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The Association between Fertility and Household Food Insecurity among Reproductive-Age Women in Lideta Sub-City, Addis Ababa, Ethiopia

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Abstract

Introduction: Family planning and women's health are vital to food security and nutrition. Enhanced reproductive health fosters better nutrition and facilitates the attainment of a sustainable family size. This study aims to examine the association between household food insecurity and fertility in Lideta Sub-City, Addis Ababa, Ethiopia, and identify correlating factors.

Method: A community-based cross-sectional study was conducted on 651 reproductive-age women in three randomly selected Woredas (districts) from a sub-city from February to March 2023. Six Ketenas (villages) were selected using a probability proportional to size technique from three Woredas. Data were collected through a validated survey by trained individuals, and household income and expenditure were used to measure food insecurity access. The Pearson chi-square test (χ^2), independent t-test, and logistic regression were used to examine the association between household food insecurity and fertility, considering other covariates.

Result: The study area had a 68% prevalence rate of food insecurity. The study found that five factors affect the likelihood of food insecurity in households. Household size, the sex of the household head, women's education and income, and the number of dependents increase the risk of food insecurity at $P < 0.05$.

Conclusion: Urban food insecurity is a growing issue caused mainly by high urban poverty rates. Responsible family planning, resulting in smaller households, is the key to tackling the problem. Therefore, the city administration and every stakeholder should adopt measures to enhance food security and create prospects to improve the living standards and economic performance of urban households.

Keywords

Fertility, Food insecurity, Lideta Sub-City, Addis Ababa, Ethiopia

Introduction

The world's population has experienced a remarkable increase, growing from 1 billion in 1800 to a staggering 8 billion today. The less developed countries of Africa, Asia, and Latin America now account for 85 percent of the world's population but account for 99 percent of global population growth [1]. The highest fertility rates and higher childhood mortality rates are found in the poorest and most food-insecure countries [2,3]. Surprisingly, the world is still home to over 800 million undernourished people, over 97% of whom live in developing countries. The rate of undernourishment worldwide is on the rise, affecting 9.9% of people globally [4].

Sub-Saharan Africa, with a population of 1.3 billion (17% of the world population), has by far the fastest-growing population of any major region in the world [1]. Despite significant advancements in reducing child mortality and enhancing life expectancy, reproductive health among women residing in developing nations, particularly in sub-Saharan Africa, remains insufficient, leading to persistently high birth rates. On average, women residing within the region have about 4.26

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children [1]. The widespread adoption and utilization of family planning methods have become instrumental in mitigating the growth of the population as well as addressing the issues of hunger and malnutrition [5].

Ethiopia remains one of the world's most impoverished and food-insecure nations, with 30.8% of its population living below the poverty line for sustenance [6]. The majority of urban households in Ethiopia, comprising approximately 80%, exhibit food insufficiency and rely heavily on market mechanisms to procure their food requirements. Following the Interim Report on Poverty Analysis Study in Ethiopia (2017), there was an estimated 14.8% proportion of the population in urban areas categorized as being below the food poverty line. In Addis Ababa, the estimated proportion of individuals experiencing food insecurity, defined as those unable to purchase consumption items that yield a minimum of 2,200 kilocalories, is 19.1% [7]. Similarly, the proportion of people suffering from food insecurity in the Lideta sub-city, which is considered to be one of the most deprived sub-cities in Addis Ababa, was estimated at around 29.3%. This means that about one-third of the population falls below the threshold of adequate food intake [8]. The share of total household income spent on food is around 42.2% [9].

Urban food insecurity is mostly chronic, combined with higher urbanization rates, food price changes, and market instability [2,10], and persists for long periods, if not lifetimes [3]. It is closely associated with urban poverty. As the study conducted in Ethiopia showed, chronic food insecurity in households can result in persistent malnutrition as a consequence of the inability to secure adequate and sustained access to food [11]. In situations where there is a surge in food prices, households that do not engage in food production, particularly those located in urban areas, are compelled to procure food through alternative means, predominantly through purchase. The purchasing power of households is contingent upon their income, so a rise in the prices of food can have adverse effects on their ability to access sufficient amounts of food [2].

