



The effect of unemployment benefits on self-rated health and depression in South Africa during the COVID-19 pandemic

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The effect of unemployment benefits on self-rated health and depression in South Africa during the COVID-19 pandemic

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Abstract

Background: Employment is vital for maintaining health and health equity, whereas unemployment risks the health of the unemployed and their families. Indeed, the previous economic crisis in European countries deepened health inequalities by damaging the health of vulnerable people through its disproportionate impact on social determinants of health. Likewise, unintended social and economic consequences of the Coronavirus Disease-19 (COVID-19) pandemic and lockdown policies could lead to disproportionate results in the health of unemployed people. While many countries saw a glimmer of hope for labor market recovery through expanding social protection policies, Sustainable Development Goals 1.3 target showed that over half of the world population is unprotected, especially in countries in Sub-Saharan Africa. The situation in South Africa is also staggering because of existing social inequalities and a record-high unemployment rate during the pandemic. The country actively responded to the socioeconomic consequences of the pandemic by providing unemployment benefits through the existing social protection platform (Unemployment Insurance Fund; UIF) and the launch of a new program (COVID-19 Social Relief Distress; COVID-19 SRD) for unemployed people in both formal and informal economy. The evidence in South Africa about the relationship between unemployment, unemployment benefits, and health has been scarce, like in many other countries in Sub-Saharan Africa. Thus, there is an urgent need to generate empirical evidence on whether unemployment benefit schemes affect the health status of the unemployed in South Africa in order to elicit policy implications for the country and also for other Sub-Saharan countries. This study aimed to estimate the effects of unemployment and unemployment benefits (UIF and COVID-19 SRD) on self-rated health and depression among South Africans who were unemployed and of working age (18-64 years) during the COVID-19 pandemic.

Methodology: This study used nationally representative panel data from National Income Dynamics Study-Coronavirus Rapid Mobile Survey (NIDS-CRAM) in South Africa. NIDS-CRAM has five waves collected every few months from May 2020 to May 2021. While using wave 5 for a cross-sectional approach, this study applied the lagged effect of the unemployment benefits surveyed in preceding waves in 2020. The study fitted a binary logistic model and a generalized ordered logistic model for the analysis. First, the study estimated the effects of unemployment on self-rated health and the experience of depressive moods measured in Patient Health Questionnaire-2 (PHQ-2). Second, the effects of receiving unemployment benefits in 2020 on the same health outcomes in 2021 were explored.

Results: Unemployment was negatively associated with both health outcomes, yet only the association with self-rated health was statistically significant (OR=1.335, p=0.065). The positive association between unemployment benefits (UIF and COVID-19 SRD) and selfrated health was statistically significant. Specifically, receiving UIF in 2020 increased the odds of reporting poor self-rated health in 2021. However, the result of the additional analysis showed that UIF effect varied over time. Receiving UIF benefits 12 months before measuring health outcomes in wave 5 reduced the odds of reporting poor selfrated health by 73.7% (OR=0.263, p=0.05), whereas it has negative health effects if unemployed people received UIF benefits more recently than that. The experience of depressive moods showed a consistent but insignificant result. Receiving COVID-19 SRD in the preceding year (2020) helped reduce the odds of reporting poor selfrated health by 43.9% (OR=0.561, p=0.037), yet its effect on the experience of depressive moods was insignificant.

Conclusion: This study showed that being unemployed posed a threat to the health of unemployed people in South Africa during the COVID-19 pandemic. On the other hand, providing unemployment benefits through COVID-19 SRD reduced the probability of reporting the poor health of the unemployed. Although UIF effect varied over time, it opened a window for expanding the program for unemployed people during the crisis. The result of the study indicates the short-term effect of unemployment benefits on health during the pandemic. Nonetheless, it highlights the importance of ensuring financial security through social protection designed for unemployed people in both formal and informal sectors in the longer term. The evidence this study generated will support expanding social protection for the health of unemployed people in neighboring countries in Sub–Saharan Africa. Ultimately, it will contribute to accelerating the progress of achieving SDG 1.3 in the global South.

Keywords: Unemployment, Unemployment benefits, Social protection, COVID-19 pandemic, South Africa **Student Number:** 2020-26823

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Chapter 1. Introduction

1.1. Study Background

Employment is vital for maintaining health and health equity as not only it can provide the economic basis for a living but also various social factors that are related to health, such as social position and network, individual development, and self-esteem (CSDH, 2008). Job security has been reported to improve health, whereas the extreme consequence of job insecurity, viz. unemployment, yields poor health (Muntaner et al., 2010). Because losing a job means people have less disposable income to maintain their livelihood, risking their health and families. In addition, unemployment leads to poor mental health when people start feeling their jobs threatened, even before they actually become unemployed (Wilkinson & Marmot, 2003).

Especially studies from European countries showed that the economic crisis deepened health inequalities by damaging the health of already disadvantaged people through its disproportionate impact on social determinants of health (Marmot et al., 2013). Unemployed people who involuntarily lost their job during a crisis due to redundancy or business closure have a greater risk of poor health than employed people (Marmot et al., 2013). Previous economic crises have provoked unequal job loss, resulting in increased suicides in European countries (De Vogli, 2014) and increased mortality in the US (Noelke & Beckfield, 2014) and South Korea (Khang et al., 2005).

The Coronavirus Disease-19 (COVID-19) pandemic is not an exception. It is an unprecedented health crisis affecting populations around the world, and it is a unique economic crisis triggered solely by a non-economic factor, a pandemic (World Bank, 2020). The multifaceted health impact of the COVID-19 restrictions to curb the deadly virus left indirect and unintended social and economic consequences (Chiesa et al., 2021). For instance, fear of contracting

the virus and social distancing have exacerbated the domestic economy and labor market, leading to disproportionate results of unemployment for the young generation and less-educated workers (Lee & Yang, 2022). The world lost 114 million jobs, 8.8% of working hours (which is four times greater than during the crisis in 2009), and 8.3% of labor income in 2020, and those impacts were unequal to lower-income countries (ILO, 2021a). The global unemployment rate reached 6.5 percent (equivalent to 220 million people) in 2020, 1.1 percentage points increase (equivalent to 33 million people) from the previous year (United Nations, 2021b). While high-income countries saw a glimmer of hope for recovery in 2021, many developing countries without vaccines and fiscal buffer were left behind by this progress (ILO, 2021b). Such disproportionate impact of the pandemic on jobs pushed the most vulnerable people into poverty, especially women and workers in low- and middle-income countries (LMICs) where the informal economy is large (United Nations, 2021a). Global poverty has increased in 2020 for the first time since 1997, and its lingering impact will be unequal to countries in Africa (Kharas & Dooley, 2021). Thus, their health and well-being are at stake.

The situation in South Africa is also staggering. Despite being an upper-middle-income country and providing the highest coverage rate of social protection as 49.3% among countries in Sub-Saharan Africa (SSA), the long-lasting ramification of apartheid and high inequality make the country face numerous development challenges like other developing countries with lower income (World Bank, 2021b). Notably, the unemployment rate in South Africa is the highest in the world (ILO STAT, 2022). During the COVID-19 recession, the country's unemployment rate has consistently increased and hit a record high of 34.9% in the third quarter of 2021 since the survey collected in 2008. The impact of this situation was unequal to vulnerable groups, such as women, black Africans, and youth (Studies in Poverty and Inequality Institue, 2021).

One of the global responses to the pandemic unemployment shock was expanding social protection. During the COVID-19 pandemic, governments around the world introduced over 1,700 social protection

particularly regarding income, job security, measures, and unemployment (ILO, 2022). Sustainable Development Goals (SDGs), a global agenda for sustainable development with 17 goals that all United Nations Member States has endorsed in 2015, already encompassed unemployed persons under the SDG 1.3 target to end poverty among other poor and vulnerable people. SDG indicator 1.3.1 monitors this progress by measuring the population who receives at least one social protection benefit. However, such protection measures are primarily being implemented in high-income countries, leaving over half of the world population wholly unprotected (ILO, 2021c). Hence, scholars raised their voices urging governments to expand social protection to reduce health inequalities and improve health and well-being across the globe during the COVID-19 pandemic (Barron et al., 2021; Blofield et al., 2022; Lynch, 2020; McKee & Stuckler, 2020).

Meantime in South Africa, a country that provides the highest coverage rate of social protection for the unemployed (11.9%) after Seychelles (18.0%) in the SSA region^①, the government has instituted a special COVID-19 Social Relief of Distress (COVID-19 SRD) in April 2020 for unemployed people who live without any income source. In addition to the country's existing contributory form of the Unemployment Insurance Fund (UIF), a non-contributory special grant COVID-19 SRD bridged the gap in the country's social assistance system where unemployed persons were structurally neglected (Köhler & Bhorat, 2021). To identify the policy's effectiveness in health, it is worthwhile to explore whether unemployment benefits could mitigate the negative health impact of unemployment in South Africa, particularly during the economic crisis provoked by the COVID-19 pandemic.

More importantly, this study will fill the evidence gap in research on how the negative health consequences of unemployment can be averted (Hammarström & Janlert, 2005). Many countries in the global

^① Seychelles is an archipelago of 115 islands in East Africa with over 100,000 population live.

South were very limited in studies and policies responding to unemployment and its harm to health. Moreover, the progress towards achieving SDG 1.3 in Africa showed the lowest coverage as 17.4%, compared to other regions such as Europe and Central Asia (83.9%), Americas (64.3%), Asia and the Pacific (44.1%), and Arab States (40.0%). Thus, there is an urgent need to generate empirical evidence on whether unemployment benefit schemes affect the health status of the unemployed in South Africa in order to elicit policy implications for the country and also for other Sub–Saharan countries. Therefore, this study aims to fill the empirical evidence gap about the relationship between unemployment, unemployment benefits, and health during the COVID–19 pandemic in South Africa, where the government actively implemented social protection policies for unemployment.

1.2. Purpose of Research

This study aims to estimate the effects of unemployment and unemployment benefits on self-rated health and depression among South African adults in working age during the COVID-19 pandemic. The study will add empirical evidence of the effects of unemployment benefits on health in the global South, where such evidence is scarce (Hammarström & Janlert, 2005). Hence, the result of this study will accelerate the diffusion of social protection for unemployed persons throughout neighboring countries in the SSA region.⁽²⁾ Ultimately, this study will contribute to the global efforts to achieve SDG 1.3.

1.3. Study questions

The key questions of the study are as below:

⁽²⁾ The study of Obinger & Schmitt (2021) provided empirical evidence that, rather than domestic factors such as GDP or types of political regime, international factors such as engaging in war, being a member state of International Labor Organization (ILO), and policy diffusion (the proportion of unemployment insurance scheme among countries in the region) influenced more to instituting unemployment insurance in the Global South.

- Did unemployment affect the health of working-age adults in South Africa during the COVID-19 pandemic?
- 2. What are the effects of unemployment benefits (UIF and COVID-19 SRD) on the health of unemployed working-age adults in South Africa during the COVID-19 pandemic?

Chapter 2. Theoretical Background and Literature Review

2.1. Unemployment and health

2.1.1. Definition of unemployment

The term 'unemployment' falls into the category of employment conditions that relatively take less attention than working conditions in public health (Benach et al., 2010). By definition, unemployment is "a working-age person who does not have paid job and is available for and looking for work", albeit the meaning varies in each country (Bartley & Ferrie, 2001). According to the International Labor Organization (ILO) Employment Promotion and Protection against Unemployment Convention, 1998 (No. 168), unemployment can be divided into two types: 1) full unemployment defined as the loss of earnings due to the inability to obtain suitable employment, and 2) partial unemployment defined as a temporary suspension or reduction of hours of work or earnings without any break in the employment relationship. Both types of unemployment are subject to protection under the ILO Convention 168.

The definition of unemployment needs to be understood with caution because it leaves out a large number of people who want to work, but are currently unavailable or prevented even from seeking work (Bartley & Ferrie, 2001; EMCONET, 2007). For instance, people with long-term illnesses, caregivers, informal workers, and unpaid workers in developing countries can be discouraged from seeking employment opportunities during the COVID-19 pandemic. Department of Statistics South Africa reports two definitions of unemployment in their documents. One of their reports described unemployed persons as working age (aged 15-64 years) and not employed in the reference month (Statistics South Africa, 2021b). The report showed that the official (or narrow) unemployment definition counts as people who actively searched for work and were available

for work. In contrast, the expanded (or real) unemployment definition only includes people who were available to work but did not look for work or were discouraged from looking for work. Considering the adverse effects of the COVID-19 pandemic on the labor market (Lee & Yang, 2022), it is plausible that the majority of unemployed people were discouraged from actively seeking work. Notably, the economy of South Africa was largely affected by the pandemic recession due to its responsiveness to lockdown policies (Daniels et al., 2021). Therefore, it is appropriate to apply extended definitions of unemployment in the context of the COVID-19 pandemic.

2.1.2. Relationship between unemployment and health

Unemployment is one of the critical social determinants of health (Wilkinson & Marmot, 2003). Before making this conclusion, there were many efforts to explore the relationship between unemployment and health since the early post-war period when unemployment got attention (Hammarström & Janlert, 2005). Historically, researchers developed several models to link unemployment and ill-health based on theoretical traditions, namely bio medics, sociology, and psychology (Janlert & Hammarström, 2009). Janlert and Hammarström (2009) compared dominantly used seven models[®] and concluded that the economic deprivation model was relatively successful in explaining the link between unemployment and different health outcomes, after a model of latent functions. However, the study was limited to the context of Sweden, posing a possibility of favoring specific models.

