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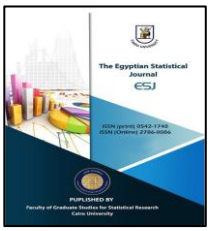

Factors Associated with Inequality in Undernutrition among Egyptian Children

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Keywords

Decomposing; Inequality; Stunting; Underweight; Socioeconomic; Egypt

Abstract

Adequate nutrition plays a vital role in children's health and development. Malnutrition reduces productivity and increases morbidity and mortality. The current study uses the concentration index to determine socioeconomic inequality in malnutrition among children. It decomposes this inequality by identifying the factors contributing to childhood malnutrition inequality. Data were extracted from the 2014 EDHS. The concentration curve shows that children from low-economic households are more stunted and underweight than children from high-economic backgrounds. The results of this study show that one in five Egyptian children was stunted, and about 6 per cent were underweight. In general, the most prominent finding to emerge from this paper is that women's education and economic status contributed to the highest inequality in childhood stunting and underweight, respectively. Moreover, the results indicate that birth order number and blood relation between parents were important determinants explaining considerable shares of the inequalities in childhood stunting. In contrast, birth order number and mother's education were the main contributors to the inequality of childhood underweight.

1. Introduction

Childhood malnutrition is considered one of the significant global health threats, encompassing various forms such as undernutrition (stunting, underweight, wasting), insufficient vitamin intake, obesity, overweight, and consequent diet-related noncommunicable diseases (WHO, 2021). In low- and middle-income nations, malnutrition stands as a leading cause of childhood mortality. Globally, undernutrition (stunting, underweight, wasting) contributes to nearly half of deaths among children under the age of five (Global Nutrition Report 2018). The second Sustainable Development Goal (SDG 2) aims to eradicate hunger, ensure food security, and improve nutrition (WHO, 2021). More specifically, SDG Target 2.2 aims to eliminate all forms of malnutrition and attain the global target of reducing stunting in children under five to 89 million by 2030 (UNICEF, 2023).

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Globally, the prevalence of underweight children under five has decreased from nearly 25 per cent in 1990 to 13 per cent in 2019 (Hossain et al., 2023). Meanwhile, in 2022, an estimated 148.1 million children under five, constituting 22.3 per cent, were stunted worldwide, with about 43 per cent of them residing in Africa. Disparities in childhood malnutrition are evident both between and within countries. Lower- and middle-income countries bear the brunt in 2022, with nearly two-thirds (64 per cent) of stunted children. In contrast, approximately 26 per cent of stunted children reside in low-income nations, and only 2 per cent are found in high-income countries (UNICEF, 2023). Furthermore, the majority of childhood malnutrition cases globally occur in households with low levels of education and income (Almasian Kia et al. 2019; Anwar et al. 2019; Cruz et al. 2017; Huda et al. 2017; Mishra and Chaurasia 2021; Singh et al. 2019, Wali et al. 2020).

In Egypt, there has been a significant decline in childhood malnutrition over the past decade. The prevalence of stunting decreased from 24.6 per cent in 2012 to 20.4 per cent in 2022, marking a reduction of 17 per cent. However, according to the WHO Child Growth Standards, this percentage still falls under the 'high' category (20% to less than 30%) (UNICEF 2023). Similarly, the prevalence of underweight in Egypt decreased from 9.4 per cent in 1988 to 7 per cent in 2014, representing a reduction of 26 per cent (WHO 2023).

Recent research on socioeconomic disparities in childhood malnutrition in Egypt is limited (El-Laithy et al. 2021; Sharaf and Rashad 2016). Notably, Sharaf and Rashad (2016) employed Oaxaca Decomposition analysis to investigate the gap in childhood stunting between urban and rural areas in Egypt, Yemen, and Jordan. The current study aimed to explore the socioeconomic inequalities in childhood stunting and underweight in Egypt using a decomposition approach.