Indisputably, households experiencing poverty typically encounter a plethora of challenges, such as unfulfilled family planning demands, families with sizes that exceed their preferences, and inadequate financial resources to afford the necessary quantity and quality of nourishing sustenance to meet the needs of their families. The condition of poverty precipitates inadequate access to family planning and, in turn, serves as a consequence thereof. Families with lower economic status experience limited availability of family planning services. They allocate a greater portion of their budget towards sustenance while expending a lesser amount of money per individual on food as opposed to affluent households [5,12]. Though the total fertility rate in Addis Ababa is relatively better compared to other regions of Ethiopia and is estimated at 1.8 children per woman, the fertility rate is still high at the national level, which is 4.6 children per woman [13]. A crucial consideration toward maintaining sustainable population growth that does not burden the world's finite resources needs foremost attention to the interrelationship between food security and reproductive health [14].

Economic, social, and demographic factors like age and sex of household head, income, education, work status, age at first birth, age at first marriage, number of children ever born, and family size affect food insecurity [14-20]. Among the various theories of population and fertility, Neo-classical Microeconomic Theory [21] and Demographic Transition Theory [22] are considered the most useful in examining the interrelationship between food insecurity and fertility. These theories center on the principal determinants that are responsible for the elevated fertility rates observed in developing nations. This phenomenon is commonly attributed to a dearth of economic advancement. According to demographic transition theory, high infant and child mortality, poor agricultural productivity, low contraceptive use, and the relatively low social, educational, and employment status of women contributed to the high fertility norm.

Although various studies have been conducted to show the effects of food insecurity on child health and development [23,24], education performance, and intellectual development [25], external and internal behaviors [26], and stunting, wasting, and underweight [27-30], insufficient emphasis has been placed on investigating the association between urban household food insecurity and demographic outcomes within scholarly discourse. This study aims to investigate the association between urban household food insecurity and fertility, providing policymakers and development stakeholders with valuable insights to guide well-informed decision-making and effective interventions.

Materials and Methods

Study design and area

A cross-sectional study design was used to collect data from February to March 2023 in Lideta Sub-City. Borders are shared with Addis Ketema, Arada, Kirkos, Nifas Silk-Lafto, and Kolfe Keranio. The sub-city is divided into ten Woredas. The study randomly selected three Woredas and collected data at respondents' residencies in the sub-city. Lideta Sub-City covers 9.18 sq km with a population of 284,208, including 134,372 males and 149,836 females. The study focuses on a highly populated and poor district in Addis Ababa with a population density of 30,960 people per square kilometer [31].

Sampling design and procedure

Sample size was determined by the single mean formula with the assumption that the single population proportion experiencing food insecurity is often

estimated to be 50%, with a margin of error of 5% and a 95% CI ($z_{1/2}$ = 1.96). A design effect of 1.5 for cluster sampling and some allowance were also added, considering the variability in the study population and controlling non-response rates and outliers, respectively. The sampling strategy of this study was operationally predicated on the pre-established enumeration areas of the sub-city, which had been delineated by the central statistical service of Ethiopia. Samples are drawn from a population using a multi-stage random sampling technique. In multistage random sampling, three Woredas are randomly selected at the first stage. Secondly, each Woreda comprises different Ketenas, and from each of these three Woredas, two Ketenas are selected using the random sampling method. In the last step, a total of six Ketenas were there to select the final 651 respondents. The total sample, which was selected using a multi-stage random sampling technique, was divided among all those Woredas and then among Ketenas proportionally to their population. The households from the respective Woreda were selected by systematic random sampling based on a sampling frame of house numbers developed from Ketena records. Individual respondents of women within the age range of 15 to 49 years who would be either household heads or spouses and gave birth within the last 15 years preceding the survey were sampled. If the selected household was found to be closed, the household with the next number on the list was selected, and this continued until the required number of sampled women was acquired.

Study variables

The outcome variable of this study is household food insecurity. This is about having the required financial resources that are necessary to ensure consistent access to food for the purpose of satisfying dietary, nutritional, and societal requirements. Therefore, households that could afford to purchase consumption items that generate 2,200 kilocalories (the daily caloric requirement) are food secure, or else they are food insecure. Predictor variables and covariates include demographic and socioeconomic variables such as the sex of the household head, the woman's education and income, the age at first birth, the age at first marriage, household size, the number of dependent members, the number of children ever born, and employment status.