In the 2000s, the Employment Conditions Knowledge Network (EMCONET) rigorously analyzed the relationship between employment and health, including the devastating health consequences of unemployment as one employment condition in their final report (EMCONET, 2007). The report was a part of the global effort to reduce

⁽³⁾ Seven different models are: an economic deprivation model, a lack of control model as well as a locus of control model, a stress model, a social support model, a work involvement model, and a model of latent functions

global health inequalities led by the World Health Organization (WHO) Committee on Social Determinants of Health (CSDH). The report has presented two theoretical frameworks to structure empirical observations explaining the relationship between employment conditions and health inequalities. First, the macro-level model described the larger context around employment and health, such as power relations, labor, and welfare policies. On the other hand, the micro-level model linked employment conditions and health inequalities through working conditions and economic deprivation, including behavioral, psychopathological, and psychosocial pathways (see Figure 1).

Historically developed models and the recent work of WHO indicate that unemployment is one of the critical conditions that provoke ill-health and health inequalities through various pathways.

Figure 1. Micro-theoretical framework of employment conditions and health inequalities



Source: EMCONET (2007)

Years of accumulated empirical evidence showed a consistent and

robust association between unemployment and a range of adverse consequences on physical and psychological health, and the COVID-19 economic shock is not an exception (Hensher, 2020). Several papers reported the negative health results derived from unemployment during the pandemic. Young adults in the US who recently lost their job or were in job insecurity reported experiencing more symptoms of anxiety and depression than others (Ganson et al., 2021). Another study in the US projected the lingering impact of the pandemic unemployment on mortality and life expectancy (Bianchi et al., 2021). A modeling study in Australia extrapolated the increase in the suicide rate, suggesting the need for financial recovery and labor market participation for unemployed persons (Deady et al., 2020). In China, being unemployed resulted in a lack of social support and economic deprivation, eventually impaired health-related quality of life among melanoma patients (Guo et al., 2021).

2.1.3. Unemployment and economic crisis

Unemployment is one of the byproducts of globalization because four macrostructural trends of the globalization process[®] shifted power between employers and workers and yielded uncertainty and flexibility in the labor market (Buchholz et al., 2009). Simultaneously, asymmetric power relations over political actors affected social policies of the labor market and welfare state that are deeply intertwined, strengthening existing social inequalities and thus health inequalities after all (EMCONET, 2007). In the given context, the historical economic crisis with shifting ideology from Keynesianism to neoliberalism pushed governments to adopt 'laissez-faire' economic policies and labor market flexibility, resulting in the extreme form of job insecurities such as unemployment and precarious employment that are now recognized as a social determinant of health (Benach et al., 2014). Overall, unemployment has become very sensitive and

^④ These trends are: 1) Internationalization of markets, 2) Intensification of competition between nation states, 3) Increasing worldwide interconnectedness, 4) The rising importance of globally networked markets

fragile to economic downturns and was left out of social safety nets. Therefore, people who lost their job during the economic crisis, especially youth, have more possibilities to experience financial difficulties, stress, and a lack of control that leads to poor health than those in employment (Marmot et al., 2013). Empirically, studies that explored the relationship between unemployment and health in previous economic crises showed adverse health outcomes in European countries (De Vogli, 2014), the US (Noelke & Beckfield, 2014), and South Korea (Khang et al., 2005).

The COVID-19 pandemic and its economic impact showed a different trend from previous economic crises that reinforced the politics of neoliberalism and its policies. The pandemic has revealed limitations of responses from market-based neoliberalism and highlighted the importance of public policies that promote social equality (Saad-Filho, 2021). Unsurprisingly, governments worldwide have introduced over 1,700 social protection measures during the COVID-19 pandemic, according to the ILO's Social Protection Monitor (ILO, 2022). Income and job protection and benefits to unemployment were dominant measures among others, taking first place at 16.22% and third place at 12.35%, respectively. However, the SSA region is far behind the global trend of providing social protection benefits to their population, measured by SDG indicator 1.3.1.⁵ Due to the insufficient financial resources for social protection, the SSA region seems unable to recover from the lingering effect of the pandemic until now (ILO, 2021c). This fact supports that despite their urgent need for recovery from the pandemic recession through such policies, LMICs were unable to implement those for their people who are in dire help due to financial constraints. In addition to the diminishing social spending, aid cut from many developed countries during the economic crisis will likely be challenging to developing countries, weakening resilience to socioeconomic impact and accelerating health

⁽⁵⁾ SDG indicator 1.3.1 "Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable"

inequalities between rich and poor countries (Marmot et al., 2013).

2.2. Unemployment benefits and health

2.2.1. Social protection

According to the definition by the United Nations Research Institute for Social Development (UNRISD), social protection is concerned with "preventing, managing, and overcoming situations that adversely affect people's well-being" as a part of the social policy that protects people from the unpredictable life changes (Bangura, 2010). Social protection or social security is a human right that consists of policies and programs designed to reduce and prevent poverty and vulnerability throughout the life course by providing benefits to all forms of vulnerable people (ILO, 2017). It emerged from the context of the economic crisis to mitigate the social consequences of neoliberal policies, such as poverty and inequality (Bangura, 2010). As mentioned above, social protection is indicated in SDG 1.3 target "Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable" to achieve SDG 1 goal "End poverty in all its forms everywhere." However, this policy approach is relatively new to countries in Asia and SSA compared to the European welfare states.

Due to the socioeconomic pathway of the COVID-19 pandemic that damages our health, it is crucial to implement social protection to break the boundaries between healthcare and other sectors. According to the model titled "Typology of Entry Points for Policy Actions on Social Determinants of Health" proposed by Diderichsen and Hallqvist (1998), the intervention through the 'health system' is the entry point after the onset of disease or injury (Solar & Irwin, 2010). The point of reducing the social consequences of illness is considered a downstream approach. On the other hand, policies in social protection can intervene in the upper levels to decrease differential exposure and vulnerability generated by social determinants of health because social determinants are both protective and risk factors of health and are stratified in our society, resulting in disproportionate health consequences at the same time (Lynch, 2020). Thus, developing intervention at the primary level is ideal to prevent inequalities of social determinants of health, for instance, preventing the incidence of unemployment (Hammarström & Janlert, 2005), thus decreasing 'exposure' in the model or upper-stream. Nevertheless, it is also essential to prevent ill-health from unemployment through social policy: decreasing 'vulnerability' in the model or mid-stream. In addition to fair employment and decent work, WHO has already pointed out the importance of income security in social protection, such as unemployment benefits for reducing health inequalities (CSDH, 2008; Lundberg et al., 2016; WHO, 2015).

There is a wealth of evidence that policies in social protection, including unemployment insurance, positively affect health. A study conducted in 26 European Union countries revealed that the rapid and significant rise in unemployment due to the economic downturn was associated with the short-term rise in adverse health events (Stuckler et al., 2009). The point of the study is that increasing social spending for unemployed persons can mitigate those adverse effects on health. The effects of investing in the social sector that offset adverse health effects, such as the effect of unemployment on suicides, were observed in other countries and regions in Europe during the recession (De Vogli, 2013, 2014; Shahidi et al., 2016). The evidence of the need for social investment implies the importance of the distribution of wealth and income, which WHO CSDH strongly recommends through its overarching goals (CSDH, 2008). The socio-economic impact of the COVID-19 pandemic contributed to the rise in global poverty rose extensively and damaged vulnerable workers in developing countries. Therefore, it is essential to expand social safety measures to maintain the health of the poorest people (Buheji et al., 2020).

2.2.2. Unemployment benefits and its effects on health

An unemployment benefits scheme is one component of

unemployment protection schemes that ensure essential income security for workers who are at risk of losing their job or are already unemployed (ILO, 2021c). Moreover, unemployment benefits increase employability through programs of employment promotion, such as vocational training and Active Labor Market Policies (ALMPs).

Figure 2 shows the interrelation between social protection and employment promotion. Unemployment protection is twofold: employment retention and unemployment benefits. While employment retention schemes prevent unemployment by keeping workers in jobs, unemployment benefit schemes take an exclusive role in supporting job seekers to find suitable employment by providing unemployment benefits to fully unemployed people or partially unemployed people under the ILO Convention 168.

Figure 2. Unemployment benefit schemes within the interrelationship between social protection and employment promotion



Source: ILO (2021c)

Several studies showed the positive effects of unemployment benefits on health in the US and Canada in terms of self-rated health (Cylus et al., 2015; Kuka, 2020; Faraz V Shahidi et al., 2019) and in South Korea in terms of subjective and psychological health during the economic crisis (Kim, 2016) and happiness (Kim, 2019).

The synthesized result of the realist review in the context of Northern America, Europe, and Japan showed that unemployment policies with flexible eligibility and a generous amount of its benefits had shown better outcomes in poverty and health in general (O'Campo et al., 2015). Such generosity in the unemployment scheme lowered the probability of reporting poor health (Cylus et al., 2015), and people tend to utilize health insurance which could lead to positive health externalities in the US (Kuka, 2020). More recently, there have been attempts in research to estimate the effect of unemployment benefits on health by reducing selection bias through propensity score matching (Cylus & Avendano, 2017; Faraz Vahid Shahidi et al., 2019; Shahidi & Parnia, 2021).

However, some results are mixed, and hard to say conclusively whether providing unemployment benefits has positive effects on health. Particularly, health outcomes vary by welfare state regimes⁶ and the evidence is still unripe and limited for generalization (Hillier-Brown et al., 2019). For instance, receiving unemployment benefits has buffering effects in Sweden by lowering mental health risks, whereas it was the opposite in Spain because insufficiency made recipients more dependent (Malmberg-Heimonen, 2005). Also, health outcomes of benefits recipients can vary depending on how they are measured. Unexpectedly unemployed people in Japan maintained their somatic conditions and healthy behaviors as unemployment benefits supported their livelihood and motivated them to re-enter the job market after the support ends, though their mental health was damaged (Matoba et al., 2003). Moreover, the evidence is geographically uneven because most of the studies were from European welfare states and few advanced countries in Northern America and Asia, which excluded the global South alike studies about the relationship between unemployment and health. Assumably, this is

[®] Liberal regimes (e.g., United States), conservative regimes (e.g., Germany), and social democratic regimes (e.g., Sweden)

the result of the lack of programs for the unemployed person or informal and segmented labor markets (ILO, 2017). Meanwhile, few studies raised concerns directed to the adverse health effect of unemployment (Adofu & Abdulganiyu, 2018; Yamben & Asaah, 2020) and the potential role of unemployment benefits in mitigating the effects on health in SSA. Therefore, there is an urgent need to generate evidence of the positive health effects of unemployment benefits in SSA in order to actively introduce such policies.

While providing unemployment benefits was found to be beneficial to people's health in general, others commonly worry about its negative effect on productivity and prolonged spells of unemployment. Since the 1980s in the US, procyclicality of the labor productivity $^{\mathcal{D}}$ was fell and the unemployment rate has increased due to flexibility in the labor market and lowered lay-off costs. Generous in the duration of unemployment benefits during the recession lowered job search efforts of unemployed people who receive benefits, extending spells of unemployment. Rujiwattanapong (2021) has shown that extended unemployment insurance during the recession accounted for over 40% of this 'labor productivity puzzle'.[®] In fact, uninsured unemployed people showed more effort to find a job than insured unemployed people (Rujiwattanapong, 2020). This situation could exacerbate the unemployment situation, the labor market, and the economy, and affects population health in the future. Particularly during the pandemic, people who are not able to work remotely can be discouraged to find employment and prefer to stay on unemployment status. Moffitt (1985) and Meyer (1988) found that generous level and length of unemployment benefits increased unemployment spells in the US. However, this phenomenon among recipients of unemployment benefits in the US is largely explained by the liquidity effect rather than moral hazard (Chetty, 2008). In addition, an experimental result has shown that this moral hazard that discourages work was not the

^⑦ Procyclicality of the labor productivity is due to lagged jobless recovery: few people produced more outputs

⁽⁸⁾ Labor productivity puzzle: the fall of the correlation between output and labor productivity due to less procyclical labor productivity since 1980s

case in developing countries (Banerjee et al., 2017). In South Africa, a recent quasi-experimental analysis found that the receipt of unemployment benefits increased the probability of searching for a job by more than 25 percentage points, thus contributing to labor market recovery in South Africa (Köhler & Bhorat, 2021). Therefore, it is plausible to consider that unemployment benefits programs are associated with positive health by securing income and employability in the context of South Africa during the pandemic.

2.2.3. Unemployment benefits in South Africa

South Africa's contributory unemployment benefits program, the Unemployment Insurance Fund (UIF), is based on the constitutional mandate of the country to protect the right to social security. Both employers and employees are subject to register for UIF to pay a contribution for its vision that contributes toward poverty alleviation (Department of Employment and Labour, 2021). Employees who meet specific criteria, such as the continuous contribution of 1% of their salaries, involuntary loss of their job, and actively seeking work, are subject to receive a minimum of 36% of the average salary to a maximum of 17,712 South African Rands (\$ 1,200) a month as of 2021. While a majority of the UIF benefits target unemployed persons, there are other types of benefits in UIF such as illness, reduced work time, maternal and parental, adoption, and deceased benefits, among others. In the 2019/2020 fiscal year, 801,302 unemployment claims have been approved, which gradually increased from its induction in 2005 (Department of Employment and Labour, 2021). In addition to providing monthly remuneration, UIF manages its fund, operates call centers for its members, and, most importantly, it runs Labour Activation Programmes (LAPs) to enhance employability, create labor opportunities, and reduce unemployment (Department of Employment and Labour, 2021). Although UIF has a long history from the time of the apartheid years and went through several amendments (Bhorat et al., 2013), it excluded one of the most vulnerable groups of the workforce in the time of crisis, such as unemployed people who have

never worked and workers in the informal economy.

