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RESEARCH ARTICLE

Perceived Stress and Association with Sociodemographic, Interpersonal Relationship and COVID-19 Lockdown Related Stress in South Africa

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Abstract:

Background:

COVID-19 pandemic was declared a global public health emergency in March 2020. South Africa, like many countries, was not spared from this pandemic. In March 2020, the president announced a nationwide lockdown with social restrictions aimed to curb the spread of the virus. Such lockdown restrictions disrupted the normal day to day life for South Africans, leading to personal stress.

Objective:

The current study aimed to explore perceived stress and lockdown related stress among South African adults during the first wave of COVID 19.

Methods:

This study was cross-sectional in nature, using a sample of 203 adult males and females who were selected using a convenience sampling method on online social media platforms such as WhatsApp and Facebook. Participants completed an online survey that assessed socio-demographic information, perceived stress and lockdown related stress.

Results and Discussion:

A significant statical difference between males and females regarding their experience of lockdown related stress $t(281) = 1.35, p < .004$ was found. Relationship status was also significant for lockdown related stress $t(281) = -2.02, p < .001$ and perceived stress $t(281) = -.08, p < .000$. No significant statistical difference between young and older adults in their experience of lockdown related stress and perceived stress was found.

Conclusion:

Male participants reported more lockdown related stress, while female participants reported more perceived stress. There were no age differences in lockdown related stress and perceived stress. People without intimate relationships reported more lockdown related stress and perceived stress than people with intimate relationships.

Keywords: : COVID-19, Lockdown related stress, Perceived stress, Relationship status, Sociodemographic, Public health.

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1. INTRODUCTION

The COVID-19 pandemic has led to lockdown restrictions imposed in South Africa. Lockdown restrictions mean there is a limited social and economic movement [1], as these restrictions are meant to maneuver and minimise the spread of

COVID-19 [2]. Due to protracted periods of lockdown, COVID-19 created an opportunity for vulnerabilities for certain populations, such as women and children has been exacerbated. For example, high levels of intimate partner violence and child abuse were reported during the COVID-19 lockdown. A study conducted in South Africa [3] reported that during the first 7 days of lockdown, there were 87000 reported gender-based violence complaints nationwide. Women and children were further isolated from the outside world and

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support systems for a long period of time, which made it easier to be subjected to abuse and control [4]. COVID-19 has worsened gender inequality in many countries in relation to economic stability [5]. There had been reports of increased job losses that further add to the existing burden of unemployment in the country. South Africa has 40% decline in employment among working-age individuals. The economic losses affected mostly women and the choice of jobs they occupied. Almost two-thirds of all job losses between February and April were lost by women [5]. For example, in South Africa in 2020, women recorded a 32,3% unemployment rate, compared to men in the third quarter of the year [6]. Limited access to family and friends and opportunities for social leisure were other consequences of the lockdown. Individuals were forced to remain indoors, a major disruption to their daily routine and sense of autonomy. For many isolations also meant not having access to the social support network that offer buffers against stress and anxiety.

The mental health of many people was affected by the lockdown restrictions [1]. Nearly 45% of South Africans were fearful during the hard lockdown period, while 29% experienced profound loneliness and 33% were depressed [7]. The high incidence of these mental health conditions might have long-term consequences for the mental health treatment system. The lockdown restrictions and ensuing social isolation perpetuated existing troubling issues such as gender-based violence and substance abuse, which can lead to mental health problems [8]. Due to the limited human-to-human contact resulting from isolation, people were more likely to experience stress, anxiety, and depressive symptoms [9]. Notably, people who reported mental health challenges, on the other hand, were unable to seek out assistance owing to the movement constraints and risks associated with physical contact and in-person consultations [10]. These mental health issues may potentially last longer, thus putting a strain on an already under-resourced mental health system in Africa and South Africa.

Younger people seem to have to bear the brunt of the negative impact of the lockdown, social isolation, and quarantine [11]. According to the World Health Organisation [12], older adults face increased risks of acute diseases and death because of COVID-19, suggesting that older people are less stressed and affected by the psychological impacts of quarantine and social isolation, while younger adults display high-stress levels. Researchers argue that stress decreases with age, and generally, older adults report poorer perceived health although they have lower stress level and higher well-being than young adults [11]. However, self-reported stress levels increase from 20 to 40 years and decrease to the lowest levels in the 60s [13]. For younger people, unlike older individuals, the frustrations and anxieties over an uncertain future due to COVID-19 can be extremely stressful. For example, a study found high levels of stress among young people [14]. The study showed that concerns for young people were mostly related to their ability to concentrate at home and whether they will be able to catch up with their studies and ultimately graduate.

