

Women's Empowerment, Food Security, Nutrition Transition in Africa

Subjects: Family Studies | Public, Environmental & Occupational Health

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Despite mounting recognition of the essential role of women's empowerment in household dietary and nutrition changes, the diversity of culture across African countries presents ambiguity as to whether its impact is experienced homogeneously across the continent. With their prominent role in the kitchen and household food preparation, women offer an important avenue for addressing several challenges in relation to the food subsector. Empowering them with the necessary capabilities can lead to changes in various aspects of households' dietary patterns. Studies of Africa indicate that empowering women through physical capital, economic agency, and sociocultural factors can have a positive influence on either food security, diet improvements or the enrichment of diet-related health.

women's empowerment

food security

nutrition transition

Africa

1. Women's Empowerment and Household Food Security

Africa has twice the number of people who experience hunger than any other region in the world ^[1]. Improving food security in the region has therefore been at the center of both national and international efforts. Women's empowerment is among the interventions that have been undertaken, with the view that a power balance in the household leads to a healthier allocation of resources and thus can mitigate a number of household setbacks, including food challenges. Empirical data from the continent mostly support the assertion that an improvement in food security is positively associated with the majority of the domains of women's empowerment. Specifically, the literature ^{[2][3][4]} acknowledges the role of empowerment in terms of physical capital and economic agency, sociocultural factors such as education, and cultural values on the enhancement of food security within families. In South Africa, for instance, women's empowerment in terms of the three mentioned areas has reduced the vulnerability of food insecurity in the form of household food consumption expenditure per adult ^[5]. Similarly, in Ghana, empowerment through education and decision-making was shown to enhance food security measured by the food insecurity experience scale (FIES) ^[6].

Surprisingly, despite the pronounced consensus on the positive associations between most of the indices of empowerment and food security, there is ambiguity on the efficacy of financial capital empowerment. In South Africa, for instance, women's financial capital empowerment seemed to increase the possibility of households being food insecure in the future ^[5]. It has been argued that with high scales of financial capital empowerment, women tend to rarely invest in other capital assets, thus becoming prone to future food insecurity.

Generally, experiences from the region show that the severity of food insecurity can certainly be minimized through women's empowerment, using different empowerment channels. The fact is that most of the literature in Africa has focused on women's empowerment in agriculture (WEIA). Therefore, more research is needed to provide extensive coverage of women across the economy.

2. Women's Empowerment and the Increasing Popularity of a "Western Diet"

Women's increasing role in families is also associated with the dynamics of household food consumption [7][8][9]. It is argued that women possess a distinctive food taste and preference to men, largely due to their prominent kitchen role and, consequently, their vast knowledge of dietary issues [8][9]. Additionally, women's empowerment by itself may facilitate fresh knowledge creation, specifically in terms of nutritional education, which in turn can augment the demand for certain foods. This is well-explained by Kadiyala et al. and Malapit et al. [10][11] in the fourth of six popularly recognized pathways between agriculture and nutrition. Therefore, while it is imperative to understand the role of women's empowerment in household nutrition improvement, it is likewise important to understand whether such empowerment comes with consumption pressure for certain food items.

One notable observation on food consumption changes, following women's empowerment, is the rapid dietary change in low- and medium-income countries (LMICs) toward "Western diets" [12][13][14]. This means an increase in the intake of refined carbohydrates, fats, added sugar and animal-sourced foods at the expense of diets rich in coarse grains, vegetables and legumes. Largely, these westernized diets, which are attracting attention in LMICs, intensify the risk of certain health problems. Essentially, the food consumption convergence certainly deepens the paradox between women's empowerment and dietary nutritional improvement in the society. Westernized foods such as bread, pasta, candy, cakes, cookies, ice cream, butter and others are increasingly becoming common in LMICs and attract women more than men [15][16]. The fact that production in LMICs is characterized by labor-intensive work means that men are still proportionally more loyal to traditional foods rich in starch than women [17]. Moreover, according to Kadiyala et al. [10], through pathway 2, income is an important determinant in influencing nutritional outcomes. Women's limited income due to low participation in economic activities [18] might also explain the difference in the highlighted food consumption between gender. Both these conditions are fairly distinctive in LMICs, particularly in Sub-Saharan Africa (SSA) [19], making it difficult to form a conclusion on the association between women's empowerment and dietary and nutritional improvements.