With the increasing threats of the coronavirus and its devastating economic ramification in April 2020, the government of South Africa instituted the COVID-19 Temporary Employer-Employee Relief Scheme (UIF-TERS) under the UIF scheme. UIF-TERS is a form of employee retention benefit, such as policies in Europe that keep people out of poverty and ill health by maintaining their employment during the economic crisis.⁽⁹⁾ UIF-TERS provides wage support to employers who keep their contracts with employees to prevent job retrenchment. Approximately two-thirds of UIF contributors received UIF-TERS benefits during the pandemic recession (Köhler & Hill, 2021), which perhaps was effective in reducing the number of people receiving unemployment benefits. Therefore, this study cannot exclude the possibility of underestimating the effect of UIF benefits on the health of unemployed people during the COVID-19 pandemic.

In addition to UIF, the government instituted a special COVID-19 Social Relief of Distress (COVID-19 SRD) for the unemployed in April 2020, almost simultaneously with a nationwide lockdown measure. The COVID-19 SRD targeted unemployed people above the age of 18year-old without income, including any other social assistance such as the UIF benefits. The COVID-19 SRD was initially disbursed from May 2020 to October 2020 and extended twice until its termination in April 2021. This non-contributory unemployment benefit is expected to fill the gap in the country's social assistance system that structurally neglected unemployed adults in South Africa's postapartheid era (Köhler & Bhorat, 2021) and mitigate the harm to the health of unemployed people, particularly during the pandemic recession. Although the amount of Rand 350 a month (\$ 25) which accounts for only 40% of the national poverty line is relatively insufficient than other social assistance, the majority of the recipients responded that the benefit positively changed the lives of the

⁽⁹⁾ Examples of job retention policies in Europe during the COVID-19 pandemic: Kurzarbeit in Gemany, Activité Partielle in France, Cassa Integrazione Guadagni in Italy, Expendiente de Regulación de Empleo Temporal in Spain, and Coronavirus Job Retention Scheme in England

unemployed and their family (Department of Social Development, 2021b).

Chapter 3. Study Methods

3.1. Study Design

This study estimated the effects of unemployment benefits on the health of South African adults, taking a cross-sectional approach with data collected during the COVID-19 pandemic.

As the current context is still under the influence of a global economic recession from the onset of the COVID-19 pandemic that affected global society at large (World Bank, 2020), this study posits the economic deprivation model to explore whether unemployment benefits have positive effects on health in South Africa during the COVID-19 recession. The economic deprivation model was dominantly used during the inter-war period when an increasing number of unemployed people lacked the necessities to maintain their livelihood (Janlert, 1991; Janlert & Hammarström, 2009). Even though South Africa is relatively more prosperous than other developing countries in the SSA region, the country's economy was largely shrunk in 2020, and the job loss was disproportionally applied to vulnerable groups due to the long-lasting social inequalities and the volatile labor market (World Bank, 2021a, 2021b). Therefore, it is appropriate to apply the logic of material deprivation as a major mechanism that harms health and provides a potential solution through cash transfer (Janlert & Hammarström, 2009). In addition, the model of this study endeavored to consider comprehensive aspects where available, including health behaviors and psychosocial factors, as depicted by EMCONET (2007) in Figure 1, and the influence of COVID-19.

While unemployment-driven material scarcity and other social factors affected the health of the unemployed, unemployment benefits attenuated the negative consequences on poverty and health (Renahy et al., 2018). Thus, the model of this study built on the conceptual framework of Renahy et al. (2018) that described the relationship between unemployment, unemployment insurance, poverty, and health. This study tried to yield empirical evidence of the health effect of

unemployment benefits in the context of South Africa during the COVID-19 crisis, considering the economic deprivation model and positive health effects of unemployment benefits. Taking all of those into account, a study model in Figure 3 shows that unemployment contributes to poor health outcomes mainly through the pathway of economic deprivation in the given personal characteristics and the surrounding context during the pandemic. Psychosocial factors and living conditions indirectly affect the health of the unemployed. Unemployment benefits intervene in the pathway and mitigate the negative consequences of health, and other social assistance are deemed partially taking a role in this mechanism.





Source: Adapted from EMCONET (2007) and Renahy et al. (2018) by author

3.2. Data and Sample

3.2.1. Database

This study used National Income Dynamics Study – Coronavirus Rapid Mobile Survey (NIDS-CRAM), a survey to generate reliable research on income, employment, and welfare, including healthrelated behaviors and outcomes, during the COVID-19 pandemic in South Africa (NIDS-CRAM, 2020a, 2020b, 2020c, 2021a, 2021b). NIDS-CRAM was endorsed by several government officials, including the Presidency, the National Treasury, and the Department of Health of South Africa. It is a panel study consisting of five waves collected every few months[®] through phone calls and text messages for a year from May 2020 to May 2021. Using a stratified sampling design, individual samples were drawn from the National Income Dynamics Study (NIDS) Wave 5 (2017), a nationally representative panel study. It is worth noting that the results of this data represent samples of 2017 South African adults who were re-interviewed in 2020 and 2021. Thus the study applied appropriate weighting to reflect the outcomes in 2020 and 2021 (Ingle et al., 2021; Kerr et al., 2020). While the study used samples from NIDS-CRAM Wave 5 only to take a cross-sectional approach, it utilized data from other waves as well to consider lagged effects of unemployment benefits on health.

3.2.2. Study sample

The sample of this study consisted of adults aged between 18 to 64 years who reported being employed or unemployed and available to work in the next seven days. Although there is no specific retirement age in the law of South Africa, this study used the conventional definition of working age in South Africa as 15 to 64 years of age (Daniels, 2021 #64; OECD, 2022 #121). The minimum working age is 18 as samples were aged 3 years from NIDS wave 5 (2017). Thus, the study accounted for the working age of South African adults as between 18 to 64 years. The study excluded vaccinated people to minimize the potential bias of reporting poor health. The collection of NIDS-CRAM wave 5 was conducted concurrently with the first phase of the national COVID-19 vaccine rollout from February to May 2021, targeting frontline health workers. It is reported that physical and psychological burdens of health workers, such as anxiety

⁽⁰⁾ Wave 1 (7 May 2020 - 27 June 2020), wave 2 (13 July 2020 - 13 August 2020), wave 3 (2 November 2020 - 13 December 2020), wave 4 (2 February 2021 - 10 March 2021), wave 5 (6 April 2021 - 11 May 2021)

and depression, are high during the COVID-19 pandemic (Shreffler et al., 2020). Therefore, this study decided to exclude samples who are inoculated with the COVID-19 vaccine, considering the possibility of reporting poor health rather than reporting the vaccine's protection effect.

Out of 5,862 samples from NIDS-CRAM wave 5, this study excluded 603 non-responded observations, 40 observations who refused to report their employment status, 862 observations who were not economically active, 49 observations who received duplicated unemployment benefits, 102 observations who were vaccinated, and 1 observation with possible errors in response.^(III) The final sample of this study consisted of 4,205 South African adults.

3.3. Variables

3.3.1. Dependent variables

This study used two types of dependent variables to estimate health outcomes: self-rated health and the experience of depression. Recent studies actively used self-rated health in exploring the relationship between unemployment benefits and health, primarily in binary form (Cylus & Avendano, 2017; Cylus et al., 2015; Faraz Vahid Shahidi et al., 2019; Shahidi et al., 2016). NIDS-CRAM measured self-rated health on a five-level Likert scale⁽²⁾ that asked respondents to describe their current health condition. This study collapsed the five-level scale into a binary form, validated for predicting objective measures of health (Idler & Benyamini, 1997; Lundberg & Manderbacka, 1996).

NIDS-CRAM measured depression with Patient Health Questionnaire-2 (PHQ-2), a valid measurement for depression screening (Kroenke et al., 2003). Survey respondents responded to

⁽¹⁾ The author has identified a sample that made an error in the response of household income and considered this sample contaminated.

⁽²⁾ Five-level was expressed as "Poor", "Fair", "Good", "Very Good", and "Excellent"

the first two inquiries of the PHQ-9, a more in-depth measurement, about the frequency of depressed mood and anhedonia in the past two weeks, scoring each as 0 (not at all) to 3 (nearly every day). The combined score of two questions yielded PHQ-2 scores that range from 0 to 6. If a total score is 3 or greater, the respondent will likely experience major depressive disorder and is subject to further evaluation using PHQ-9 (Kroenke et al., 2003). This study regrouped the PHQ-2 scale into three ordinal scales: 0 (PHQ-2 score 0), 1 (PHQ-2 score 1 and 2), and 2 (PHQ-2 score 3 to 6). Although the purpose of PHQ-2 is limited to the screening of depressive mood, the use of this outcome is still worth speculating the scale of the impact of unemployment and unemployment benefits on mental health, which was another health concern that was affected by job loss during the COVID-19 pandemic (Ganson et al., 2021).

3.3.2. Explanatory variables

The study analyzed the effect of unemployment on the health of people in South Africa before estimating the effect of unemployment benefits on health because the evidence is scarce (EMCONET, 2007; Hammarström & Janlert, 2005). This study constructed the state of being unemployed binary as to whether a working-age adult is employed or unemployed. ILO Social Security Conventions No. 102 requires the provision of cash benefits for the unemployed who are capable of and available for work but unable to obtain suitable employment. Hence, the unemployment variable refers to the people who are in joblessness in March 2021, the reference month of NIDS-CRAM wave 5, but available for and willing to work within seven days. This definition adopts an expanded (or real) view of unemployment, considering the situation when unemployed people experience difficulties in finding employment. In addition, it excluded not economically active people who were either unavailable to start work or not looking for a job due to several reasons, such as being retired, a student, or having problems with health.

The main explanatory variables are the unemployment benefits

which consist twofold. The first variable is the Unemployment Insurance Fund (UIF), constructed as whether the respondent had received the UIF benefits in 2020, the preceding year of asking about health conditions at NIDS-CRAM wave 5 conducted from April to May 2021. The definition of the recipient of unemployment benefits, thus, considered the lagged effect of unemployment benefits on health as other studies did (Cylus & Avendano, 2017; Faraz Vahid Shahidi et al., 2019; Shahidi & Parnia, 2021). Another variable for unemployment benefits is COVID-19 Social Relief Distress (COVID-19 SRD) on whether the respondent had received the benefit of COVID-19 SRD in the preceding year (i.e., 2020).

This study took a relatively short time span to capture the lagged effect of unemployment benefits on health than other studies that aggregated several years of data.^(B) However, the study expected to observe an immediate effect of unemployment benefits on health since the economic deprivation that affects health outcomes takes a relatively more significant portion in the context of South Africa during the pandemic (Nwosu et al., 2021). Disadvantaged people who were at risk of poverty and hunger are more likely to receive social assistance, including unemployment benefits (Bhorat & Köhler, 2020; Köhler & Hill, 2021). Also, the assessment reported that 93.3% of the people who have received COVID-19 SRD used benefits on purchasing food (Department of Social Development, 2021b).

3.3.3. Control variables

The analysis controlled demographic characteristics, socioeconomic factors, and other variables related to health outcomes, as in Figure 2. Control variables in demographic characteristics are age, age squared, sex, race, marital status, living with kids, household size,

⁽³⁾ Each NIDS-CRAM Wave from 1 to 3 was collected from May-June 2020, July-August 2020, November-December 2020 respectively, whereas Wave 5 was collected from April-May 2021. The minimum time span between receiving the benefit and measuring health outcome is 5 months (December 2020 to April 2021) to maximum 13 months (May 2020 to May 2021).

urbanicity, and types of dwellings. Age and age squared are continuous variables in number. Sex is a binary form as male and female. The race is composed of Black, Asian/Indian, Colored, and White. A marital status variable is a binary form as married or not, including traditional marriage. The variable of living kids is whether children under 17-year-old, including babies, reside in the household. Household size is the number of residents. Urbanicity is a binary variable as living in an urban or rural area that geographically includes both traditional and farms. Types of dwellings are composed of a house (or flat), a traditional house (mud hut), an informal house (shack), and others.^(B)

In terms of economic characteristics, NIDS-CRAM only provides household income without knowing whether individuals reside in the same household. This limited information will underestimate the household income data (Köhler & Bhorat, 2021) and yield a significant level of errors in reporting household income. The current dataset for analysis, NIDS-CRAM wave 5, showed 26.63% of missing household income data, and it is not Missing at Random (MAR) (Ardington, 2020). For instance, not all residents in large households report their income data. Such limitation restricts the use of the alternative measure missing indicator method (MIM) - to include income data in the analysis (Wooldridge, 2015). Moreover, the quality of non-missing data in NIDS-CRAM is systemically distorted and underestimated (Jain et al., 2020). Köhler and Bhorat (2021) addressed these issues by indirectly estimating household income data, using bracket, bracket weights, and limited earning data. However, considering both issues of systemic missing and the low quality of non-missing data, the application of the imputation method is dependent on the individual analysts with caution (Ardington, 2020). As the NIDS-CRAM wave 1 quality report raised several quality issues, this study decided to exclude the household income variable in the analysis. Alternatively, this study included whether respondents' households had enough money to buy food so that people keep themselves out of hunger and

⁽⁹⁾ Other types of dwelling accounts only for 2.15% without any detailed information, thus difficult for interpretation.

maintain their health during the recession. The question asking, 'Did your household run out of money to buy food?' was treated as a binary variable to consider their economic status.