2. Data Source

The present study relies on data from the 2014 Egypt Demographic and Health Survey (EDHS) conducted by El-Zanaty on behalf of the Egyptian Ministry of Health and Population. This comprehensive survey involved interviews with 21,762 ever-married women aged 15 to 49. Given that the outcome variables pertain to indicators of childhood malnutrition, the analysis focuses on child-level data rather than maternal data. Specifically, the data used in this study were derived from the 2014 EDHS for children born within the five years preceding the survey. The analysis includes only the most recent births, for which complete information on weight, height, gender, birth order, size, age, and selected socioeconomic characteristics of the mothers was available, amounting to 10,043 children.

3. Methodology

This study focuses on two key indicators of childhood malnutrition: stunting and underweight. Children whose height-for-age falls below two standard deviations (-2 SD) from the median of the reference population are classified as stunted. Childhood stunting, characterized by low height for age, describes a child whose height is below the expected range for their age. Similarly, children whose weight-for-age falls below two standard deviations (-2 SD) from the median of the reference population are classified as underweight. Childhood underweight, defined as low weight for age, indicates a child whose weight falls below the expected range for their age (UNICEF 2023).

This paper used the Chi-square test to determine the significant association between childhood malnourishment and some selected socioeconomic characteristics. Our study also measured the

socioeconomic inequality of childhood malnourishment (stunting and underweight) using concentration curves and indices.

The concentration curve is a graphical tool for assessing inequality. It represents the cumulative percentage of childhood malnutrition (either stunted or underweight) on the y-axis and the cumulative percentage of the sample, ranked by economic status, on the x-axis. A diagonal line at 45 degrees represents perfect equality. If the curve falls above this line (the equality line), it indicates that malnutrition is concentrated among poorer children. Conversely, a curve falling below the line suggests wealthier children are more likely to be malnourished (Kakwani et al., 1997; Wagstaff et al., 1991; Wagstaff, 2000).

The concentration index serves as a relative measure of inequality, indicating the degree to which the distribution of the outcome variable, like childhood malnutrition in this case, is concentrated among either advantaged or disadvantaged individuals (WHO, 2013). This index ranges from -1 to +1, with a value of zero denoting perfect equality. A negative value suggests that the outcome variable is concentrated among disadvantaged or poor individuals, whereas a positive value indicates pro-rich inequality (Wagstaff et al., 1991; Wagstaff et al., 1997). The concentration index is computed as twice the (weighted) covariance of the outcome variable and a relative economic rank variable, divided by the mean of the outcome variable, as expressed by the following formula (Wagstaff et al., 2003):

$$C = \frac{2}{\mu} Cov_w \left(y_i , R_i \right) \tag{1}$$

Where y_i is childhood malnourishment (stunting or underweight), μ denotes the average of childhood malnourishment (stunting or underweight), R_i denotes the fractional rank of i^{th} individual (for weighted data) within the socioeconomic distribution defined by wealth and Cov_w is the weighted covariance.

This paper decomposed the concentration index to indicate how different independent variables proportionally contribute to inequality in childhood malnourishment (stunting or underweight). Wagstaff et al. (2003) showed that for any linear regression model connecting the outcome variable y (stunting or underweight), to a set of k determinants, x_k:

$$y_i = \alpha + \sum_{k=1}^{n} \beta_k X_{ki} + \varepsilon_i \tag{2}$$

Where ε denotes the error term. Given the relationship between the outcome variable and the determinants, the concentration index (C) for y is written as:

$$C = \sum_{k=1}^{n} \left(\frac{\beta_k \bar{x}_k}{\mu} \right) C_k + \frac{GC_\varepsilon}{\mu} \tag{3}$$

$$C = \sum_{k=1}^{n} \eta_k C_k + \frac{GC_\varepsilon}{\mu} \tag{4}$$

where, $\eta_k = \frac{\beta_k \bar{x}_k}{\mu}$

Where μ denotes the mean of the outcome variable (y). $\bar{x}_k$ is the mean of x_k . C_k is the concentration index for x_k. η_k is the elasticity of x_k . GC_ε is the generalized concentration index for ε_i.

From equation (3), it's evident that C comprises two components. The first component, often referred to as the explained or deterministic component, quantifies the contribution of each factor to the inequality in childhood malnutrition. Meanwhile, the second component, known as the unexplained component, illustrates the inequality in childhood malnutrition that cannot be attributed to systematic variations in the determinants (x_k) across socioeconomic groups (Wagstaff et al., 2003).