Analytical methods

The dependent variable is binary, taking a value of zero for food-secure households and one for food-insecure households. The explanatory variables can either be continuous, categorical or binary. The logistic regression model is specified as

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots \beta_\eta X_\eta + \mu_i,$$

The present study posits that Zi, a multidimensional vector containing n explanatory variables. The model is constructed using an intercept β_0 and a series of n slopes, β_1, β_2, …, β_n, which interact with the covariates contained in the vector X, representative of relevant household characteristics. Consequently, the aforementioned econometric model was employed in this research and subjected to examination with regard to potential variables presumed to have an impact on the occurrence of household food insecurity.

The data were collected through the utilization of KoboCollect 3.5 and subsequently entered into the SPSS 24 software with caution. The method of data cleansing was employed to assess the correctness and inconsistencies in order to ascertain the completeness and errors of the data. The data were categorized and sorted to facilitate their analysis. The Chi-square test (χ^2) was employed to identify the variables that exhibited a statistically significant association with household food insecurity. In this study, the variables that exhibited a p-value of less than 0.25 were subjected to a thorough examination for multicollinearity issues utilizing the variance inflation factor (VIF). Following this preliminary assessment, the identified variables were included in the logistic regression model to determine their effect on the outcome variable (household food insecurity). The adjusted odds ratios, along with their respective 95% confidence intervals, were computed. A significance level of 0.05 was deemed statistically significant in the present study. To identify the best independent predictors of household food insecurity, logistic regression with a stepwise selection (LR) method was used.

Measurement of household food insecurity

The caloric value of foods that meet the threshold requirement of 2,200 kilocalories (kcal), as recommended by the Food and Agriculture Organization [33], for enabling healthy and moderately active adult living is determined by their corresponding national average prices to establish the food poverty line. Although the 2016 Interim Poverty Analysis Report estimated the cost at 3,772 Birr per year per adult person in Ethiopia, this price is not feasible and had to be adjusted based on current food prices. However, the overall percentage of inflation has reached 122.2% from June 2016 to January 2023; computing the amount of food inflation year by year brings the estimated cost to Birr 11,524.52 per year per adult [34,35]. Accordingly, the cost of one kilocalorie is estimated to be Birr 0.0143.

In this article, the national food poverty line was used to measure food insecurity status. The food poverty line determines whether a given household can have enough daily food expenditure (total household income spent on food) to meet its members' minimum daily calorie needs. Therefore, households that cannot afford the money or are unable to source consumer goods for these daily calorie needs are considered to be food insecure. However, individual access to food

depends on household food distribution and gender parity, which in practice means that consumption patterns are not uniform [36]. Often, children, women, and older household members consume less food compared to those male adults [37]. A per capita adult equivalent estimate is obtained by dividing the total daily income or calories by all household members, assuming a uniform food consumption pattern for families with different compositions. Therefore, if this adult person equivalent estimate were taken, Birr 31.46/2,200 kcal would be used as a standard threshold to identify food-insecure households from those that are not. But such an approach could make households food-insecure that were almost certainly not insecure since they fail to consider the presence of household members with distinct energy needs. Thus, in this article, an adult-equivalent estimate of the calorie availability scale that has an adult-equivalent conversion factor was used (Annex 1). The application of an adult-equivalent scale effectively narrows the variance between estimated and actual food intake, thereby enabling the discernment of the relative contributions of distinct household members towards the overall dietary pattern of the household, which is not feasible with the utilization of per capita metrics. Household income and expenditure survey is standard and widely applicable to measure household food insecurity and poverty at the household level [38-40]. The World Bank, USAID, the International Development Association (IDA), and the Ethiopian government have applied this monetary approach to measure household food insecurity/poverty related to the urban productive safety net program in urban Ethiopia [41]. Moreover, the government of Ethiopia and other developing countries have also applied this monetary approach to food poverty and insecurity analysis, identifying the prevalence, gap (shortfall), and severity of household food insecurity [7, 42].

Results and Discussion

Demographic and socio-economic characteristics of respondents (categorical variable)

As shown in Table 1, a total of 651 households participated in the study. Of these, nearly half, or 47.5%, of households are headed by women. The majority of respondents (39.6%) attended secondary school, followed by primary school (33.8%). In addition, 8.0% had a diploma or higher and 11.8% had no educational qualifications. Regarding their employment status, the majority (62.5%) of respondents are engaged in any income-generating activities, while 37.5% of the respondents were not employed in any labor sector at the time of the survey. Moreover, measuring a household's food insecurity status also revealed that 68% of the sample households were food insecure and the remaining 32% were food secure (Table 1).