Evidence from countries such as China and the United

States suggests that COVID-19 has resulted in more stress, anxiety, and depression among women than men. For example, one study in China [15] found that 56% of females and 43% of males reported stress. Similar findings [16] concluded that females are at greater risk for psychological problems while males are more likely to be resilient to stress.

The current study investigated the correlation between perceived stress, sociodemographic characteristics, and relationship status in a population-based online survey during the COVID-19 lockdown in South Africa.

2. MATERIALS AND METHODS

2.1. Study Design

A prospective population-based repeated cross-sectional online survey design was used for the study.

2.2. Study Setting

The study was conducted online among the general population of South Africa during the first hard lockdown period between March 2020 and June 2020. The survey was circulated over several social media platforms to have a wide reach across the nine provinces. Individuals with access to the internet and digital devices could participate.

2.3. Study population and Sampling Strategy

A total of three hundred and twenty-six participants (93 males, 233 females) in the age range of 18 and older from across the nine different provinces in South Africa were invited to participate voluntarily in an online survey. Through a snowball sampling strategy, the public living in South Africa during COVID-19 outbreak could complete an anonymous online survey. The survey was distributed on popular social media platforms, such as Facebook, Twitter, *etc.* Individuals were encouraged to pass it on to others. The online survey consisted of three sections including demographic information, perceived stress measure, and lockdown-related stress measure. The study received ethical approval from Sefako Makgatho University Research Ethics Committee (SMUREC/M/73/2020: IR). Furthermore, the study was carried out in accordance with the Declaration of Helsinki of the World Medical Association guiding research involving human subjects. Given the stressful nature of this pandemic and its sensitivity, participants received information about free online psychological intervention services from the South African Depression and Anxiety Group (SADAG), Dialectical Behaviour Therapy Support Group, and Lifeline South Africa to seek help with any emotional support or psychological harm that might arise because of engaging with the research content.

2.4. Materials

We designed an online survey that included:

2.4.1. Sociodemographic Data

Sociodemographic data, including age, gender and relationship status, education level, as well as the current province they were living in at the time of answering the survey.

Table 1. Independent sample t-test analysis on Lockdown related stress and perceived stress.

Variable	Mean	SD	Mean	SD	T	P
-	Male	-	Female	-	-	-
LDS	1.59	1.33	1.39	1.59	1.35	.004**
PSS	19.99	4.34	20.36	4.56	-.66	.728
-	Young Adults	-	Older Adults	-	-	-
LDS	1.47	1.17	1.38	1.32	.57	.341
PSS	20.69	4.38	19.05	4.63	2.89	.480
-	Single	-	In Relationship	-	-	-
LDS	1.63	1.31	1.34	1.13	-2.02	.001**
PSS	20.29	4.64	20.24	4.44	-.08	.000***

Notes: LDS= Lockdown related stress; PSS= Perceived Stress
 : * = $p < .01$; ** = $p < .05$; *** = $p < .000$

2.4.2. Perceived Stress Scale (PSS)

The perceived stress scale is an instrument to measure people’s perception of stress [17]. It is a 10-item Likert scale that is answered on a scale of 0 to 4 with items 4, 5, 7, & 8 scored in reverse. Scores range from 0 to 40, with higher scores indicating a higher risk factor for future distress. The PSS has yielded a Cronbach’s alpha of 0.72 in a South African sample [18]. For the current study, this measure was 0.39.

2.4.3. Lockdown Related Stress

This self-constructed questionnaire asked participants about the stress experienced because of the lockdown. The questionnaire was a multiple-choice that participants chose any response applicable to them with the answer options being anxiety, feeling depressed, problems in family relationships, problems in romantic relationships, stress about finances, and general problems. The participants’ responses to this questionnaire indicated that 63.9% experienced anxiety and depression, .9% substance abuse, 9.2% relationship problems, 12.8% financial and other problems, while 13.1.% said no stress was experienced.

2.5. Data Analysis

The Statistical Package for Social Science was used to conduct the statistical analysis (SPSS 27). All of the characteristics were subjected to a univariate analysis. The independent sample t-test was used to conduct bivariate statistical analyses for correlations between perceived stress and lockdown-related stress across the gender and relationship status. The p-value <0.05 was used as the statistical level of significance.