4. Results

Table (1) provides an overview of the prevalence of childhood stunting across various socioeconomic characteristics. Furthermore, it uses a chi-square test to determine whether these characteristics are significantly associated with childhood stunting.

The findings indicate a significant correlation between childhood undernutrition and child size at birth. Table (1) reveals that the prevalence of childhood stunting among children born at non-normal sizes was 28 percent while this percentage decreased to about 21 percent among those born at normal sizes. Moreover, there is a significant association between childhood undernutrition and blood relation between parents. Children born to parents who are blood relatives have slightly higher rates of stunting (24 percent) compared to children of non-blood-related parents (21 percent).

The results demonstrate a notable disparity in the prevalence of stunted children across the five socioeconomic categories. Data from Table (1) indicates that approximately 21 percent of children in the wealthier category are stunted, whereas this Figure increases to 24 percent among children in the poorest category.

Regarding the mother's education, the results highlight a clear link between a mother's education level and her child's risk of malnutrition. As indicated in Table (1), approximately 25 percent of children with uneducated mothers are stunted, compared to 20 percent among children with highly educated mothers. This suggests that maternal education plays a significant role in childhood nutrition outcomes in Egypt. Furthermore, a significant association is evident between childhood stunting and place of residence. Table (1) highlights that the percentage of children with stunting appears to be higher in urban areas compared to rural areas.

Table 1: Distribution of childhood stunting by selected socioeconomic characteristics, EDHS 2014

Socioeconomic Characteristics		Stunting	Number of children
*Place of Residence***	Urban	23.2	3159
	Rural	20.9	6884
*Region***	Urban governorates	18.7	1066
	Lower Egypt	18.3	4820
	Urban	19.8	909
	Rural	18.0	3911
	Upper Egypt	26.5	4061
	Urban	30.5	1127
	Rural	24.9	2934
	Frontier governorates	14.9	94
*Educational attainment***	No education	24.9	1803
	Incomplete primary	26.0	503
	Complete primary	28.3	385
	Incomplete secondary	22.0	1412
	Complete secondary	19.6	4331
	Higher	20.2	1609
Woman's age	15-24	21.4	2412
	25-39	21.7	7128
	40-49	21.3	503
*Work status***	Not working for cash	21.1	8723
	Working for cash	25.0	1306
*Gender of child***	Female	20.3	4801
	Male	22.9	5241
*Child is twin**	No	21.5	9840
	Yes	26.6	203
Number of children under 5 in household			
	One child	21.3	5403
	More than one child	22.0	4638
Mother has anemia	No	21.1	7510
	Yes	21.8	2533
*Size of child***	< normal	28.0	1498
	>= normal	20.5	8545
*Wealth index***	Poorest	24.3	1742
	Poorer	23.0	1931
	Middle	18.3	2507
	Richer	21.0	2155
	Richest	23.0	1708
*Blood relation between parents***	No	20.7	6735
	Yes	23.5	3308
Total		21.6	10043

* Significant at 0.1 ** Significant at 0.01

Source: Calculated by author from EDHS 2014

Table (2) summarizes the prevalence of childhood underweight across different socioeconomic characteristics. Additionally, it employs a chi-square test to reveal whether these factors are significantly linked to a child's weight.

The results reveal a clear link between a child's birth size and the risk of underweight. As seen in Table (2), the prevalence of childhood underweight among children of non-normal size at birth was 8 percent, while this percentage decreased to around 5 percent among children of normal size at birth.

The findings reveal a significant link between a mother's education and her child's risk of underweight. As indicated in Table (2), the prevalence of childhood underweight was approximately 6 percent for children with uneducated mothers, compared to 5 percent among those with highly educated mothers.

Figure (1) presents the concentration curves for stunting and underweight according to the wealth index. The Y-axis represents the cumulative percentage of children who are stunted (Figure 1a) or underweight (Figure 1b). The X-axis shows the cumulative percentage of children ranked by their families' wealth, starting with the poorest. Data presented in Figure (1a) reveals a higher stunting prevalence among children from the poorest families in Egypt. The concentration curve, positioned above the equality line, indicates that children from the poorest households exhibit greater stunting than those from the wealthiest households.

