The social context of concurrent malnutrition among children under five in South Africa

Abstract

Background

Concurrent child malnutrition (CCM) is the co-existence of both over and under-nutrition and was previously common among upper middle income countries such as Indonesia (Modjadji & Madiba, 2019). The progress related to decreasing child malnutrition has varied by the indicators throughout time. Globally, nearly 144 million children under 5 were stunted, 38 million were overweight and 47 million were wasted in 2019 (UNICEF et al., 2020). Obesity as a condition traditionally recognised as a challenge in high-income countries, has now trickled down, affecting low-income and middle in-come countries; with the number of overweight children having increased from 30.3 million in the year 2000 up to 38.3 million in the year 2019 globally (Unicef/ WHO/The World Bank, 2019). A high under-5 mortality rate in a country is an indication of the country's nutritional status, knowledge of health care by mothers, availability of maternal and child health care services (antenatal care and immunizations) and the availability of adequate water and basic sanitation(UNICEF et al., 2020). The problem with childhood malnutrition is that it makes children more vulnerable to illness, aggravates their disease burden as well as delays their recovery from illnesses (Unicef/ WHO/The World Bank, 2019). Previous studies have established that poverty and food insecurity are part of the social determinants driving childhood malnutrition. Likewise, the importance on the household characteristics, such as the household size, household income, number of people living in the household as well as household poverty (Naicker et al., 2015; Nwosu & Ndinda, 2018; Sisha, 2020) have also been pointed out. What remains to be established is the social context CCM.

South Africa now faces a double burden of malnutrition among children under-5, with 13% of children being overweight and 27% of children being stunted . Between 2012 and 2013, 31% of deaths of children that occurred at hospitals in South Africa were due to severe malnutrition and 30% of children who died were underweight (Jamieson et al., 2017). The problem with CCM is that it is persistent in South Africa, given that in 2018, 8% of all the deaths of children under-5 were due to acute malnutrition (Statistics South Africa, 2018). The causes of these untimely deaths of children under-5 included: prematurity, neonatal infections, malnutrition, pneumonia and diarrhoea (Shung-King et al., 2019; UNICEF, 2018). Although under-5 mortality rate in South Africa has decreased from 56 deaths (per 1000 live births) in 2009 to 33.8 deaths in 2019, there is a need to end all the preventable child deaths (STATISTICS SOUTH AFRICA, 2019) if the target of the Sustainable Development Goal (SDG) 3.2 will be achieved in South Africa by 2030. According to the South African National Nutrition survey, food insecurity in the country is still high, with over 6 million people experiencing hunger in 2017 (Clark & Worger, 2013; Shisana et al., 2013; STATSSA, 2017). Social issues of hunger, poverty, inequality, unemployment (Kekana et al., 2020) and the intermittent outbreak of epidemics such as Ebola disease and COVID-19 have grave implications for childhood nutrition and therefore threaten child survival. The implementation of the child support grant has slightly ameliorated the poverty situation in South Africa. Evidence shows that the child support grant reaches nearly 12 million children (Granlund & Hochfeld, 2020). Despite this intervention, over 60% of children under-5 living below the upper-bound poverty line (Hall & Sambu, 2018).

There is a fragmentation between the individual, household, and community level variables in understanding the social context of CCM. Policies and programs on child nutrition regularly focus mainly on undernutrition, while overnutrition is on the rise. -Therefore, to effectively address this problem of

childhood malnutrition, through sets of programmes and interventions from development partner's, provincial and national governments, there is need for reliable scientific evidence. Understanding the relationship between the spectrum in which children are connected, their health and nutritional status is, therefore, crucial for determining appropriate interventions. Thus, directing research efforts on the social contexts of CCM will help generate new scientific findings on tacking this issue. Therefore, this study will explore how food spending, the characteristics of the households and the context in which children are brought up affects the well-being and the nutrition status of the children. In so doing, this study aims to contribute to childhood mortality reduction by providing empirical evidence on the levels and patterns of the social context of CCM, which includes the individual, household, and community level determinants of childhood malnutrition in low-income settings in South Africa.

Methods

This study adopted an explanatory sequential mixed methods design (i.e., analysis of quantitative data followed by qualitative data collection and analysis). The research methodology has two components – quantitative and qualitative. Component one entails analysing the quantitative secondary data from the 2017 South Africa National Income Dynamics Study (NIDS Wave 5). The NIDS data was nationally representative. The sample was weighted using post-stratified weights. Data of 2 966 children and their mothers were analysed. These children were selected on the basis that they had complete anthropometric measurements (height and weight measurements) and were suitable and selected for the investigation of childhood malnutrition (stunting, overweight, and underweight). Data were analysed at the univariate level to obtain descriptive statistics, and at the bivariate level using the chi-square test of association. At the multivariate level, multi-level binary logistic regression was employed, and odds ratios were reported. The multilevel analysis involved two levels – the individual level (child and mother characteristics) and the household-level characteristics. Data were analysed using Stata software (version 17). The selection of the independent variables was guided by the UNICEF 1990 framework and the Food and nutrition security framework. The second component of the study was qualitative and was collected between June and August 2022. Twenty in-depth interviews, and five focus group discussions with mothers of under-5 children, in selected low-income communities in urban Gauteng (i.e., Thulani in Soweto), and in rural Limpopo (i.e., Ga-Masemola in Sekhukhune District). These communities were selected based on high poverty and unemployment rates, had substandard houses, insufficient infrastructure and environmental issues. The qualitative data provided deeper understanding about ethe quantitative findings and explored questions that were not available to the researcher in the NIDS dataset. The focus group discussions and key-in-depth interviews further provided a follow-up and an explanation of the quantitative findings. Thematic analysis was used to analyse qualitative data.