The result of the study also shows that there is a significant mean difference in age at first birth between food-secure and food-insecure households ($t(607) = 3.421$, $p < 0.001$). The mean age at first birth for food insecure households was 1.413 (95% CI, 0.645 to 2.387) years lower than the age at first birth for food secure households. Household size in food-insecure households was also significantly higher than in food-secure households ($t(4.29.74) = 10.230$, $p < 0.000$). The

Table 1: Demographic and socio-economic characteristics of respondents (categorical variable).

Variables	Category	Food security status			Chi-square test	
		Food insecure 443(68%) n(%)	Food secure 208(32%) n(%)	Total 651(100%) N(%)	X^2	Sig.
Sex of household Head	Female	147(48)	159(52)	306(47.5)	18.09	0.000*
	Male	61(17.7)	284(82.3)	345(52.5)		
Women education	Uneducated	8(10.4)	69(89.6)	77(11.8)	81.52	0.000*
	Informal	13(29.5)	31(70.5)	44(6.8)		
	Primary	46(20.9)	174(79.1)	220(33.8)		
	Secondary	101(39.1)	157(60.9)	258(39.6)		
	Above Diploma	40(76.9)	12(23.1)	52(8.0)		
Women income	0-1500	56(18.2)	46(24.1)	40(51.3)	150.00	0.000*
	1500.01-3000	64(87.7)	251(81.8)	145(75.9)		
	3000.01-4500	38(48.7)	9(12.3)	307(47.3)		
	> 4500	191(29.4)	78(12.0)	73(11.2)		
Women Employment status	Unemployed	56(23.0)	188(77.0)	244(37.5)	14.54	0.000*
	Employed	152(37.3)	255(62.7)	407(62.5)		

*P < 0.25 significant association

Source: Computed based on own primary data (2023)

Table 2: Demographic and Socio-economic characteristics of respondents (continuous variable).

Variables	Food security status	N	Mean	T	Df	Sig	Mean difference	95%CI of the difference	
Household size	0	208	3.14	10.28	429.743	0.000	1.303	1.054	1.552
	1	443	4.44						
Age at first marriage	0	142	22.04	1.731	263.77	0.172	0.643	-0.281	1.567
	1	408	21.39						
Age at first Birth	0	179	24.79	3.421	607	0.001	1.413	0.645	2.387
	1	430	23.29						
Children ever born	0	208	1.41	9.37	481.773	0.000	0.846	0.656	1.036
	1	443	2.26						
No_of_ dependent Members	0	208	1.17	8.98	538.088	0.000	0.726	0.567	0.884
	1	443	1.89						
Monthly income	0	207	3466.71	10.53	246.774	0.000	1850.33	1504.27	2196.40
	1	443	1616.37						

0 = Food secure 1 = Food-insecure

Source: Computed based on own primary data (2023)

mean household size for food-secure households was 1.303 (95% CI, 1.048 to 1.552) lower than the mean household size for food secure households. The number of dependent members in food-insecure groups was also higher than the number of dependent members in food-secure households (t (538.00) = 8.981, p < 0.000). The average numbers of dependent members in food-secure households were 0.726 lower than the average numbers of dependent members in food-insecure households (95% CI, 0.567 to 0.884). Similarly, there is a significant difference in monthly income between food-insecure and food-secure households (t(246.77) = 10.531, p < 0.000). The mean women's income for food-insecure households was 1850.33 Birr lower than the mean monthly income for food-secure households (95% CI, 1504.70 to 2196.40). The results of the survey also showed that there is a significant difference in children ever born between the two groups at p < 0.05 (1.41 versus 2.26), while the difference in mean age at first marriage between food-insecure and secure groups was not significant at P < 0.05 (Table 2).