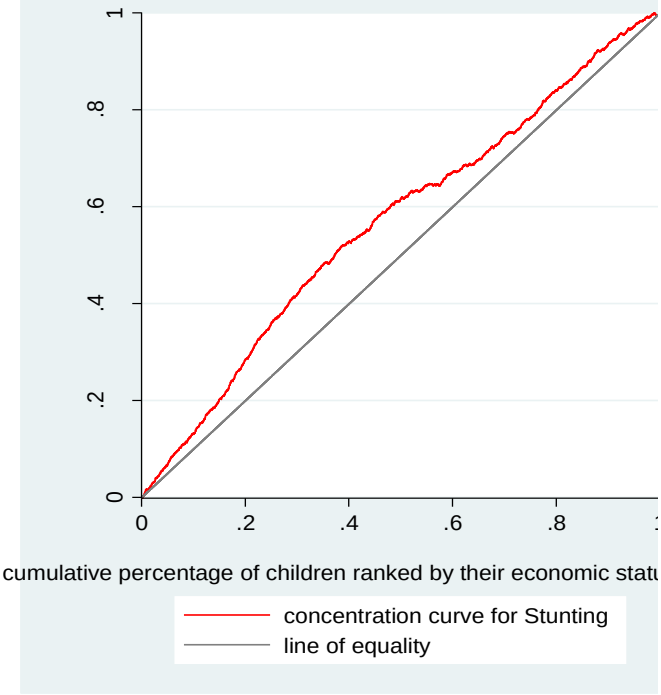

Figure (1a): Stunting

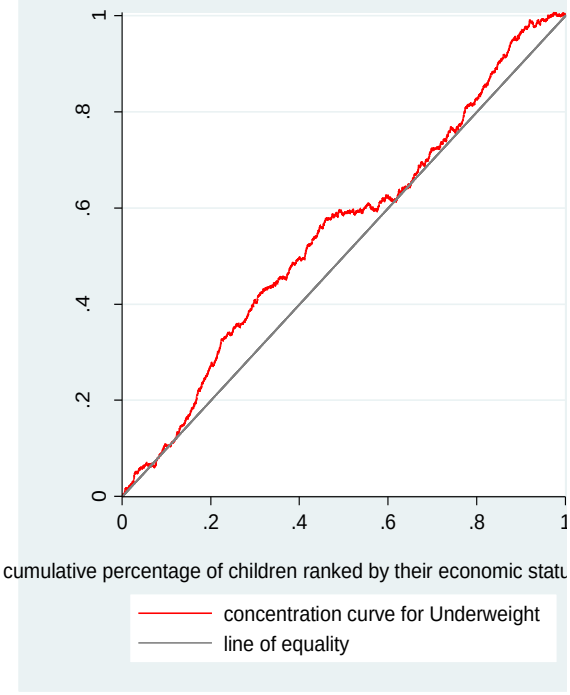

Figure (1b): Underweight

Source: Created by author from EDHS 2014

Figure 1: Concentration curves for some indicators of childhood malnutrition according to wealth index, EDHS 2014

Furthermore, figure (1b) demonstrates that the prevalence of underweight is higher among children from poorer families, as evidenced by the concentration curve above the 45◦ diagonal line. This highlights a significant disparity in childhood undernutrition based on economic background.

Moreover, the concentration indices for stunting and underweight were -0.0166 and -0.0229 respectively. The negative values of these indices indicate that stunting and underweight are more prevalent among children from the poorest households.