Other control variables in socioeconomic and health-related characteristics are educational attainment, access to water, social support, hunger, perceived risk of coronavirus, chronic condition, self-rated health in 2020, and medical aid. The variable of educational attainment consists of four groups: up to primary, up to secondary, matric, and tertiary. South Africa provides nine years of compulsory education, divided into primary education from grade 1 to 7 and secondary education from grade 8 to 9 (OECD, 2021). The country has vocational education that belongs to the category of primary education and secondary education by their types and levels.⁽⁵⁾ Matric refers to the final year of high school, which is the minimum requirement for entering a university that provides tertiary education. Access to water means whether the piped or tap water source is inside the residence or yard. Social support indicates whether the respondent had received food or shelter support from the government, NGOs, church, or community during the reference period. Hunger is a binary form as whether anyone in the household has gone hunger in the last seven days. The risk of coronavirus is an individually perceived risk of contracting the virus. Chronic conditions reflect the labor market disadvantages as it restrains people from participating in the labor market, and they are less likely to be provided unemployment benefits, albeit limited but conservative (Faraz Vahid Shahidi et al., 2019). Also, it reflects the sheer effect of explanatory variables on health. The variable of the chronic condition in this study includes human immunodeficiency virus (HIV/AIDS), tuberculosis, and lung or heart conditions, which information is available in NIDS-CRAM wave 1 only. Therefore, the study additionally included self-rated health at wave 1 to overcome the limited number of diseases listed in the definition of chronic condition. Finally, the study controlled whether the respondent

⁽⁹⁾ National Certificate Vocational 2–3 and National Technical Certificate 1–2 are equivalent to secondary education. Adult Basic Education and Training (ABET) 1–3 are equivalent to grades 3–7 in primary education.

had a medical aid scheme. Medical aid schemes in South Africa provide a financial safeguard in medical expenses for members who pay monthly contributions. Those schemes are not-for-profit and governed by the Council for Medical Schemes, an autonomous statutory body created by the parliament. Although South Africa envisages achieving universal health coverage through National Health Insurance, medical aid schemes seek to take a supportive role in financial coverage for South Africans. Table 1 listed details of all dependent, explanatory, and control variables.

Category	Variable name	Description	Туре
Dependent variable	Self-rated health	5-level Likert scale of health in April/May 2021	Binary (good/poor)
	Depression	PHQ-2 (score 0-6)	Ordinal (0: 0, 1: 1-2, 2: 3-6)
Explanatory variable	Unemployment	Status of unemployment	Binary (employed/unemployed)
	UIF	Whether received UIF in 2020	Binary (no/received)
	COVID-19 SRD	Whether received COVID-19 SRD in 2020	Binary (no/received)
	Age	Working age	Continuous (18-64)
	Age squared	Age squared/100	Continuous
	Sex (male)	Sex	Binary (female/male)
	Race	Population group	Category (African/Black, Colored, Asian/Indian, White)
	Education	Highest education attained	Category (up to primary, up to secondary, matric, tertiary)
	Lack of money to buy food	Household run out of money to buy food	Binary (no/yes)
	Marital status	Married partner	Binary (no/yes)
	Kids	Whether have residents who are less than age 17	Binary (no/yes)
	Household size	Number of household members	Continuous
	Urbanicity	Place of residence	Binary (rural/urban)
Control variable	Dwelling	Type of dwelling	Category (a house, traditional house, informal house, other)
	Access to water	Piped or tap water inside house or yard	Binary (no/yes)
	Social support	Food or shelter received from the government, NGO/church, or community	Binary (no/yes)
	Hunger	Experience of hunger among household members in last 7 days	Binary (no/yes)
	COVID-19 risk	Perceived risk of getting coronavirus	Binary (no/yes)
	Chronic condition	HIV/AIDS, tuberculosis, lung or heart conditions in May/June 2020	Binary (no/yes)
	Self-rated health 2020	5-level Likert scale of health in May/June 2020	Ordinal (excellent, very good, good, fair, poor)
	Medical aid	Medical aid for hospital or doctor visits in 2020	Binary (no/yes)

Table 1. List of variables
3.4. Method of analysis

This study fitted a logistic model to estimate the effects of unemployment and receiving unemployment benefits on health on two scales: self-rated health and the experience of depression. First, the study conducted logistic regression with cross-sectional data to estimate the odds ratio of reporting self-rated health as poor. Secondly, a generalized ordered logit model was used to estimate the (assumed) proportional odds ratio for screening people in a depressive mood. It is an alternative but superior model to the ordered logit model that allows researchers to use sampling weight (Williams, 2016). Each analysis was conducted twice to estimate the effect of unemployment and unemployment benefits. Analysis models are as below:

$$\ln\left[\frac{P_r(Y=1)}{P_r(Y=0)}\right] = Y_i = \beta_0 + \beta_1 Unemployment \ benefits_{i,t-1} + C_i + \varepsilon_i \dots \dots \dots (2)$$

$$\ln\left[\frac{P_r(Y \le j)}{1 - P_r(Y \le j)}\right] = Y_i = \beta_0 + \beta_1 Unemployment \ benefits_{i,t-1} + C_i + \varepsilon_i \dots \dots \dots (4)$$

where $i = observation \ and \ j = 0,1$

 Y_i : dependent variables (self-rated health or depression in 2021) $Unemployment_i$: employment status as unemployment in 2021 $Unemployment \ benefits_{i,t-1}$: receipt of UIF or COVID-19 SRD in 2020 (t-1) C_i : control variables ε_i : error term

Odds of Y_i (self-rated health) in the result of logistic regression is defined as the ratio of the probability of reporting poor health ($Y_i = 1$) and the probability of reporting good health ($Y_i = 0$). The odds ratio in (1) can be obtained by exponentiating the logit coefficients and interpreted as: a one unit increase in the predictor variable (or being unemployed) will be reflected in the odds increase. In other words, unemployment will increase the odds of reporting poor self-rated health as much as the odds ratio relative to employment. The odds ratio in (2) can also be obtained in the same way. It is interpreted as for a one unit increase in the predictor variable (or received unemployment benefits in the preceding year), the odds of reporting poor self-rated health by odds ratio larger is expected.

For the other Y_i (depression), odds ratios can be obtained by exponentiating the ordered logit coefficients from the generalized ordered logistic regression. The interpretation of this odds ratio is that for a one unit increase in the predictor variable, being unemployed in (3) and receiving unemployment benefits in (4), the odds of being in a particular category of the PHQ-2 scale is likely by the odds ratio proportionally. The critical assumption in this model is that odds are proportional or parallel between ordinal scales of PHQ-2. Because the original scale of PHQ-2 in the dataset and another array of PHQ-2 in the other study (Posel et al., 2021) violated the parallel assumption with predictor variables used in this study, this study regrouped the PHQ-2 scale in three ordinal scales as 0 (PHQ-2 score 0), 1 (PHQ-2 score 1 and 2), and 2 (PHQ-2 score 3 to 6). The analysis process tested the new scale with an adjusted Wald test⁽⁶⁾, and the result met the proportional/parallel assumption.

One should consider the difference among unemployed people in terms of receiving unemployment benefits. In spite of the theoretical background between unemployment benefits and health, there is a systemic difference among unemployed people because people who receive unemployment benefits tend to have a more favorable socioeconomic background than their counterparts (unemployed people who are not subject to receiving benefits). Recently, an alternative method – propensity score matching (PSM) – has been used to mitigate the effects of underlying characteristics between recipients and non-recipients of benefit (Cylus & Avendano, 2017; Faraz Vahid Shahidi et al., 2019; Shahidi & Parnia, 2021). This study has tried to match the socioeconomic background of UIF recipients

⁽⁶⁾ Stata command 'gologit2' was used to carry out the test with autofit option (Williams, 2016), and p-value was 0.1820, which indicates that the final model does not violate the proportional odds or parallel lines assumption.

and non-recipients to shed light on the association between unemployment benefits and health. However, this study decided not to conduct PSM because of homogeneous individual profiles between the two groups (see Table 5 and 6 in Chapter 4). Thus, the matching can tarnish its primary intention and risk losing massive observations. South Africa's UIF-TERS explains some part of the homogeneity of the underlying background in the two groups. Because the government has extended its scope to all workers, regardless of their registration in UIF, receipt of UIF-TERS was favored by workers who were social and economically vulnerable as the benefits continued – albeit not the only explanation (Köhler & Hill, 2021). Although males and formally employed workers benefited from UIF-TERS, shares of black Africans, lower wage workers, and less-skilled individuals increased over time (Köhler & Hill, 2021). Moreover, two-thirds of UIF contributors received UIF-TERS benefits during the pandemic (Köhler & Hill, 2021), resulting in fewer UIF claimers, not like the surge in UIF claimers during the previous recession in 2009 (Bhorat & Tseng, 2011). Hence, heterogeneity between UIF recipients and non-recipient might have been diluted during the pandemic period. In addition, it is likely that socioeconomically favored people want to say in employment rather than receive unemployment benefits to avoid risking their accumulated UIF credit.⁽¹⁰⁾ For example, degree holders are less likely to claim UIF benefits because they are better off and have a relatively higher opportunity for employment (Bhorat & Tseng, 2011). Especially, skilled people worked remotely without risking their employment during the pandemic. For those reasons, this study conducted logistic model regression without matching individual characteristics.

Unlike a contributory UIF, COVID-19 SRD is non-contributory social assistance that targets vulnerable unemployed people from the social safety net during the pandemic. People who applied for and received COVID-19 SRD were economically poorer than their counterparts in 2020 (Bhorat & Köhler, 2020), implying that the

⁽¹⁾ By putting employer-employee's contribution to the risk-sharing fund (UIF), employees earn a credit for every six days in their job, which is entitled to claiming unemployment benefits when they lost their job.

assistance reached vulnerable people during the pandemic recession successfully. As the recipients of the COVID-19 SRD showed poorer socioeconomic backgrounds than the others, PSM is not necessary to estimate the effect of COVID-19 SRD on health in a conservative manner.

This study conducted a series of analyses: descriptive statistical analysis, correlation analysis, logistic regression, generalized ordered logistic regression, and goodness of fit test for each analytical model. This study completed analyses using Stata/MP 16.1.

Chapter 4. Study Results

4.1. Results of Descriptive Statistics

Tables of descriptive statistics disaggregated data by employment status and types of unemployment benefits. They compared divided groups with F statistics and t-values. The corrected F statistic was developed by using Pearson χ^2 statistic (Rao & Scott, 1981; Rao & Scott, 1984) to test the interdependence between characteristics of samples, considering the survey sampling weight. This statistic was proved to have good properties and has been recommended for use in all situations (Sribney, 1999). Stata command 'svy: tabulate' was used for this process (StataCorp, 2021). The adjusted Wald test compared whether means are equal between groups for continuous variables with F statistics, considering sampling weight.

Table 2 shows the demographic characteristics of the sample from NIDS-CRAM wave 5. This study obtained 4,205 samples, equivalent to 26,773,468 populations, when applied sampling weight. The unemployment rate (34.43%) is similar to the official unemployment rate from January to March 2021 (32.6%), even though this study used the expanded definition, including people available to work but who did not look for work. As Daniels et al. (2021) noted, this is because of the responsive nature of the NIDS-CRAM data that indicates the immediate impact of the lockdown regulations on the labor market. The government of South Africa eased lockdown restrictions in early 2021, a reference period of NIDS-CRAM wave 5, following the end of the second wave of the COVID-19 pandemic.

All demographic characteristics in Table 2 showed statistically significant differences (p<0.01) between the employed and the unemployed South African in March 2021. Unemployed people were more likely to be women, black Africans, and youth. For example, 88.51% of the unemployed reported as black African, whereas 78.14% were employed. Considering that over 80% of the population were black Africans in 2021 (Statistics South Africa, 2021a), they were

slightly underrepresented in the job market, and more likely to be unemployed. In addition, people without a job were more likely not to get married, so they were less likely to have children. They were also more likely to live in the traditional or informal house with larger families in the rural area.

