.001
No	229 (33.7)	128 (55.9)	101 (44.1)	1.000
Quality of relationship with family				
Same/Better	489 (71.9)	333 (68.1)	156 (31.9)	1.423; 0.973–2.081; *p* = 0.069
Worse	191 (28.1)	119 (62.3)	72 (37.7)	1.000

The factors significantly associated with emotional distress among people who used psychoactive substances during the COVID-19 pandemic were educational status, employment status, and the perception of social isolation. The participants who used psychoactive substances during the pandemic and who had secondary-level education had higher odds of emotional distress than those with tertiary education (AOR:1.979; 95% CI: 1.190–3.289; *p* = 0.008). Additionally, those who were retired (AOR:2.772; 95% CI: 1.052–7.302; *p* = 0.039), students (AOR:2.270; 95% CI: 1.223–4.212; *p* = 0.009), or unemployed (AOR:2.263; 95% CI: 1.258–4.071; *p* = 0.006) had higher odds of emotional distress than those employed. Finally, those who felt socially isolated had higher odds of emotional distress (AOR:2.069; 95% CI: 1.450–2.953; *p* < 0.001).

4. Discussion

Our findings indicate that relationships exist between sociodemographic factors, quality of family relationships, feelings of social isolation, and emotional distress among populations at high risk of emotional distress during the COVID-19 pandemic. The common risk factor for emotional distress for people who transacted sex and people who used psychoactive substances during the pandemic was being a student; that is, people who transacted sex and those who used psychoactive substances and were also students were found to have significantly higher odds of emotional distress in this study. Living with HIV and having the same or better quality of family relationships during the pandemic increased the odds of emotional distress among people who transacted sex. Being retired, unemployed, and feeling socially isolated significantly increased the odds of emotional distress among people who used psychoactive substances. These results partially support the hypotheses of our study.

One of the strengths of this study is the multi-country data used in the analyses. However, the findings may not be generalisable for a number of reasons. First, this was a convenient sample that excluded individuals without access to the internet and who could not read the language in which the survey tool was administered. Study participants were skewed to those with tertiary education. However, the data could not have been generated using probability sampling techniques during the COVID-19 pandemic due to the restrictions placed on movements [42]. The cross-sectional study design also limits the ability to make cause–inference conclusions from the study results. In addition, the questions on emotional distress were measured using single-item questions. Single-item questions for the measurement of emotional distress have moderate levels of sensitivity, specificity, positive predictive values, and high negative predictive values [43–45]. This has implications for under-reporting emotional stress in this study. The use of validated instruments will support the objective evaluation of emotional distress. Despite these limitations, the study provides information that helps generate hypotheses that can be tested in future studies. It also provides information that can inform the design of population-specific interventions during the COVID-19 pandemic or similar pandemics with similar profiles to the COVID-19 pandemic.

The results do suggest that students with macro-socially vulnerable status, and in this case, those who transact sex or use psychoactive substances, had an increased risk for emotional distress during the COVID-19 pandemic. Prior studies indicated that many students experienced mental health challenges and psychological stress during the COVID-19 pandemic, for multiple reasons ranging from economic stress to academic delays and high internet use associated with poor socialising behaviours [46–49]. The study findings suggest that the psychopathological processes for emotional distress during the COVID-19 pandemic may not differ between subtypes of students based on their macro-social vulnerability status. The processing may, however, differ by other social contexts of the lives of macro-socially vulnerable populations.

For example, we observed that HIV-positive status was associated with emotional distress for people who transact sex but not for people who inject drugs. This observation may be due to concerns about the risk of transmitting HIV infection, especially at a time when access to antiretroviral drugs was disrupted for those living with HIV [50,51], and access to condoms was also a challenge [52]. Yet, despite these disruptions, transactional or survival sex still continued. Retirees and those unemployed who used psychoactive substances may have been more concerned about access to economic resources that will enable them to continue accessing safe psychoactive substances. The study findings suggest that the response strategies for the prevention and/or management of emotional distress for those who transact sex may differ from those who use psychoactive substances, though they are both macro-socially vulnerable to stigma, discrimination, and HIV infection [53,54]. Further studies may help better understand these factors that trigger emotional stress for different populations during crisis periods to facilitate the development of robust responses and interventions.

The findings of this study also suggest that addressing concerns about social isolation is important. Social bonds are a profound component of substance use, and everyday survival for some people who use psychoactive substances depends on the maintenance of social networks for different forms of care, intimacy, and relatedness [55]. Isolation results in a heightened risk of withdrawal, as procuring substances becomes much more challenging [56], the risk for overdose is increased [57], and other risks associated with homelessness are also increased [58,59]. The high prevalence of homelessness among people who use psychoactive drugs [60] may also induce concerns about family relationships.

Emotional distress may have been higher for people who transacted sex and had the same/better family relationships. This observed phenomenon seems paradoxical and is not replicated in the literature. During the pandemic, increased instances of transactional sex may result from a number of reasons including wage loss and food insecurity [8,61]. We, however, found that people who transacted sex and reported stable and improved family relationships had a higher risk for emotional distress. This finding needs to be explored further.

5. Conclusions

The study findings indicate that there is a complex relationship between vulnerability status, the risk for emotional stress, and stress-protective factors. Being a student was a sociodemographic factor associated with emotional distress among people who transacted sex and used psychoactive substances during the recent pandemic. The possible risk and protective sociodemographic factors associated with emotional distress differed for the two populations, despite the populations both being vulnerable to emotional distress. The social context appears to influence cognitive processing for stimuli associated with emotional distress, and thus, programmes to ameliorate emotional stress associated with COVID-19 should be designed specifically for each population to adequately address the needs of affected populations. Conducting a qualitative study to understand the study findings will also be of value for future studies.

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