Table 2: Distribution of childhood underweight by selected socioeconomic characteristics, EDHS 2014

Socioeconomic Characteristics		Underweight	Number of children
Place of Residence	Urban	5.4	6884
	Rural	5.2	3158
*Region***	Urban governorates	3.8	1067
	Lower Egypt	4.3	4820
	Urban	4.6	909
	Rural	4.2	3911
	Upper Egypt	6.9	4062
	Urban	7.5	1128
	Rural	6.6	2934
	Frontier governorates	6.4	94
*Educational attainment***	No education	6.2	1803
	Incomplete primary	5.0	503
	Complete primary	6.3	384
	Incomplete secondary	6.4	1412
	Complete secondary	4.5	4331
	Higher	5.3	1610
Woman's age	15-24	5.5	2412
	25-39	5.2	7128
	40-49	5.6	503
Work status	Not working for cash	5.3	8724
	Working for cash	5.7	1306
Gender of child	Female	5.0	4802
	Male	5.6	5242
Child is twin	No	5.3	9840
	Yes	5.4	203
*Number of children under 5 in household***			
	One child	5.9	5404
	More than one child	4.6	4639
Mother has anemia	No	4.8	7510
	Yes	5.5	2534
*Size of child***	< normal	8.0	1498
	>= normal	4.8	8545
Wealth index	Poorest	5.7	1742
	Poorer	5.1	1931
	Middle	5.5	2507
	Richer	5.4	2155
	Richest	4.7	1708
Blood relation between parents	No	5.1	6734
	Yes	5.7	3308
Total		5.3	10043

** Significant at 0.01

Source: Calculated by author from EDHS 2014

Table (3) highlights the factors contributing to socioeconomic inequality in childhood stunting in Egypt. The results reveal that the most substantial contribution to socioeconomic inequality in childhood stunting stemmed from mother's education, accounting for 50 percent of the total share.

Furthermore, the blood relation between parents emerges as another significant determinant explaining a considerable portion of the disparities in childhood stunting. The findings from Table (3) illustrate that the blood relation between parents to inequality in childhood stunting amounts to 18 percent. Concerning birth order numbers, it is possible to conclude that birth order numbers contribute about 12 percent to generating socioeconomic inequality in childhood stunting. Decomposition results indicate that the child's age (about 10 percent), mother's height (9 percent), wealth index (about 8 percent), and size of the child (7 percent) had remarkable shares of inequality in childhood stunting.

Table 3: Decomposition results of inequality in height-for-age scores in Egypt, EDHS 2014

Variable	**Mean**	**C_k**	**B's**	**Elasticity**	**Share**	**% Share**
Mother's age	28.84	0.001986	0.019**	-0.89798	-0.00178	2.03
Mother's Height	1621.39	0.006042	0.001**	-1.35497	-0.00819	9.34
Mother's Work (No [a])	0.13	0.112746	-0.265**	0.05648	0.00637	-7.26
Birth order number	2.27	-0.07188	-0.038*	0.145165	-0.01043	11.90
Child's age in months	33.00	-0.01341	-0.011**	0.623979	-0.00837	9.54
Wealth index (Poorest [a])						
Poorer	0.1933	-0.4628	0.085	-0.02734	0.01265	-14.43
Middle	0.2485	-0.02104	0.299**	-0.1237	0.00260	-2.97
Richer	0.2147	0.442211	0.143*	-0.05101	-0.02256	25.72
Richest	0.1715	0.82848	-0.002	0.000438	0.00037	-0.41
Sum						7.91
Mother's education (No education [a])						
Incomplete primary	0.0486	-0.26059	-0.070	0.005708	-0.00149	1.70
Complete primary	0.0385	-0.11771	-0.182*	0.011687	-0.00138	1.57
Incomplete secondary	0.1437	-0.0977	0.138*	-0.03309	0.00323	-3.69
Complete secondary	0.4303	0.073878	0.162**	-0.1165	-0.00861	9.81
Higher	0.16	0.413354	0.319**	-0.08561	-0.03539	40.35
Sum						49.74
Place of residence (rural [a])	0.32	0.566117	-0.025	0.013117	0.00743	-8.47
Gender of child (female [a])	0.53	0.000712	-0.135**	0.118963	0.00008	-0.09
Children 5 and under (one child [a])	0.451	-0.05072	0.004	-0.00268	0.00014	-0.16
Mother's anemia (No [a])	0.75	-0.00284	-0.019	0.023309	-0.00007	0.08
Size of Child (<normal [a])	0.84	0.014228	0.311**	-0.43715	-0.00622	7.09
Blood relation between parents (No [a])	0.33	-0.14511	-0.200**	0.108973	-0.01581	18.03
Child is twin (No [a])	0.02	-0.02768	-0.263*	0.009806	-0.00027	0.31