Total	Unemployed	Employed			
N=4,205	N=2,601	N=1,604	E statistic		
P=26,773,467	P=17,554,566	P=9,218,901	F statistic		
(100%)	(65.57%)	(34.43%)			
Sex					
Female	44.03%	59.86%	36.18***		
Male	55.97%	40.14%			
Age			51 72***		
mean	38.68	34.42	51.75		
Race					
African/Black	78.14%	88.51%			
Colored	9.91%	8.04%	9.64***		
Asian	2.33%	1.59%			
White	9.63%	1.86%			
Marriage					
No	49.51%	63.76%	31.90***		
Yes	50.49%	36.24%			
Kids					
No	35.1%	28.24%	8.12***		
Yes	64.59%	71.76%			
Household size			21 60***		
Mean	4.36	5.17	51.09		
Urbanicity					
Rural	21.16%	26.71%	8.27***		
Urban	78.84%	73.29%			
Dwelling					
House/flat	80.83%	73.04%			
Traditional	6.45%	9.82%	5.54***		
Informal	10.59%	14.97%			
Other	2.13%	2.17%			

Table 2. Demographic characteristics of the sample

N: number of observations; P: population size; %: proportion *** p<0.01, ** p<0.05, * p<0.1

Table socioeconomic 3 shows the and health-related characteristics of the sample. Likewise, most of them were significantly different in employment status (p<0.01), except for receiving social support, PHQ-2, and chronic condition. Although the proportion of the receipt of social support was 2.34 percent points larger among unemployed people, it was not statistically significant (F statistic=2.04, p=0.15). Unemployed people were more likely to attain their education up to the secondary level and much less likely to be graduated from tertiary education. Almost half of the unemployed people (46.55%) lacked the money to buy food, and almost a quarter of them (23.11%) went hunger in the last seven days. A quarter of the unemployed people (25.08%) had less access to water within their residence, whereas 16.00% of employed people reported limited access to tap water.

In terms of health-related characteristics, unemployed people were more likely to report their health as poor and perceived a greater risk of contracting coronavirus. Unemployed people had 3.1 percent points the larger proportion of chronic conditions than their counterparts, yet this was not statistically significant (F statistic=2.21, p=0.14). The PHQ-2 showed a similar trend. Unemployed people experienced more depressive moods than the employed, but it was not statistically meaningful (F statistic=1.60, p=0.20). Unemployed people also lacked medical aid that covers visiting hospitals or doctors. For example, only 10.21% of unemployed people were uninsured by medical aid, whereas 25.09% of employed people were insured. The unequal registration of medical schemes can be attributed to the considerable gap in the share of medical aid among ethnic groups, 9.9% in black Africans compared to 72.9% in White as of 2018 (Statistics South Africa, 2018).

-			
Total	Employed	Unemployed	
N=4,205	N=2,601	N=1,604	F statistic
P=26,773,467	P=17,554,566	P=9,218,901	i statistic
(100%)	(65.57%)	(34.43%)	
Education			
Up to primary	9.24%	8.03%	
Up to secondary	34.02%	44.6%	10.12***
Matric	22.51%	25.85%	
Tertiary	34.23%	21.52%	
Money for food			
No	72.56%	53.45%	70.05***
Yes	27.44%	46.55%	
Water access			
No	16.00%	25.08%	21.60***
Yes	84.00%	74.92%	
Social support			
No	89.47%	87.13%	2.04
Yes	10.53%	12.87%	
Hunger			
No	88.2%	76.89%	43.49***
Yes	11.8%	23.11%	
Self-rated health			
Good	78.92%	73.94%	5.11**
Poor	21.08%	26.06%	
PHQ-2 (0-6)			
0 (0)	44.76%	40.54%	1 40
1 (1-2)	28.87%	29.76%	1.00
2 (3-6)	26.37%	29.69%	
COVID-19 risk			
No	49.54%	64.65%	28.36***
Yes	50.46%	35.35%	
Chronic condition			
No	84.38%	81.28%	2.21
Yes	15.62%	18.72%	
Medical aid			
No	74.91%	89.79%	39.39***
Yes	25.09%	10.21%	

Table 3. Socioeconomic and health-related characteristics of the sample

N: number of observations; P: estimated population size; %: proportion *** p<0.01, ** p<0.05, * p<0.1

Table 4 explored the difference in demographic characteristics between recipients and non-recipient of UIF and COVID-19 SRD among unemployed people. In terms of UIF, there were differences in 3 characteristics: age, household size, and types of dwellings. People who received UIF in 2020 were older (p=0.02) and more likely to live with small families (p=0.01). They also tend to not live in a traditional house, but more in an ordinal form of a house or informal residence (p=0.05). UIF recipients seemed to be male, black African or White, married, and living with children in the urban setting, but those were not statistically different. It was shown that women received more UIF than men proportionally at 53.5%. However, the proportion of not receiving UIF is overly concentrated on women at 60.14%. Hence, this can be interpreted as women being less likely to receive UIF than men because there are more unemployed women who were not covered by social assistance. Still, it was not statistically significant, perhaps due to the small size of the UIF recipients (N=68). COVID-19 SRD recipients were more likely to be male (p<0.01) and living without children (p<0.05). It is partially aligned with the result of the COVID-19 SRD assessment that people who successfully applied and were approved for the grant were men (67.9%) and below 34 years old (61.3%) (Department of Social Development, 2021b). This age and gender imbalance can be attributed to Child Support Grant (CSG) that excluded young women with children from COVID-19 SRD eligibility.

T T 1	U	IF		COVID		
Unemployment	Yes	No	-	Yes	No	
N=1,604	68	1,536	- F	359	1,245	- F
P=9,218,901	389,960	8,828,941	statistic	2,196,864	7,022,037	statistic
100%	4.23%	95.77%		23.83%	76.17%	
Sex						
Female	53.5%	60.14%	0.40	37.88%	66.73%	39.24***
Male	46.5%	39.86%		62.12%	33.27%	
Age			5 32**			2 12
mean value	39.41	34.20	5.52	33.20	34.81	2.42
Race						
African/Black	91.62%	88.37%		90.15%	87.99%	
Colored	4.97%	8.18%	0.34	8.04%	0.77%	0.87
Asian	0%	1.66%		1.59%	2.09%	
White	3.42%	1.79%		1.86%	2.22%	
Marriage						
No	51.41%	64.3%	1.94	70.83%	61.55%	3.78**
Yes	48.59%	35.7%		29.17%	38.45%	
Kids						
No	25.81%	28.35%	0.07	35.46%	25.98%	4.39**
Yes	74.19%	71.65%		64.54%	74.02%	
Household size			6 07**			0.64
Mean	4.32	5.21	0.07	4.98	5.23	0.04
Urbanicity						
Rural	19.98%	27.01%	0.95	27.58%	26.44%	0.09
Urban	80.02%	72.99%		72.42%	73.56%	
Dwelling						
House/flat	77.61%	72.84%		76.71%	71.89%	
Traditional	0.11%	10.25%	3.28**	9.62%	9.89%	1.44
Informal	21.45%	14.68%		10.76%	16.28%	
Other	0.84%	2.23%		2.91%	1.94%	

Table 4. Demographic characteristics of the unemployment sample

N: number of observations; P: estimated population size; %: proportion *** p<0.01, ** p<0.05, * p<0.1

Table socioeconomic and health-related 5 presents characteristics of unemployed people, disaggregated by types of unemployment benefits. There were no notable differences in education (p=0.64) and money for buying foods (p=0.14) between groups of UIF. However, people who received UIF were less likely to receive social support (p=0.07) and more likely to experience depressive symptoms (p=0.08) and have a medical aid scheme (p=0.01). As aforementioned in Chapter 3, Tables 4 and 5 show homogeneity between recipients and non-recipients of unemployment benefits except few characteristics. It contradicts the general expectation that recipients of unemployment benefits exhibit better socioeconomic backgrounds than their counterparts. The only different characteristic in the COVID-19 SRD is that the recipient was more likely to experience hunger than the non-recipient (p=0.01).

TT 1 /	U	IF		COVID-19 SRD				
Unemployment	Yes	No	F	Yes	No	E		
N=1,604	68	1,536	- F	359	1,245	Г statistic		
P=9,218,901	389,960	8,828,941	statistic	2,196,864	7,022,037	statistic		
100%	4.23%	95.77%		23.83%	76.17%			
Education								
Up to primary	6.54%	8.09%		8.83%	7.78%			
Up to secondary	52.07%	44.28%	0.52	46.63%	43.96%	0.74		
Matric	18.5%	26.17%		27.36%	25.38%			
Tertiary	22.89%	21.46%		17.18%	22.88%			
Money for food			2.22			0.46		
No	40.61%	54.02%	2.23	51.38%	54.1%	0.40		
Yes	59.39%	45.98%		48.62%	45.9%			
Water access								
No	18.58%	25.37%	1.02	22.78%	25.8%	0.66		
Yes	81.42%	74.63%		77.22%	74.2%			
Social support								
No	95.73%	86.75%	3.39*	87.59%	86.99%	0.04		
Yes	4.27%	13.25%		12.41%	13.01%			
Hunger								
No	72.65%	77.08%	0.27	70.53%	78.88%	4.74***		
Yes	27.35%	22.92%		29.47%	21.12%			
Self-rated health								
Good	64.88%	74.34%	0.97	74.18%	73.87%	0.01		
Poor	35.12%	25.66%		25.82%	26.13%			
PHQ-2 (0-6)								
0 (0)	30.82%	40.97%	2 56*	42.93%	39.80%	0.74		
1 (1-2)	19.5%	30.21%	2.30	34.49%	29.22%	0.74		
2 (3-6)	49.68%	28.81%		25.58%	30.98%			
COVID-19 risk								
No	65.05%	64.63%	0.00	65.86%	64.25%	0.14		
Yes	35.35%	35.37%		34.14%	35.75%			
Chronic condition								
No	68.4%	81.92%	2.00	84%	80.46%	0.86		
Yes	31.6%	18.08%		16%	19.54%			
Medical aid								
No	75.93%	90.49%	7.74***	88.91%	90.06%	0.10		
Yes	24.07%	9.51%		11.09%	9.94%			

Table 5. Socioeconomic and health-related characteristics of the unemployment sample

N: number of observations; P: estimated population size; %: proportion *** p<0.01, ** p<0.05, * p<0.1

4.2. Result of correlation test

conducting multivariate regression Before analysis, the correlation tests were conducted to identify whether the explanatory variables have potential correlations between them. The Table 6 correlation matrix displayed that there were no correlation coefficients with strong relationship between variables except age and age squared (-0.986). The three highest correlation coefficients are relationships between age and age squared (-0.986), hunger and money for food (-0.490), and COVID-19 SRD and sex (-0.210). There was no multicollinearity between regression variables as none of the variance inflation factor (VIF) exceed 10 except age (65.69) and age squared (150.42). The highest VIF was 5.54 after age and age squared. Considering the result of correlation tests, the study included all the selected variables for regression analysis.

Note: urbani medic	20	19	18	17	16	15	14	13	12	=	10	9	æ	7	6	S	4	з	2	1		Tabl
1) uner icity, 13 al aid	0.023	-0.026	-0.047	0.070	-0.015	-0.022	0.034	-0.015	0.027	-0.071	0.003	-0.149	0.045	0.020	0.110	-0.104	0.131	-0.037	-0.099	1.000	1	e 6. C
nploym 3) type (0.066	-0.018	-0.035	0.024	-0.029	-0.037	0.013	0.002	0.040	0.003	0.008	0.032	0.020	0.037	-0.210	-0.086	0.088	0.092	1.000		2	orrel
ent, 2) of dwell	0.007	0.001	0.014	0.001	-0.007	0.030	-0.017	-0.032	0.010	-0.019	-0.023	0.005	0.011	-0.003	-0.022	0.055	-0.056	1.000			3	ation]
COVID ing, 14)	-0.007	-0.032	-0.131	-0.089	-0.019	0.015	0.023	-0.025	0.055	0.042	-0.139	-0.074	-0.034	0.041	0.040	-0.986	1.000				4	Matrix
-19 SRI) water a	-0.005	0.028	0.103	0.075	0.019	-0.020	-0.022	0.032	-0.050	-0.033	0.093	0.063	0.080	-0.050	-0.024	1.000					S	, .
D, 3) UI access, 1	-0.076	0.010	0.148	0.001	0.010	0.013	-0.021	0.022	0.000	0.131	-0.093	0.024	0.067	-0.004	1.000						6	
F, 4) ag 15) socia	-0.052	0.104	0.025	-0.064	0.074	-0.004	-0.061	0.035	-0.123	0.006	-0.052	-0.070	0.009	1.000							7	
e, 5) age al suppc	-0.155	0.045	0.080	-0.093	0.038	0.043	-0.096	0.071	0.015	0.047	0.027	0.044	1.000								8	
e square ort, 16) l	0.030	-0.02	0.005	-0.02	-0.49	-0.07;	0.023	-0.03	0.027	-0.00	-0.02	1.000									9	
d, 6) se 1unger,	-0.09	2 -0.02	0.018	0 -0.03	0 0.044	2 0.020	-0.00	3 -0.00	0.021	5 0.031	1 1.000	•									10	
x, 7) rac 17) CO	2 0.05	5 0.01	3 0.00	5 0.00	4 0.00	-0.00	4 0.11	6 0.09	0.06	1 1.00	0										11	
xe, 8) ed VID-19	9 0.01	3 0.04	2 0.00	7 -0.02	9 -0.02	9 -0.01	1 -0.23	7 -0.09	0 1.00	0											12	
ucation, risk, 18	7 0.05	8 -0.02	6 0.00	2 0.01	6 -0.03	9 -0.01	8 0.13	6 1.00	0												13	
) chroni	2 -0.0	2 0.03	6 0.03	6 -0.0	5 0.03	2 0.01	5 1.00	0													14	
iey for f ic condi	55 0.04	2 -0.0	8 -0.0	0.04	4 -0.0	9 1.00	õ														15	
òod, 10 tion, 19	15 0.0	08 -0.0	01 0.0	10 0.0	62 1.0	8															1	
) marria) self-ra	52 -0.0	29 0.0	20 -0.0	05 1.0	00																5 1	
ıge, 11) ted heal)87 -0.(02 -0.0	01 1.0	00																	7 1	
househ lth in 20)74 0.()21 1.0	00																		8 1	
old size)20, 20)	039 1.	000																			9	
, 12)	000																				20	

4.3. Regression Results

Table 7 presents the regression result of the effects of unemployment on self-rated health and depression. The analysis revealed that unemployment was negatively associated with self-rated health and the experience of depressed moods. For the unemployed, the odds ratio of poor self-rated health is 1.335 (p=0.065), meaning that either being unemployed has 1.335 times the odds of reporting poor self-rated health or unemployment increased the odds by 33.5% at the 10% level of statistical significance (p=0.065), relative to employed people. For PHQ-2, unemployment increased the odds of experiencing depressive disorder by 13.8% more than people in employment, yet not statistically meaningful (OR=1.138, p=0.237).