Factors of household food insecurity in Lideta Sub-City, Addis Ababa, Ethiopia

A Pearson chi-square test and t-test were conducted to ascertain potential variables for inclusion in the logistic regression. Utilizing specific criteria, the sex of the household head, women's education, women's income, age at first birth, household size, number of dependent members, children ever born, and employment status were deemed suitable for inclusion in the logistic regression analysis. After adjusting for confounding factors, including the sex of the household head, women's education, women's income, household size, and number of dependent members, significant statistical relationships were observed with household food insecurity at p < 0.05 (Table 3). Attempts have been made to evaluate the fulfillment of the necessary assumptions required for the implementation of logistic regression. In this regard, Hosmer and Lemeshow's goodness-of-fit test was performed to check the fitness of the model and was found to be 0.057. The Nagelkerke R-squared model explained 52.5% of the variation in the observed data, explaining covariates of food insecurity in urban households.

Based on the findings, households headed by male individuals were nearly 1.812 times more likely to be food insecure as compared to households headed by female individuals. Household size is positively associated with the likelihood of being food insecure at a high level of significance p < 0.05. One unit increase in household size, which is mostly dependent, is associated with an increase in the risk of household food insecurity by 1.604 times. The findings of the logistic regression analysis indicate that the probability of experiencing household food insecurity varies across different levels of education. The findings of this study indicate that an incremental increase in the level of education achieved by women, from no education to attainment of primary education, secondary education, diploma, and tertiary education, correspondingly decreases the likelihood of food insecurity by 86.3%, 94.1%, 92.6%, and 99.6%, respectively.

Moreover, the level of women's income is inversely related to household food insecurity, and the relation was found to be statistically significant for all groups except for Birr 1000-1500. The risk of food insecurity reduces with increasing levels of women's income. Increasing the income of Birr from 0-1500 to 3000.01-4500 and above 4500 reduces the risk of food insecurity

Table 3: Predictors of household food insecurity in Lideta Sub-City, Addis Ababa.

Demographic and socio-economic variable	Household grouping	B	Sig.	Adjusted odd ratio(AOR)		
				EXP(b)	95% CI for EXP(b)	
					Lower	Higher
Sex of household Head	Male	0.595	0.033	1.812	1.050	3.129
	Female	1.00				
Education of household head	Informal	-1.768	0.075	0.171	0.024	1.195
	Primary	-1.985	0.013	0.137	0.029	0.652
	Secondary	-2.829	0.000	0.059	0.013	0.271
	Level/diploma	-2.600	0.001	0.074	0.016	0.355
	Degree &above	-5.540	0.000	0.004	0.001	0.023
	Uneducated	1.00				
Women income	1500.01-3000	0.350	0.231	1.419	0.800	2.518
	3000.01-4500	-0.816	0.020	0.442	0.222	0.880
	> 4500	-2.515	0.000	0.081	0.033	0.199
	0-1500					
Household size		0.472	0.000	1.604	1.268	2.028
No of dependent		0.463	0.005	1.590	1.148	2.201

1.00 = Reference category

Source: Computed based on own primary data (2023)

by 55.8% and 91.9%, respectively (Table 3).

Discussion

The headcount ratio reveals that 68% of the sample households were food insecure. This finding was comparable with studies done in Addis Ababa City and Areka Town, Ethiopia, which reported 71% and 69.6%, respectively [16,43]. However it was higher than the findings from the Woliso district (28.4%) and lower than the finding from Addis Ababa city (75%) [44,45]. The observed discrepancy in the results could potentially be attributed to variances in study areas and data acquisition periods. This assertion may have potentially underestimated the scale and severity of the issue at hand. The utilization of seasonal data with multiple surveys may provide enhanced evidential support [46,47].

The statistical analysis indicated that the level of education was a significant determinant of urban household food insecurity at a level of statistical significance of P<0.005 The findings reveal that household heads possessing higher levels of education are more inclined towards achieving food security in comparison to their uneducated (illiterate) counterparts. This finding coincides with studies conducted in different regions of Ethiopia [16,17,45,48]. The plausibility of this reason lies in the fact that education is believed to have a significant impact on various aspects of individual and societal progress, including but not limited to enhancing work proficiency, developing competencies, fostering income diversification, and stimulating vision in creating a conducive environment to educate dependents. This strategy can ultimately pave the way for better living conditions to be realized over the long term, which is in sharp contrast to the dire circumstances typically experienced by individuals lacking such education [43,49].

The sex of household heads was identified as statistically significant in determining household food insecurity at a significance level of $P < 0.05$. The results of the study indicate that households led by men exhibit a greater level of food insecurity as compared to those led by women. This finding resonates with the previous study conducted in Dire Dawa city, Ethiopia, and Kindo Didaye District, Southern Ethiopia [50,51] but against other evidence [15,52-54]. The observed difference can plausibly be attributed to variations in socio-economic factors across study areas and the progression of female empowerment in the spheres of professional employment and strategic influence [55].