[a] Reference category * Significant at 0.1 ** Significant at 0.01

Source: Calculated by author from EDHS 2014

Turning to childhood underweight, Table (4) reveals several factors contributing to socioeconomic inequality in childhood underweight. It is possible to conclude that wealth index, birth order number and mother's education were the primary factors contributing to inequality in childhood underweight. Decomposition results indicate that the economic status (49 percent) could clarify the highest share of childhood underweight inequality. Moreover, birth order number and mother's

education have 28 and 26 percent, respectively, contributing to generating socioeconomic inequality in childhood underweight. It should be mentioned, from Table (4), that the blood relation between parents (about 20 percent) mother's weight (around 16 percent) and the size of the child (9 percent) had remarkable contributions to inequality in childhood underweight. The negative contribution of the place of residence leads to a pro-poor distribution of childhood underweight. The high value of this contribution, combined with the insignificant coefficient for place of residence, requires further research.

Table 4: Decomposition results of inequality in weight-for-age scores in Egypt, DHS 2014

Variable	Mean	C_k	B's	Elasticity	Share	% Share
Mother's age	28.84	0.001986	0.010**	-3.78518	-0.00752	1.60
Mother's weight	771.01	0.02045	0.000**	-3.59862	-0.07358	15.65
Mother's Work (No [a])	0.13	0.112746	0.012**	-0.02054	-0.00232	0.49
Birth order number	2.27	-0.07188	-0.060*	1.847815	-0.13282	28.25
Child's age in months	33.00	-0.01341	-0.004**	1.900172	-0.02548	5.42
Wealth index (Poorest [a])						
Poorer	0.1933	-0.4628	-0.004	0.011517	-0.00533	1.13
Middle	0.2485	-0.02104	0.046**	-0.15479	0.00326	-0.69
Richer	0.2147	0.442211	0.068*	-0.19747	-0.08732	18.57
Richest	0.1715	0.82848	0.074	-0.17123	-0.14186	30.17
Sum						49.18
Mother's education (No education [a])						
Incomplete primary	0.0486	-0.26059	0.016	-0.01047	0.00273	-0.58
Complete primary	0.0385	-0.11771	0.082*	-0.04247	0.00499	-1.06
Incomplete secondary	0.1437	-0.0977	0.046*	-0.08924	0.00872	-1.85
Complete secondary	0.4303	0.073878	0.114**	-0.66285	-0.04897	10.41
Higher	0.16	0.413354	0.101**	-0.22039	-0.09110	19.37
Sum						26.29
Place of residence (rural [a])	0.32	0.56611	-0.107	0.461063	0.26102	-55.51
Gender of child (female [a])	0.53	0.000712	-0.070**	0.500827	0.00036	-0.08
Children 5 and under (one child [a])	0.451	-0.05072	0.009	-0.0555	0.00281	-0.60
Mother's anemia (No [a])	0.75	-0.00284	0.000	-0.00326	0.000009	-0.001
Size of Child (<normal [a])	0.84	0.014228	0.274**	-3.11951	-0.04438	9.44
Blood relation between parents (No [a])	0.33	-0.14511	-0.145**	0.639084	-0.09274	19.72
Child is twin (No [a])	0.02	-0.02768	-0.085*	0.025668	-0.00071	0.15

[a] Reference category * Significant at 0.1 ** Significant at 0.01
Source: Calculated by author from EDHS 2014

5. Discussion

The concentration curve results (visual representations of inequality) confirm that stunting and underweight are more prevalent among children from poorer families than those from wealthier families. Our concentration curves aligned with previous research by Anwar et al. (2019) and Huda et al. (2017), who also found evidence of socioeconomic disparities in childhood undernutrition.