Demographic characteristics showed mixed results. Although statistically insignificant, people were less likely to report either poor health or the experience of depressive moods as their age increases because the odds ratio is less than 1 (OR=0.976, p=0.557). On the other hand, the age squared showed an odds ratio greater than 1 (OR=1.041, p=0.444), indicating that health outcomes will become negative at a certain point of age. As the odds ratio of the race was far less than 1, colored (OR=0.307, p=0.002), Asian/Indian (OR=0.224, p=0.010), and White (OR=0.212, p=0.001) were less likely to report poor self-rated health than black Africans. On the other hand, this trend was reversed in depression, indicating that non-black Africans experienced a more significant depressive disorder than black Africans during the COVID-19 pandemic. The odds of reporting poor self-rated health for people living in urban areas were 1.316 times larger than those in rural settings (OR=1.316, p=0.068). The only statistically significant variable in the type of dwellings variable was the informal type. People living in the informal house, such as a shack, were more likely to experience depressive moods by 44.8% than people living in the ordinal house (OR=1.448, p=0.019).

For socioeconomic characteristics, people who attained a higher level of education than primary education were more likely not to report their self-rated health as poor or experience of depressive moods, but all of them were not significant (up to secondary OR=0.840, p=0.467; matric OR=0.837, p=0.466; tertiary OR=0.668, p=0.130). People who lacked the money to buy food were more likely to experience depressive moods (OR=1.396, p=0.051). Access to water and receipt of social support were not meaningful.

For health-related outcomes, people who were gone hunger and perceived COVID-19 as a great risk showed a significant possibility of negative consequences for health. The odds ratios were larger in self-rated health as 2.022 for hunger (p=0.000) and 1.919 for COVID-19 risk (p=0.000) than PHQ-2 as 1.512 for hunger (p=0.004) and 1.594 for COVID-19 risk (p=0.000). The differences in odds ratios implied that the risk of both hunger and the perceived risk of COVID-19 posed a greater threat to self-rated health than the experience of depressive moods. Having chronic diseases, such as HIV/AIDS, tuberculosis, and lung or heart conditions, was associated with poor self-rated health (OR=2.118, p=0.000) level of self-rated health in the preceding year.

Variables	Poor	self-rated h	ealth		PHQ-2†	
variables	OR	P-value	SE	OR	P-value	SE
Unemployed	1.335*	0.065	(0.209)	1.138	0.237	(0.124)
Age	0.976	0.557	(0.041)	0.948	0.147	(0.035)
Age squared	1.041	0.444	(0.056)	1.049	0.289	(0.048)
Male	0.884	0.390	(0.127)	0.916	0.443	(0.105)
Race (ref: African/B	Black)					
Colored	0.307***	0.002	(0.116)	3.076***	0.000	(0.519)
Asian/Indian	0.224***	0.010	(0.130)	1.032	0.938	(0.423)
White	0.212***	0.001	(0.103)	2.148***	0.002	(0.526)
Education (ref: up t	o primary)					
Up to secondary	0.840	0.467	(0.202)	0.794	0.240	(0.156)
Matric	0.837	0.466	(0.204)	0.884	0.549	(0.181)
Tertiary	0.668	0.130	(0.178)	0.781	0.233	(0.162)
Money for food	1.015	0.940	(0.198)	1.396*	0.051	(0.239)
Marriage	0.950	0.742	(0.148)	0.978	0.856	(0.120)
Household size	1.002	0.930	(0.022)	0.975	0.172	(0.018)
Urbanicity	1.316*	0.068	(0.198)	0.845	0.194	(0.109)
Dwelling (ref: a hou	se or flat)					
Traditional type	1.012	0.954	(0.216)	0.770	0.203	(0.158)
Informal type	0.751	0.188	(0.163)	1.448^{**}	0.019	(0.227)
Other	1.055	0.884	(0.389)	1.032	0.904	(0.268)
Water access	1.084	0.606	(0.168)	0.946	0.638	(0.112)
Social support	1.006	0.979	(0.213)	1.168	0.434	(0.232)
Hunger	2.022***	0.000	(0.355)	1.512***	0.004	(0.218)
Covid risk	1.919***	0.000	(0.259)	1.594***	0.000	(0.168)
Chronic condition	2.118***	0.000	(0.324)	1.237	0.131	(0.174)
SRH in 2020 (ref: E	xcellent)					
Very good	0.940	0.793	(0.222)	0.871	0.439	(0.155)
Good	1.343	0.165	(0.285)	0.930	0.683	(0.165)
Fair	2.508^{***}	0.000	(0.591)	1.070	0.712	(0.196)
Poor	3.237***	0.000	(0.895)	1.535^{*}	0.063	(0.353)
Medical aid	1.271	0.196	(0.236)	1.186	0.283	(0.189)
Observations		3,199			3,183	

Table 7. Regression result of the effect of unemployment on selfrated health and $\rm PHQ\text{-}2$

[†]Only statistically significant but different variables between ordinal scales were listed if the parallel lines assumption was violated in PHQ-2

Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1

The effects of UIF on health outcomes are presented in Table 8. Surprisingly, UIF was insufficient to the mitigate negative health consequences of unemployment. The odds ratio is 1.794 for UIF recipients compared to non-recipients in 2020, meaning that receiving UIF in the preceding year increased the odds of reporting poor health by 79.4%. However, it is statistically insignificant (OR=1.794, p=0.227). The PHQ-2 needs a different interpretation as the results were presented in the ordered odds ratio.^(®) For example, the odds of being in groups 1 and 2 (viz. PHQ-2 score over 1) are 1.750 times larger than being in group 0 for UIF recipients (OR=1.750, p=0.270), and the odds of being in group 2 (viz. PHQ-2 score over 3) are 3.172 times as large as the odds of being in group 0 or 1 (viz. PHQ-2 scoring less than 3) for UIF recipients (OR=3.172, p=0.022), relative to nonrecipients. Although partially significant, this implied that unemployed people who received UIF in 2020 were more likely to experience depressive disorder in 2021, which is counter-intuitive.

However, the short lagged time of unemployment benefits in this study urged the need for further analysis. Therefore, the study conducted an additional analysis by applying different lagged times of receiving UIF of each wave to understand in depth. Table 9 shows the result of additional analysis. Both odds ratios of health outcomes were decreased below 1 in the first wave, indicating that receiving UIF at wave 1 (April 2020) was positively associated with self-rated health and depression measured at wave 5 (April/May 2021). Twelve months was the lagged span between two points of time. The odds of reporting poor self-rated health was the only outcome reduced by 73.7% at a statistically significant level (OR=0.263, p=0.050). The result of wave 2 to 5 showed that receiving UIF with a relatively shorter lagged time (1-10 months) was insufficient to make a positive association with both self-rated health and the experience of depressive moods.

^(B) 0 (PHQ-2 score 0), 1 (PHQ-2 score 1 and 2), and 2 (PHQ-2 score 3 to 6)

	Poor	self-rated h	ealth		PHO-2†	
Variables	OR	P-value	SE	OR	P-value	SE
UIF	1.794	0.227	(0.868)	1.750	0.270	(0.886)
			. ,	3.172**	0.022	(1.597)
Age	0.975	0.663	(0.056)	0.952	0.415	(0.058)
Age squared	1.034	0.657	(0.077)	1.075	0.387	(0.086)
Male	1.032	0.887	(0.226)	0.898	0.546	(0.160)
Race (ref: African/I	Black)		× /			. ,
Colored	0.442	0.111	(0.226)	2.508***	0.001	(0.717)
Asian/Indian	0.482	0.356	(0.380)	0.887	0.820	(0.468)
White	0.562	0.529	(0.513)	26.098***	0.004	(29.080)
				1.446	0.540	(0.870)
Education (ref: up t	to primary)					
Up to secondary	0.953	0.903	(0.375)	0.776	0.476	(0.276)
Matric	0.755	0.538	(0.345)	0.856	0.678	(0.320)
Tertiary	0.428^{*}	0.079	(0.206)	0.784	0.571	(0.336)
Lacked food	0.938	0.815	(0.254)	1.393	0 100	(0.359)
money		0.015			0.199	
Marriage	0.950	0.819	(0.212)	1.000	1.000	(0.178)
Household size	0.999	0.969	(0.027)	1.006	0.803	(0.025)
				1.052^{*}	0.080	(0.030)
Urbanicity	1.317	0.195	(0.280)	1.296	0.193	(0.258)
Dwelling (ref: a hou	ise or flat)					
Traditional type	1.095	0.765	(0.332)	0.513*	0.053	(0.176)
				0.766	0.408	(0.247)
Informal type	1.022	0.948	(0.336)	1.314	0.256	(0.315)
Other	1.747	0.279	(0.899)	1.496	0.317	(0.601)
Water access	1.239	0.395	(0.313)	1.002	0.991	(0.189)
Social support	1.288	0.438	(0.420)	1.457	0.163	(0.393)
Hunger	2.099***	0.007	(0.571)	1.557**	0.042	(0.338)
Covid risk	2.456***	0.000	(0.533)	1.640***	0.007	(0.300)
Chronic condition	2.358***	0.001	(0.607)	1.207	0.418	(0.279)
SRH in 2020 (ref: E	xcellent)					
Very good	1.141	0.743	(0.457)	1.083	0.838	(0.423)
Good	1.222	0.586	(0.449)	0.959	0.907	(0.341)
Fair	1.845	0.185	(0.852)	1.231	0.531	(0.407)
Poor	2.630**	0.034	(1.197)	2.872***	0.009	(1.154)
				1.101	0.831	(0.495)
Medical aid	0.763	0.405	(0.248)	0.895	0.704	(0.262)
Observations		1,196			1,188	

Table 8. Regression result of the effect of the UIF on self-rated health and PHQ-2

†Only statistically significant but different variables between ordinal scales were listed if the parallel lines assumption was violated in PHQ-2

Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1

Survey wave	Poor	self-rated h	ealth		PHQ-2	
(Lagged months)††	OR	P-value	SE	OR	P-value	SE
Wave 1 (12)	0.263**	0.050	(0.178)	0.582	0.470	(0.436)
Wave 2	2.453	0.121	(1.418)	1.643	0.481	(1.158)
(10)				4.142**	0.042**	(2.890)
Wave 3 (6)	1.562	0.612	(1.375)	1.519	0.562	(1.095)
Wave 4 (3)	10.826***	0.000	(7.355)	0.751	0.719	(0.597)
Wave 5 (1)	1.990	0.154	(0.959)	1.320	0.598	(0.694)
Observations		1,196			1,188	

Table 9. Regression result of UIF on health outcomes by waves

[†]Only statistically significant but different variables between ordinal scales were listed if the parallel lines assumption was violated in PHQ-2

††Lagged months between the time of receiving UIF in each wave and the time of measuring health outcomes at wave 5. There was a month gap between two points of times in wave 5 due to the different reference times of survey questions.

Standard error in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10 shows the regression result of the COVID-19 SRD. The result indicated that receiving COVID-19 SRD reduced the odds of reporting poor self-rated health by 43.9% (OR=0.561, p=0.037) and of experiencing depressive disorder by 16.9% (OR=0.831, p=0.384), yet only self-rated health was statistically significant (p=0.037). Nonetheless, the odds ratio of both reporting poor health and experiencing depressive disorder was less than 1. The result revealed that the adverse health outcome was less likely to occur if COVID-19 SRD were given to the unemployed population during the COVID-19 pandemic.

Further analysis was conducted to identify the effect of COVID-19 SRD by selected socioeconomic characteristics. Table 11 displays the result of the regression by race, age, education, and sex. The result showed that COVID-19 SRD reduced the odds of reporting poor self-rated health in people who are aged 25 to 34 years (OR=0.344, p=0.058) and 55 to 64 years (OR=0.013, p=0.039), attained the level of education up to matric (OR=0.297, p=0.053), black (OR=0.523, p=0.012), and male (OR=0.383, p=0.012) relative to each of the other groups or their counterparts. In terms of depression, male recipients and a group aged 45 to 54 years experienced reduced odds of depressive moods weakly significantly at a 10% level (OR=0.578, p=0.071).