3. RESULTS

In the sample, 93 (28.1%) were males, and 233 (70.4%) were females. Young adults were 243 (73.4%), and older adults were 84 (25.4%). A total of 216 (65%) were in intimate relationships, while 110 (33.2%) described their relationship status as single. All participants have formal education ranging from matric (6.9%), a degree or diploma (27.25%), and post-graduate qualification (64%).

As shown in Table 1, the study results revealed a significant statistical difference between males and females regarding their experience of lockdown-related stress $t(281) =$

1.35, $p < .004$, with males reporting more lockdown-related stress than females. There was no significant statistical difference between males and females in perceived stress experience. However, the descriptive statistics showed that females $M20.36$ ($SD= 4.56$) reported more perceived stress opposed to males $M19.99$ ($SD=4.34$)

This study also did not reveal a significant statistical difference between young and older adults in their experience of lockdown related stress and perceived stress. However, young adults $M1.47$ ($SD=1.17$) reported more lockdown-related stress than older adults $M1.38$ ($SD=1.32$). Younger adults $M20.69$ ($SD= 4.38$) also reported more perceived stress than older adults $M19.05$ ($SD=4.63$).

Intimate relationship status significantly affected participants’ experience of both perceived stress and lockdown related stress. The results revealed a significant statistical difference in lockdown related stress as participants who reported to have no intimate relationships reported more lockdown related stress than those in intimate relationships $t(281) = -2.02$, $p < .001$. Furthermore, participants with no intimate relationships reported high perceived stress than those in intimate relationships $t(281) = -.08$, $p < .000$.

4. DISCUSSION

The study results revealed that men reported more lockdown-related stress than women. The COVID-19-induced restrictions have led to many job losses, which has affected most men. In the South African context, where men are seen as financial providers, a threat to income could have contributed to the stress associated with the lockdown. Looking at high rates of extramarital affairs, due to the lockdown restrictions, men in these relationships were likely to experience distress as they were forced to stay indoors with their marital partner and abandon their secret partner causing strain in these relationships. These financial and intimate relationship stress could have negatively contributed to the reportedly high rates of gender-based violence reported during the lockdown [1]. Contrary to this study, another study on the susceptibility to stress during the COVID-19 pandemic showed that women report a greater stress level [19].

Men and women differ in terms of how they conceptualise their emotions and their response to their emotions [20, 21]. Additionally, men tend to hide their vulnerabilities, ignore self-

care and are reluctant to look for professional help when they need it. During the Covid-19 pandemic, self-harm among males was triggered by factors such as financial insecurities, fear of infections, social stigma, anxiety and excessive regulations [22]. Socially learned norms of culture and tradition restrict men's ability to seek support, thus increasing the risk of self-harm [23]. Conversely, women's socialisation into gender roles encourages a health-promoting lifestyle; thus, women feel more protected during health-related adversities [24].

As much as there was no significant statistical difference in gender and perceived stress, females reported more perceived stress than males. The COVID-19 pandemic has affected women's domestic and caring roles. With school closure and childhood development centres, the lockdown has forced childminders and domestic workers to return to their primary residence leaving the parents to take over. This notion is confirmed by studies that show the gender difference in perceived stressors, where women reported greater sadness and anxiety than men [25, 26]. More males have lost jobs as a result of the lockdown. They might not have been perceived as providers any longer, threatening their perceived gender role of being providers [27].

There was no significant statistical difference between young and older adults in lockdown-related stress and perceived stress. However, younger adults experienced more lockdown-related stress and perceived stress. Generally, all people, regardless of age, experienced challenges associated with the COVID-19 pandemic and a combination of individual psychological and social responses to the crisis [22].

Young adults reported more lockdown-related stress and perceived stress than older adults. This could be due to limitations to their general movement. On average younger adults attend social gatherings more than older adults. In general, younger adults prefer to attend social gatherings and network sessions. Another possible explanation for these results is that younger people were more concerned about their future [28]. A study conducted among adolescents and young people in South Africa reported that young people were worried about making money and meeting their basic needs as COVID-19 worsened their pre-existing structural barriers [7]. The negative impact of the study results could have been the unequal sample size between males and females, impacting the analysis of gender differences and lockdown-related stress and perceived stress.