Our analysis reveals that household wealth significantly contributes to socioeconomic inequality in childhood undernutrition (stunted and underweight). This aligns with the results from similar research in different countries (Almasian Kia et al. 2019; Anwar et al. 2019; Cruz et al. 2017; Huda

et al. 2017; Mishra & Chaurasia 2021; Singh et al. 2019; Uthman 2009; Wali et al. 2020). Health and food choice behaviors are influenced by household wealth, which can subsequently impact children's nutrition and health status across various socioeconomic groups (Huda et al. 2017).

Consistent with previous studies (Huda et al. 2017; Singh et al. 2019; Wali et al. 2020), maternal height has been identified as a contributor to inequalities in childhood stunting. This is further supported by Ozaltin et al. (2010) who found that a one-centimeter increase in maternal height in 54 low- and middle-income countries was associated with a lower risk of stunting in children.

Our research findings revealed that birth order is essential to a child's growth. It is possible to conclude that birth order is the second and third contributor to inequality in underweight and stunting, respectively. This result is supported by the literature in various regions around the globe (Anwar et al. 2019; Mishra & Chaurasia 2021; Singh et al. 2019; Huda et al. 2017).

Our analysis highlights that the age of child has a contribution to socioeconomic disparities in both underweight and stunting. This observation is consistent with results obtained from previous studies in different countries (Anwar et al. 2019; Cruz et al. 2017; Uthman 2009; Van de Poel et al. 2007).

Consistent with previous studies (Almasian Kia et al. 2019; Anwar et al. 2019; Cruz et al. 2017; Huda et al. 2017; Mishra & Chaurasia 2021; Mohammed et al. 2019; Singh et al. 2019; Van de Poel et al. 2007; Wali et al. 2020), our paper indicated that mothers' education contributed to socioeconomic disparities in childhood undernutrition (stunting and underweight). For instance, research in India revealed that highly educated mothers were less likely to have children with malnutrition compared to mothers who never attended school (Anwar et al. 2019). Additionally, a previous study indicated that mothers with 10 years of schooling might have better feeding practices, more health-seeking behaviors, and healthcare knowledge for their children (Cruz et al. 2017). Moreover, educated mothers improve their children's nutritional status and health where education of mothers promotes child nutrition through various ways such as increasing control over resources, providing the knowledge of rules of hygiene, and adherence to recommended practices of feeding for children (Abuya et al. 2012; Anwar et al. 2019; Singh et al. 2012).

6. Conclusion

This paper attempts to assess the inequality in childhood undernutrition (stunted and underweight) in Egypt, utilizing data from EDHS 2014. The analysis reveals that approximately 22 percent of children in Egypt are stunted, while 5 percent are underweight. These findings underscore the presence of disparities in childhood undernutrition (stunting and underweight). The findings showed that women's education and blood relations between parents were the most significant determinants influencing inequality in childhood stunting. At the same time, household wealth and birth order numbers were significant in determining the inequality of childhood underweight.

The decomposition approach showed that children from poorer families were more likely to be stunted and underweight compared to children from wealthier families. Therefore, targeting children from the poorest families is necessary as they are more vulnerable to malnutrition, and closely monitoring them through healthcare and social protection services is

essential. This suggests integrating information systems across the Ministry of Health and Population and the Ministry of Social Affairs and Labor to facilitate monitoring of dietary systems and nutritional status among the most vulnerable groups.

This paper reveals that maternal education plays a significant role in childhood nutrition outcomes in Egypt. Therefore, ensuring that all children receive primary education and integrating nutrition education into schools is crucial. This will empower families with adequate knowledge about the importance of dietary diversity for their children's future well-being.

One of the limitations of our study is that the analyses could not include some other essential predictors of disparities in childhood stunting and underweight, such as birth interval and mother's body mass index (BMI). Future research should consider these predictors to understand childhood malnutrition inequality better. Another limitation is that the data employed in this paper appears outdated, as the analysis was conducted before the release of the more recent DHS 2021 data conducted by CAPMAS. Further research could encompass all indicators of childhood malnutrition by utilizing the latest datasets available in Egypt. Lastly, since the inequality measure of childhood stunting and underweight is calculated based on the wealth index, the research should exclude the wealth index from the predictors of disparities in childhood stunting and underweight.

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