Results

Table 1: Summary of the findings from the quantitative analysis

Characteristics	Main results
1. Child malnutrition outcomes	Stunted (22.16%), overweight (16.40%) and underweight (5.04%), CCM (34.66%)
	Factors associated with child malnutrition: Age, Sex, birthweight, ethnicity, access to medical aid, the child support grant, place of care during the day, children receiving multiple forms of childcare at home
2. Caregiver sociodemographic profile	Single/divorced (73.87%), secondary education (62.37), unemployed (57.78%), depressive symptoms (94.23%)
3. Caregiver reproductive history	1-2 children ever born (65.34%), age first birth (12-19) 45.18%, delivered at hospital (87.41%)
4. Household status	1-2 people household size (48.34%), perceived low-socio economic status (49.21%), public tap (13.12%), chemical/pit-latrine toilet (28.72%), Informal housing (24.52%), mean household size 3.82
5. Household food security	Food unavailability (55.30%), below poverty line food spending (52.14%), mean food spending R1 520

The study revealed significant findings related to child malnutrition outcomes, caregiver sociodemographic profile, caregiver reproductive history, household status, and household food security. Notably, a considerable proportion of children were identified as stunted (22.16%), overweight (16.40%), and underweight (5.04%), with concurrent childhood malnutrition (CCM) affecting 34.66% of the under-five population. Factors associated with child malnutrition included various demographic and socioeconomic variables such as age, sex, birthweight, ethnicity, access to medical aid, and childcare arrangements. Caregivers exhibited a high prevalence of single/divorced status (73.87%), secondary education attainment (62.37%), unemployment (57.78%), and depressive symptoms (94.23%). Furthermore, caregiver reproductive history indicated a substantial proportion having 1-2 children ever born (65.34%), giving birth between ages 12-19 (45.18%), and delivering at a hospital (87.41%). Household characteristics reflected small sizes (average of 3.82 people), perceived low socioeconomic status (49.21%), limited access to basic amenities such as public tap water (13.12%) and chemical/pit-latrine toilets (28.72%), and residing in informal housing (24.52%). Food insecurity was prevalent, with over half of households experiencing food unavailability (55.30%) and spending below the poverty line on food (52.14%), averaging R1,520 in food expenditure.

Table 2: Summary of the main findings from the qualitative interviews

Themes	Main findings
1. Economic strain	Factors associated with child malnutrition: Age, Sex, birthweight, ethnicity, access to medical aid, the child support grant, place of care during the day, children receiving multiple forms of childcare at home

2. Food insecurity	About half of the households experienced food insecurity, exacerbated during the COVID-19 lockdown due to income loss from job cuts.
3. Food choices	Caregivers faced difficult choices, prioritizing between purchasing nutritious foods and meeting other household expenses like rent and electricity.
4. Nutritional Compromise	Financial constraints led caregivers to compromise on nutrition, opting for less nutritious but more affordable food options for children.
5. Socio-cultural influence	Caregivers' socio-cultural practices impacted children's nutritional and health outcomes, with dietary choices often constrained by income rather than cultural beliefs.
6. Childcare practices	Caregivers lacked clarity on exclusive breastfeeding duration and the appropriate timing for weaning, reflecting a gap in knowledge regarding optimal childcare practices.
7. Knowledge gaps in childcare	Caregivers expressed inadequate knowledge about responsive caregiving practices such as child feeding frequency and portion sizes, highlighting a need for improved nutrition education and support beyond infancy.

These findings highlight multiple factors contributing to child malnutrition within the studied community. Economic strain emerges as a significant theme, with various factors such as age, sex, birthweight, ethnicity, and access to medical aid influencing nutritional outcomes. Additionally, the child support grant and the place of care during the day play roles in determining child nutrition. Food insecurity, exacerbated by income loss during the COVID-19 lockdown, further compounds the issue, with caregivers forced to make difficult choices between purchasing nutritious foods and meeting other household expenses. Financial constraints lead to compromises in nutrition, as caregivers opt for more affordable but less nutritious food options. Socio-cultural influences also affect dietary choices, with income often dictating decisions rather than cultural beliefs. Furthermore, caregivers demonstrate knowledge gaps in childcare practices, including exclusive breastfeeding duration, appropriate weaning timing, and responsive caregiving practices, indicating a need for improved nutrition education and support beyond infancy.

Discussion and conclusion

The findings outlined above shed light on the complex interplay of economic, social, and cultural factors in shaping child malnutrition within the studied community. Economic strain emerges as a central theme, with various socioeconomic indicators such as access to medical aid, childcare support grants, and employment status influencing nutritional outcomes for children. The exacerbation of food insecurity during the COVID-19 lockdown underscores the vulnerability of households to external shocks, leading to difficult choices between meeting basic needs and ensuring adequate nutrition for children. These findings highlight the urgent need for targeted interventions to address the root causes of economic strain and food insecurity, including strategies to enhance household income, improve access to social safety nets, and strengthen food security measures.

Moreover, the study underscores the role of socio-cultural influences in shaping dietary practices and nutritional outcomes. Despite the presence of cultural beliefs related to food and childcare, economic constraints often override these considerations, leading caregivers to prioritize affordability over

nutritional quality. This finding underscores the importance of understanding the socio-cultural context in designing interventions to promote optimal child nutrition. Additionally, the study highlights significant knowledge gaps among caregivers regarding childcare practices, including breastfeeding duration, weaning timing, and responsive feeding practices. These findings underscore the need for targeted nutrition education and support programs aimed at equipping caregivers with the knowledge and skills necessary to provide optimal nutrition and care for their children.

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