X 7	Poor	self-rated h	ealth		PHQ-2			
Variables	OR	P-value	SE	OR	P-value	SE		
COVID-19 SRD	0.561**	0.037	(0.155)	0.831	0.384	(0.177)		
Age	0.965	0.540	(0.055)	0.943	0.339	(0.057)		
Age squared	1.042	0.444	(0.056)	1.049	0.289	(0.048)		
Male	1.205	0.499	(0.297)	0.955	0.815	(0.187)		
Race (ref: African/B	lack)							
Colored	0.451	0.110	(0.224)	2.43***	0.002	(0.701)		
Asian/Indian	0.376	0.229	(0.305)	0.789	0.661	(0.426)		
White	0.484	0.428	(0.443)	24.129***	0.004	(26.893)		
Education (ref: up t	o primary)							
Up to secondary	0.974	0.944	(0.374)	0.789	0.513	(0.285)		
Matric	0.781	0.578	(0.346)	0.866	0.703	(0.325)		
Tertiary	0.433*	0.071	(0.200)	0.802	0.606	(0.342)		
Money for food	0.944	0.831	(0.253)	1.403	0.193	(0.365)		
Marriage	0.930	0.748	(0.210)	0.988	0.945	(0.180)		
Household size	0.991	0.787	(0.034)	1.000	0.984	(0.024)		
Urbanicity	1.351	0.153	(0.284)	1.308	0.177	(0.259)		
Dwelling (ref: a hou	se or flat)							
Traditional type	1.067	0.829	(0.319)	0.567	0.106	(0.199)		
Informal type	0.985	0.964	(0.319)	1.309	0.259	(0.313)		
Other	1.839	0.253	(0.979)	1.533	0.278	(0.603)		
Water access	1.231	0.389	(0.297)	1.007	0.969	(0.190)		
Social support	1.284	0.441	(0.416)	1.429	0.189	(0.387)		
Hunger	2.240***	0.004	(0.621)	1.571**	0.046	(0.354)		
Covid risk	2.494***	0.000	(0.543)	1.622***	0.008	(0.294)		
Chronic condition	2.451***	0.001	(0.647)	1.238	0.382	(0.303)		
SRH in 2020 (ref: E	xcellent)							
Very good	1.057	0.890	(0.422)	1.089	0.821	(0.410)		
Good	1.175	0.659	(0.430)	0.977	0.946	(0.337)		
Fair	1.736	0.232	(0.800)	1.226	0.525	(0.394)		
Poor	2.573**	0.031	(1.124)	2.883***	0.008	(1.146)		
Medical aid	0.793	0.476	(0.258)	0.958	0.886	(0.289)		
Observations		1,196			1,188			

Table 10. Regression result of the effect of the COVID-19 SRD on self-rated health and PHQ-2

Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1

Sem	m1.0 mov.m	Poor	self-rated h	ealth		PHQ-2			
Sam	pie group	OR	P-value	SE	OR	P-value	SE		
Age	18-24	1.309	0.571	0.622	0.882	0.778	0.394		
	25-34	0.344	0.058*	0.194	0.919	0.857	0.433		
	35-44	0.401	0.174	0.263	0.648	0.269	0.254		
	45-54	0.490	0.252	0.305	0.319	0.062*	0.195		
Edu-	55-64†	0.013	0.039**	0.027	0.622	0.691	0.742		
	Primary	0.282	0.118	0.228	1.797	0.486	1.511		
cation	Secondary	0.609	0.278	0.278	0.641	0.172	0.209		
	Matric	0.297	0.053*	0.186	1.074	0.856	0.424		
	Tertiary	0.424	0.322	0.367	0.431	0.123	0.235		
Race	Black	0.523	0.012**	0.135	0.481	0.597	0.666		
	Non-	11.978	0.203	23.356	0.828	0.393	0.183		
Sex	Male	0.383	0.012**	0.146	0.578	0.071*	0.176		
	Female	0.859	0.668	0.304	1.368	0.354	0.463		
Observations			1,196			1,188			

Table 11. Regression result of the effect of the COVID-19 SRD on health outcomes by groups

Population weights was applied for each analysis due to survey stratum has only a single sampling unit to apply survey settings

†Race, education, and types of dwelling variables were excluded due to the massive loss of samples among the small number of observations in 55-64

††The standard error is high due to only the small size of non-black samples (n=15) *** p<0.01, ** p<0.05, * p<0.1

Chapter 5. Discussion and Conclusion

5.1. Discussion

This study estimated the effects of unemployment and unemployment benefits on self-rated health and the experience of depressed mood measured by PHQ-2, taking a cross-sectional approach using NIDS-CRAM data collected in South Africa during the COVID-19 pandemic. There were efforts to apply the lagged effect of unemployment benefits on health and compare individual profiles between recipients and non-recipients of unemployment benefits.

Before exploring the effect of unemployment benefits on health, this study analyzed the effects of unemployment on health. The result indicated that unemployment increased the odds of reporting poor self-rated health by 33.5% at the 10% level of statistical significance (OR=1.335, p=0.065). The adverse health result of unemployment is consistent with other studies during the economic crisis (De Vogli, 2014; Khang et al., 2005; Noelke & Beckfield, 2014). It adds another evidence that the economic crisis deepens health inequalities among people who already have unfavorable social determinants of health (Marmot et al., 2013). Particularly, unemployed people in developing countries, where the informal sector is pervasive, were fragile amid the pandemic recession.

Moreover, unemployment increased the odds of experiencing depressive moods by 13.8% (OR=1.138, p=0.237), yet not statistically significant. On the other hand, a similar study in South Africa during the COVID-19 pandemic found that people in employment and on paid leave were less likely to report depressive symptoms than people who lost employment and were on furlough (Posel et al., 2021). The difference in statistical significance can be attributed to the different survey periods between the two studies. This study used NIDS-CRAM wave 5 when the national lockdown level was the lowest as level 1, whereas a study conducted by Posel et al. (2021) used wave 2 when the national lockdown was stricter than wave 5 as at level 4. It is well known that pandemic lockdown restrictions exacerbated mental health, and the impact was disproportionate to vulnerable groups (Ahrens et al., 2021). As early noted by Daniels et al. (2021), if the COVID-19 lockdown policy has a considerable impact on people's mental health, one should consider the different levels of lockdown by the time and NIDS-CRAM data's lockdown-responsiveness.

Still, the negative effect of unemployment on self-rated health urges the need for actions to protect the health and well-being of unemployed people. Fortunately, South Africa is one of the countries that implemented protective measures for unemployed people from the early time of the pandemic. The government used its existing social protection programs through horizontal and vertical expansion to support the livelihood of citizens during the crisis (Devereux, 2021). The government of South Africa applied a vertical response to all social grants by providing top-ups for already enrolled beneficiaries, and a horizontal response by instituting new programs, such as UIF-TERS and COVID-19 SRD. Therefore, this study endeavored to present not only the negative effect of unemployment on health but also the evidence for potential solutions through analyzing unemployment benefits programs, UIF and COVID-19 SRD, that target unemployed people in both formal and informal economies.

Firstly, the result of the UIF effect on health showed that receiving UIF in 2020 had a negative association with health outcomes. It was indicated that UIF recipients had greater odds of reporting poor self-rated health and experiencing days of depressed moods than non-recipients. This result is inconsistent with previous studies which insisted that providing financial assistance through unemployment benefits to those who lost their employment and income can help maintain their health (Renahy et al., 2018; Faraz Vahid Shahidi et al., 2019). However, the additional analysis of this study found that health effects of UIF varied over time. Unemployed people who had received UIF benefits in wave 1 (May/June 2020), 11–12 months before measuring health outcomes in April/May 2021, showed reduced odds of reporting adverse health outcomes. On the other hand, receiving UIF in other waves with shorter lagged months showed a negative

association with health. Although this further analysis highlighted the importance of considering one year of lagged effect in unemployment benefits on health, it cannot assure whether recipients in wave 1 benefited from UIF for the full 12 months⁽⁹⁾ with given survey data. Besides, these volatile results can be explained by several reasons. First, the span of survey data that this study used is relatively shorter than other studies that used multiple years of accumulated panel data for analyzing the effect of unemployment benefits on health (Cylus & Avendano, 2017; Faraz Vahid Shahidi et al., 2019). Second, fluctuated level of lockdown policy in each NIDS-CRAM wave has a potential bias on the effect of unemployment benefits. Third, the small number of UIF samples (n=68; 4.23% out of total unemployed samples) can undermine the consistency in the effects of unemployment benefits. In addition, there is a possible underestimation of the UIF's health effect due to UIF-TERS that served as a core component in responding to the economic consequences of the lockdown by preventing the incidence of unemployment among vulnerable groups (Köhler & Hill, 2021). Although this study found that UIF was insufficient and need a year of lagged time to promote people's health, its transition to UIF-TERS implies that people will experience more healthy policy as they could be safeguarded from the life-shock event. Further research on the health effects of UIF-TERS will generate empirical evidence to understand more about the effect of the job retention scheme in South Africa. Also, it is still worth considering providing more generous benefits to unemployed people, especially during a crisis. Although the Ministry of Finance of South Africa increased the remuneration of UIF in 2021, a rise in monthly contributions can be a burden. By extending the duration or easing the eligibility criteria of the policy, the government can enhance the adequacy of unemployment protection, income security, and job recovery as other countries had during the pandemic (ILO, 2020).

Secondly, receiving COVID-19 SRD helped reduce the odds of

[®] Current UIF sets its maximum duration for claiming benefits as 12 months if a member paid their contribution at full scale

reporting poor self-rated health by 43.9% (OR=0.561, p=0.037), relative to non-recipients. The positive health effect of COVID-19 SRD corroborates the hypothesis that removing financial hardship helps keep the unemployed healthy (Renahy et al., 2018). Although other social programs may dilute the sheer effect of COVID-19 SRD (Renahy et al., 2018), such as Child Support Grant that effectively supported millions of South African during the pandemic, the result of this study was consistent with previous studies that explored the relationship between unemployment benefits and self-rated health (Cylus & Avendano, 2017; Cylus et al., 2015; Kuka, 2020; Faraz Vahid Shahidi et al., 2019). COVID-19 SRD lifted the burden of poor health among black Africans, even though the amount of COVID-19 SRD may be insufficient for their lives, as they had less favorable socioeconomic profiles than other races and accounted majority of recipients of COVID-19 SRD (82.8%). Age between 25 to 34 or 55 to 64 benefit the most from COVID-19 SRD because they are vulnerable age groups either in youth who graduated from school and were forced to work or in retirement age. Sub-group analysis by educational attainment showed mixed and inconsistent results, which need additional work with a more thoroughly designed dataset. The grant was beneficial to males' self-rated health and depression. The report from the government's assessment revealed that women of reproductive age received much less COVID-19 SRD benefits than men (Department of Social Development, 2021b). This is because they were excluded from the criteria as most vulnerable women in age between mid-20s to mid-40s received Child Support Grant (CSG), the social assistance for women caregivers who are poor. Unemployed people with any income source, including CSG, are restricted from receiving unemployment benefits. For this reason, COVID-19 SRD had more positive health effects on males as the coverage of policy was biased toward vulnerable men. This situation was criticized by civil society as it was designed without considering equity, generating an imbalanced gender dynamic (Devereux, 2021; Senona et al., 2021). Thereafter, the minister of Social Development of South Africa acknowledged the unintended exclusion of caregivers and promised amendments to the COVID-19 SRD criteria (Department of Social Development, 2021a).

Still, COVID-19 SRD has some drawbacks, such as an inaccessible digital system that favored young and educated people, targeting error, and uneven gender dynamics (Devereux, 2021; Senona et al., 2021). Although the government recognized those problems and tried to address them by expanding eligibility (Department of Social Development, 2021a) and extending the duration until March 2023 (Department of Social Development, 2022), future research and efforts to refine unemployment policy will be needed. Nevertheless, COVID-19 SRD was very supportive of the recipient's livelihood and family. It is promising that the grant pushed them out of hunger as purchasing food was the dominant response to the use of received benefits (Department of Social Development, 2021b). It also surveyed that majority of recipients and their household members felt a positive influence in their lives by receiving the benefits (Department of Social Development, 2021b). The result of those actual responses supports the pathway that unemployment benefits have contributed to the decrease in reporting poor health among the unemployed.

The experience of depressive moods was decreased if unemployed people benefited from the COVID-19 SRD in the preceding year; nonetheless, the effect was statistically insignificant. In some studies, likewise, the protective effect of unemployment insurance on mental health was mixed between countries because of different characteristics between and within countries (Renahy et al., 2018). The insignificant result of this study can be explained as either social stigmatization of receiving financial assistance or extremely poor mental health of South Africans that was difficult to revert with the COVID-19 SRD solely. As a matter of fact, South Africans recorded the lowest average Mental Health Quotient score and the highest percentage of distressed/struggling among 34 countries in 2021 (Sapien Labs, 2021). In addition, the amount of benefits might be insufficient to reduce depressive moods among the unemployed (Faraz V Shahidi et al., 2019). The result of this study showed that people who lacked the money to buy food were more likely to suffer from depressive symptoms. The broad set of studies proved that unconditional and generous social assistance positively affects mental health. Additional income sources gave them the confidence to search for a job (O'Campo et al., 2015). Also, increased relative income position and social status reduced phycological stress and improved mental health outcomes (Pega et al., 2017). Ensuring sufficient and adequate income protection for unemployed people was the exemplary response from countries around the world to build back better during the pandemic (ILO, 2020). Therefore, it is crucial to consider increasing the amount of COVID-19 SRD benefits as the current South African Rand 350 a month is ungenerous compared to South Africa's national poverty line of R 890 per month as of 2021.