Those young adults who were not in intimate relationships experienced more loneliness. If you are a young adult working away from your hometown, you are socially isolated. A study was conducted in South Africa, which aimed to examine the association between COVID-19-related variables and loneliness among young adults [29]. It was found that a greater perceived risk of infection, limited perceived knowledge of COVID-19, and lower appraisals of resilience correlated with increased loneliness [29].

Participants who were not in intimate relationships experienced more lockdown-related stress and perceived stress. This could be due to the limited social support that an intimate

partner provides, as intimate relationships serve as a shield against difficult situations [30]. Living alone has been associated with depression, anxiety, and other common mental disorders [18, 31]. People who live alone will experience more stress than those who live with family and friends as they have a source of support [17]. According to another study [32], lack of privacy, undesirable social interaction, and possible decline of relationships with the family or flatmates lead to chronic stress. Furthermore, married people are happier, live longer and healthier lives [33, 34] and are exposed to fewer stressful life experiences than those not married. During the COVID-19 pandemic, people in good-quality personal relationships reported good mental health and well-being [35].

Intimate relationships allow for dual coping and serve as a shield against difficult situations [30]. A few studies [33] and [34] concluded that married people are happier and live longer and healthier lives than single individuals. Married people are said to be exposed to fewer stressful life experiences than those not married [36]. Another study [37] on cortisol levels among married individuals and single individuals reported that married individuals had lower cortisol levels than single individuals, concluding that those who are married have experienced lower levels of stress. A few researchers [38] argue that being in intimate relations has the risk of contagion of negative emotions, leading to increased stress levels. This is supported by another study [30] which states that intimate relationships are often a source of pressure, and the commitment to take care of the partner's mental well-being can be exhausting to one's ability to cope, which would lead to increased stress levels. It is often young adults who have intimate relationships compared to young adults.

The study results showed that people without intimate relationships reported more lockdown-related stress and perceived stress compared to those in intimate relationships. This could be due to the potential loss of social support one experiences without an intimate partner. This is a potential factor for loneliness. The data was collected during the hard lockdown when most people were at home, which was mainly their primary home, not a residential home due to work or study. So, the possibility of loneliness resulting from a lack of an intimate partner and friends/colleagues leaving for home could have severely impacted the participants.

Contrary to this argument, people in intimate relationships can still experience lockdown-related stress and perceived stress. Intimate relationships can serve as a source of stress [39] due to the pressure and the commitment to take care of the partner's mental well-being [30]. Unhealthy intimate relationships characterised by intimate partner violence can also serve as a source of stress.

LIMITATIONS

This study is not without limitations. Data collection was mainly online *via* social media platforms. Those adults in South Africa who did not have social media accounts could not participate in the study. Participation was also using access to a smartphone, tablet or laptop because people from disadvantaged backgrounds who did not own any of these devices could not be reached. The study's cross-sectional

nature did not allow associations with other factors such as extended lockdown related stress. Data was self-report in nature, and response bias could not be controlled for [39, 40]. There were unequal population sizes that participated in this study.

CONCLUSION

Male participants reported more lockdown related stress than female participants. Female participants reported more perceived stress than male participants. There were no age differences in lockdown related stress and perceived stress. People without intimate relationships reported more lockdown related stress and perceived stress than people with intimate relationships.

SUGGESTIONS FOR IMPROVEMENTS

Future longitudinal studies are needed to draw associations over an extended period of the lockdown [41, 42]. Community-based studies with access to people from disadvantaged backgrounds, including those from informal settlements, can provide profound mental health data during the pandemic [43].

AUTHORS' CONTRIBUTIONS

MM, AL and AK contributed to the conception and design of the study and wrote sections of manuscripts. MM wrote the first and all other drafts of the manuscript. AL performed the statistical analysis and wrote the subsequent drafts of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The studies involving human participants were reviewed and approved by Sefako Makgatho University Ethics Committee (SMUREC/M/73/2020: IR).

HUMAN AND ANIMAL RIGHTS

No animals were used for studies that are the basis of this research. All the humans were used in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2013 (<http://ethics.iit.edu/ecodes/node/3931>).

CONSENT FOR PUBLICATION

Participants were requested to complete the informed consent form on the survey link provided before completing the survey.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the SMU figshare repository at <https://figshare.com/s/23ea1ce6724a1f1745fa>.

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None.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest with respect to the research, authorship, and publication of this article.

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