The present study revealed that households characterized by smaller household sizes are more likely to exhibit food security, in contrast to households with a larger number of household members. Other things being constant, one unit of incremental change in household size increases the risk of household food insecurity by almost 1.604-fold. This finding is consistent with studies [15-17,47], but in contrast with the findings of prior studies [43,45,56]. The potential explanation for this phenomenon is the combination of the current high unemployment rate, limited employment prospects, and low wage rates, resulting in an additional household member dividing already restricted resources, ultimately leading to household food insecurity. Sharing meals

amongst extended family members has the ability to impact the quantity and quality of meals consumed by children and women [15,47,51].

Similarly, dependent family members increase the risk of household food insecurity by 1.590 times. This finding was comparable to findings from Addis Ababa and the Woliso district of Ethiopia [44,45,47]. This can be explained by the fact that dependent family members do not contribute to the income generated for food purchases, while they additionally share food and family costs such as school fees, clothing and milk for children, and healthcare costs for elderly dependent family members.

Furthermore, women's income was also found to be significant in determining household food insecurity at $P < 0.05$, and this finding corroborates some studies [15,17,43]. This might be attributed to the diminished purchasing capacity of households belonging to the low-income bracket, which impedes their ability to procure food provisions on a consistent and timely basis to cater to their familial requirements [43,47].

Finally, the study findings have been reinforced by the utilization of rigorous statistical analysis techniques and the attainment of high response rates in the data collection process. Moreover, utilizing a thoroughly validated, structured questionnaire could have effectively mitigated the presence of instrumental and inter-rater biases. Despite the extensive exploration of the interrelationship between household food insecurity and fertility while adjusting for potential confounding variables, the cross-sectional design of the dataset restricts our ability to draw definitive causal inferences between outcome and independent variable.

Conclusions

The present study has determined a substantial prevalence of food insecurity among households in urban areas, which has been linked to various factors such as the insufficient education level of the household head, the larger household size, the presence of dependent members in the household, and a lower monthly expenditure on food consumption by the household. Consequently, it is of utmost significance that all relevant stakeholders prioritize the implementation of integrated and feasible interventions aimed at ensuring food security in urban areas, with particular attention to impoverished households, as a means of mitigating the issue of food insecurity among urban households. In addition, food security interventions should incorporate appropriate strategies to increase the use of family planning, particularly in areas of food insecurity. Therefore, stakeholders are expected to engage in collaborative and coordinated efforts across various sectors to address the challenges of food insecurity and fertility issues. Such efforts will prioritize the expansion of women's education, voluntary family planning initiatives, job creation programs, and initiatives aimed at strengthening women's economic empowerment. Continuous, long-term surveys and standardized measurement tools, such as the Household Food Insecurity Access Scale, need to be employed in future studies to ascertain causal relationships among variables and discern the various levels of food insecurity. This is imperative to establishing a comprehensive understanding of the phenomenon under investigation.

Authors' Contributions

E.G: Wrting original draft, Conceptualization, Methodology, Data Collection, and Formal analysis, T.B and M.A Writing _review and editing. All Authors have approved the manuscript.

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Ethics Approval and Consent to Participate

A letter of support was obtained from Addis Ababa University, College of Development Studies, and the Center for Population Studies. Letters were distributed to all respective Woredas. Informed consent was obtained from participants before the commencement of data collection. The purpose of the study was explained to both the respondents and the Woreda experts.

Availability of Data and Materials

The datasets analyzed during the current study are available from the corresponding author on reasonable request.

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Conflict of Interests

There is no competing interest.

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Annex 1: Conversion factor for estimation of adultequivalent calorie requirements

Age (years)	Adult–equivalent conversion factors
Newborn	
0-1	0.29
Children	
1-3	0.51
4-6	0.71
7-10	0.78
Men	
11-14	0.98
15-18	1.18
19-24	1.14
25-50	1.14
51+	0.90
Women	
11-14	0.86
15-18	0.86
19-24	0.86
25-50	0.86
51+	0.75

Source: Claro et al. (2010). Per capita adult-equivalent estimates of calorie availability in household budget surveys.

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