Finally, some covariates used in the analysis showed interesting results that need cautious interpretation. Young people were more likely to be ill because the analysis yielded a non-linear association between age and health. This result is understandable in the context of South Africa since youths are one of the most disadvantaged group during the pandemic in terms of emotional well-being (Mudiriza & De Lannoy, 2020) because rising unemployment rates among youth have no clear solution (Studies in Poverty and Inequality Institue, 2021). The probability of a poor health outcome was significantly higher among people who lived in the urban area than the rural setting, and the probability of experiencing depressive moods was more likely high for people living in the informal dwelling such as a shack than a formal residence. Although black Africans were a vulnerable ethnic group in self-rated health, they showed a lower likelihood of experiencing depressive moods than other races. Posel et al. (2021) explained it as a steeling effect: as black Africans were historically disadvantaged; they were more successful in coping with stressful events than other ethnic groups during this time of crisis. This hypothesis is reasonable at some point, however, black Africans showed poorer self-rated health. There is a need for further analysis to clarify this inverse result between self-rated health and depression by studying the coping mechanism of black Africans during the crisis.

5.2. Study Limitation

This study has a few limitations. The data, NIDS-CRAM, is limited to drawing robust results due to the short span of the survey, however, it reflected the dynamics of the pandemic from the onset with support from high-level government officials and research bodies in South Africa.⁽²⁰⁾ This study capitalized on these efforts to estimate the positive health effect of unemployment benefits. Yet, the result is limited to the short-term effect of the benefits on self-rated health and the experience of depression in the context of the pandemic. Therefore, future research with a longer span of survey years will clarify the lagged effect of social protection programs, including unemployment benefits, on health and well-being in South Africa.

One critical limitation is the exclusion of household income data in the analysis. NIDS-CRAM wave 5 showed a large proportion of missing household income data at 26.63%. There were efforts to extrapolate the missing data (Köhler & Bhorat, 2021); however, both systemic missing and the low quality of non-missing data suggested that the data imputation may depend on individual researchers (Ardington, 2020). It induced this study to exclude household income data. Nevertheless, this study has compensated excluding household income for whether respondents' households had enough money to buy food as an alternative way of estimating the impact of financial capacity on health outcomes.

Another limitation is the failure to consider gender-based violence (GBV) due to the limits of the data. GBV was a spotlighted issue during the COVID-19 pandemic that was called the "shadow pandemic" (UN Women, 2020). The situation was even bleak when it mixed with unemployment in South Africa, resulting in devastating outcomes (Senona et al., 2021). Lacked consideration of GBV in the study can potentially bias self-rated health and depressive moods because losing a job can increase tensions and strains between partners

⁽²⁰⁾ Reports and publications that used NIDS-CRAM data to analyze the effects of COVID-19 on South Africa's society and economy can be found on cram survey website: <u>https://cramsurvey.org/reports/</u>

regarding household income (Bhalotra, 2020). Especially unemployed women are at high risk due to their economic dependency on their spouses (Anderberg et al., 2016). Both lockdown measures and unemployment make people to be stayed at home longer, increasing exposure and opportunities for violence. Hence, increased domestic violence due to the high unemployment rate in South Africa can contribute to a particular portion of adverse health conditions. On the other hand, experiences in Latin America suggested that the conditional cash transfer would compensate for the income shortfall, prevent poverty, and mitigate intimate partner violence (Blofield et al., 2022). Thus, the income effect offsets the exposure effect (Bhalotra, 2020). Moreover, unemployment benefits combined with ALMPs, such as job training or support for the job search, will make people go out of the home and back to work, decreasing the risk factors for domestic violence. UIF provided income security with opportunities for employment through LAPs, and the COVID-19 SRD transferred cash to at least some part of the vulnerable groups. Thus, this study assumed that unemployment benefits mitigated the potential risk of domestic violence on health conditions.

However, with all those limitations, this study explored the relationship between unemployment, unemployment benefits, and health that was relatively scarce in South Africa and SSA and yielded meaningful results that support the crucial role of social protection policies for unemployed people at the time of crisis.

5.3. Conclusion

The COVID-19 pandemic, an unprecedented health crisis, harmed not only our health but almost all aspects of society and the economy. The impact of the pandemic revealed the tremendous cost of high inequality in countries that underinvested in the social sector (Sachs, 2020) and exposed the limitations of neoliberalism (Saad-Filho, 2021). On the other hand, the pandemic highlighted the importance of public policies for promoting social equality and allowed states to invest more in social protection. It is irrelevant to any political regime as the government was responsible for both the urgent response to the pandemic and the socioeconomic consequences of the lockdown restrictions they imposed (Devereux, 2021). Dozens of states around the world introduced social protection measures targeting income, job protection, and unemployment during the pandemic. However, the progress of SDG 1.3 showed that lower income countries, particularly those in Sub–Saharan Africa, were left out of this trend (ILO, 2021c).

Nevertheless, South Africa is one of few countries in SSA that expanded social protection programs to unemployed people during the pandemic, both vertically through expanding existing UIF and horizontally through establishing a new program, COVID-19 SRD. Considering that women, black Africans, and youth were the most affected population by unemployment in South Africa, the result of this study corroborates the mechanism of unemployment-driven health inequalities (EMCONET, 2007). Also, it highlights a possible solution that ensures financial security through social protection designed for unemployed people (CSDH, 2008), especially for people in the informal sector that is pervasive in developing countries. Although the UIF effect was insignificant, the time variant effect of UIF implied that the duration and criteria of unemployment benefits should be generous during the crisis. On the other hand, the transition from unemployment benefit schemes (UIF) to employment retention schemes (UIF-TERS) can be more effective in preventing unemployed people from experiencing life shock events (Hammarström & Janlert, 2005). Therefore, building on the work of Köhler and Hill (2021) who assessed the aspects of distributive effectiveness and functions of UIF-TERS, further research will shed more light on the effects of employment retention schemes on the health and well-being in South Africa.

The COVID-19 SRD relieved poor health among the unemployed during the crisis. It also received positive responses from recipients at the policy assessment. While vulnerable populations experienced positive health effects of unemployment benefits, the policy should prioritize equity in policy making to reduce unintended consequences, such as gender imbalance. After its first termination in April 2021, the government reinstated the program by March 2022 with more eased eligibility to cover neglected populations under the mounting pressure from civil society. The state also recognized it as a crucial component for their people enduring "pain and indignity of hunger" and extended the program a year more by March 2023 (Department of Social Development, 2022). On the other hand, there were both political support and social movements to convert the COVID-19 SRD into Basic Income Support (BIS) to end unemployment, inequality, and poverty in South Africa (Senona et al., 2021). Although discussions over Universal Basic Income (UBI) were on the table during the pandemic (Prabhakar, 2020), the effects of UBI on employment conditions are largely unexplored (Ståhl & MacEachen, 2021). Further debates and studies regarding employment, health, and income support will shed more light on the progress of social health protection (ILO, 2008).

Nonetheless, the COVID-19 pandemic exposed weaknesses of current social protection systems amid a world of high inequality. It also provided opportunities for both states to invest more in those systems and people to demand more in social policies for their health and well-being during the crisis. The evidence this study generated will support expanding social protection for the health of unemployed people in neighboring countries in Sub-Saharan Africa (Obinger & Schmitt, 2021). Ultimately, it will accelerate the progress of achieving SDG 1.3 in the global South.

국문 초록

코로나19 상황에서 남아프리카 공화국의 실업급여가 주관적 건강과 우울에 미치는 영향

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연구 배경: 일자리는 건강을 향상시키는데 도움을 줄 수 있는 반면 실업은 일자리를 잃은 사람과 그 가족들의 건강을 위협할 수 있다. 특히 경제 위기 시 유럽에서는 건강의 사회적 결정요인이 불평등하게 나타났다. 이는 실업자와 같은 취약계층의 건강에 영향을 주며 건강 불평등을 심화시킨다. 마찬가지로 코로나19 팬데믹과 감염 차단을 위한 정책에 따른 예상치 못한 사회경제적 영향은 비자발적인 실직과 소득 상실로 실업자들의 건강을 악화시킬 수 있다. 일찍이 국민들을 위해 사회보호 정책을 펼친 고소득 국가들은 코로나19로부터 노동 시장 회복세를 보였다. 하지만 지속가능 발전목표(Sustainable Development Goals; SDGs) 1.3번 목표 달성 현황은 세계 인구의 절반이 사회보호 정책으로부터 보호받지 못하고 있음을 보여준다. 사하라 이남 아프리카 국가들의 상황은 더욱 심각하다. 그 중 남아프리카 공화국의 경우 기존에 존재하던 사회적 불평등에 더해 코로나19로 인한 사상 최고치의 실업률로 고통을 받고 있다. 남아프리카 공화국 정부는 코로나19로 인한 사회경제적 영향에 대응하고자 기존 기여 방식의 실업급여인 Unemployment Insurance Fund (UIF)에 더해 비공식 경제의 실업자들을 포함하기 위한 무기여 방식의 COVID-19 Social Relief Distress (COVID-19 SRD)를 도입했다. 그러나 남아프리카 공화국에서도 사하라 이남 아프리카의 다른 국가들과 마찬가지로 실업, 실업급여, 그리고 건강 간의 관계를 알아본 연구는 부족한 실정이다. 따라서 본 연구는 코로나19 팬데믹 상황에서 실업이 사하라 이남 아프리카에 위치한 남아프리카 공화국 노동 인구의 주관적 건강과 우울에 미치는 영향을

알아보고, 정부가 실업자를 위해 적극적으로 실행한 사회보호 정책이 갖는 건강 효과에 대해 탐색해보고자 한다.

연구 방법: 본 연구는 남아프리카 공화국 성인(18-64세)을 대상으로 2020년 5월부터 2021년 5월까지 총 5차례 수집된 국가 수준의 패널 자료인 National Income Dynamics Survey-Coronavirus Rapid Mobile Survey (NIDS-CRAM) 중 5차시 자료를 사용한 횡단면 분석을 수행했다. 본 연구는 실업급여의 건강 지연 효과를 고려하기 위해 건강 측정의 전년도인 2020년 실업급여 수급 여부 변수를 구성했다. 연구 방법은 다음과 같다. 첫째, 실업이 노동 인구의 주관적 건강과 우울 경험에 미치는 영향을 알아보기 위해 로지스틱 회귀 분석과 일반화 순서형 로지스틱 회귀 분석을 실시하였다. 둘째, 전년도인 2020년 실업급여 수급이 실업자들의 2021년 주관적 건강과 우울 경험에 미치는 영향을 동일한 분석 방법을 통해 탐색하였다.

연구 결과: 분석 결과 남아프리카 공화국의 노동 인구는 실업 상태에 있을 경우 주관적 건강 및 우울 경험이 부정적일 확률이 높은 것으로 나타났지만, 주관적 건강만이 통계적으로 유의하게 높았다(OR=1.335, p=0.065). 실업급여 수급은 주관적 건강이 좋지 않다고 보고할 확률을 통계적으로 유의하게 줄여주었지만 우울 경험은 유의하지 않았다. 전년도 UIF 수급자의 경우 주관적 건강과 우울 경험이 좋지 못한 것으로 나타났다. 하지만 추가적인 분석 결과 UIF 수급의 건강 효과는 시간에 따라 다르게 나타났다. 건강 측정 12개월 이전에 UIF를 수급했을 경우 비수급자에 비해 주관적 건강이 좋지 않다고 보고할 확률이 73.7% 줄었지만(OR=0.263, p=0.050), 그보다 최근에 UIF를 수급한 경우 오히려 주관적 건강이 나쁜 것으로 나타났다. UIF 수급에 따른 우울 경험도 비슷한 추세를 보였지만 통계적으로 유의하지는 않았다. 전년도 COVID-19 SRD 수급은 비수급자에 비해 주관적 건강이 좋지 않다고 보고할 확률을 43.9% 줄여주었다(OR=0.561, p=0.037). COVID-19 SRD 수급에 따라 실업자의 우울 경험도 줄어드는 경향을 보였지만 통계적으로는 유의하지 않았다.

결론: 본 연구는 코로나19 팬데믹 상황에서 남아프리카 공화국 노동 인구가 겪을 수 있는 실업의 부정적인 건강 영향을 밝히는 동시에 이를 줄여줄 수 있는 실업급여의 긍정적인 건강 효과를 제시했다. COVID-19 SRD를 통한 실업 급여 제공은 주관적 건강이 좋지 않을 가능성을 줄여주었다. UIF의 건강 효과는 시간에 따라 다르게 나타났지만, 경제 위기 상황에서 실업 급여
정책이 확대될 필요가 있음을 시사한다. 본 연구는 코로나19 상황에 따른 단기적인 실업급여의 건강 효과를 제시하고 있지만, 장기적으로는 중저소득 국가에서도 실업자의 건강을 위해 경제적 안정장치를 제공할 수 있는 사회보호 정책이 필요함을 제시한다. 본 연구의 결과는 주변 사하라이남 아프리카 국가에서 실업급여 정책 도입을 고려할 때 근거자료로 이용될 수 있을 것이며, 취약계층의 건강을 위한 사회보호 정책을 확대하는 계기가 될 것이다. 궁극적으로 중저소득 국가에서의 사회보호 정책 확대는 SDG 1.3 목표를 달성하는데 기여할 수 있을 것이다.

주요어 : 실업, 실업급여, 사회보호, 코로나19 팬데믹, 남아프리카 공화국 **학 번 :** 2020-26823

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