Several studies have quantified the differences in food consumption patterns between men and women in Africa. For instance, Ambikapathi et al. [20] revealed that the daily meal for men contained a higher proportion of energy than the meal for women. This difference in food preferences between gender is also observed in Berbesque [21]. In their study of a hunter-gatherer community, a preferential difference was observed for berries and meat, whereby women preferred the former more than the latter, while men preferred the opposite. Similarly, Plataroti [22] showed that women in Tanzania preferred to consume less sugar and fewer alcoholic drinks and more vegetables and fruits than men. Although these three studies do not discuss women's empowerment, their findings certainly

illustrate the likelihood of household dietary substitution when empowerment occurs. With women's empowerment, there is the possibility for the household to switch consumption toward foods that are highly preferred by women.

Therefore, although studies that empirically analyze the cause–effect relationship between women's empowerment and food consumption changes in African households are limited, the existing body of literature slightly indicates the possibility of switching diets following women's empowerment. There is a need to carry out in-depth analysis in order to determine whether causality actually exists.

3. Women's Empowerment and Dietary Diversity

A household's dietary diversity is another area, apart from general food security, with which Africa contends. Inadequate dietary diversity has aggravated regional epidemiological transition. According to the *Global Nutrition Report* [23], an average of 9.7% and 9.9% of adult men and women, respectively, live with diabetes. Likewise, 9.2% and 20.7% of adult men and women, respectively, suffer from obesity, and the cases of mineral and vitamin micronutrient deficiency are still alarming. Furthermore, approximately 13.7% of all infants are born with a low weight.

Furthermore, given their prominent roles in household management, empowering women is equally intended to challenge the problem of limited diets in families. In Africa, experiences of women's empowerment have been largely supportive, with only minor indecisive observations. In Nigeria, for instance, Olumakaiye and Ajayi [24] revealed that women's empowerment through education increased household food diversity, which was measured using the food frequency table. Similarly in South Africa, using a list of 17 foods, Murugani and Thamaga-Chitja [5] disclosed that women's input into production and public speaking increased dietary diversity. Moreover, in assessing the number of food groups consumed by households in a 24 h period, Quisumbing et al. [25] posited that empowerment in income decisions and autonomy in production was associated with household dietary diversity in some selected African countries. Chege et al. [26] posited that women's empowerment in agriculture in countries of East Africa led to a more diverse diet in households. In Ethiopia too, Yimer and Tadesse [27] disclosed that all ten domains of WEIA resulted in households' diversity of diets. Flodqvist [28] claimed that empowering women, particularly through nutritional education, led to more diverse and balanced diets in Tanzania. According to O'Neill [29], women generally invested larger proportion of their income in their families than men. Thus, with empowerment and increased control over resources, it is rational for the underlined literature to indicate the presence of a positive association between women's empowerment and dietary diversity.

On the other hand, as with the case for food security, women's empowerment in terms of access to credit has occasionally been witnessed to reduce dietary diversity, particularly in South Africa [5]. It is argued that women, especially in African rural areas, are more involved in informal money-lending schemes, as these areas have limited financial capacity to borrow large amounts of money [5]. As a result, the money borrowed is insufficient for procuring the inputs of production. They instead borrow as a coping strategy during food insecurity periods.

4. Women's Empowerment and Nutritional Improvement

Overall, there is a clear consensus among existing studies in Africa on the association between women's empowerment in different contexts and nutritional improvements, be it at household level or for children or women themselves. Galie et al. [30], for instance, concluded that women's control of resources in Tanzania generated a relatively higher proportional of household expenditure than men's control of resources. Given the fact that women take better care of the household, it is implied that more control over resources for women may lead to an improvement in diet and nutrition. A similar qualitative study by Mindy et al. [31] ascertained that women perceived empowerment through control over income as the necessary pathway to improving family nutrition. Further research by Galie et al. [32] revealed that food security in terms of the household food insecurity access scale (HFIAS) and nutrition were positively associated with three domains (access to and control over land and livestock, control and use of income and workload, and control over own time) of empowerment. Additionally, Jones et al. [33], realizing that recommended body mass index (BMI) and blood hemoglobin level (Hb) were associated with healthy dietary intake, undertook a study in East African countries on their nexus with women's empowerment. All three indices (instrumental agency, intrinsic agency and assets) of empowerment that were used in the study were positively associated with BMI and Hb, suggesting that empowerment may act as a crucial driver of nutritional improvement. Furthermore, underlying the importance of empowerment, a milk-based intervention research study [34] noted that unless women had control over resources, the intervention did not necessarily cause nutritional improvement, particularly among children. Other studies [35][36] also disclosed the existence of positive relationship between women's empowerment and household nutritional improvement.

Despite the usefulness of these results, especially regarding their consistency, the qualitative nature as well as the light methods of correlation and regression analyses employed by the existing studies hindered the establishment of the empirical mechanisms that explained this nexus of women's empowerment and the observed nutritional improvement. This lack of clear understanding of the mechanisms through which empowerment affects household dietary diversity and nutrition, as pointed to by Galie et al. [32], may weaken concerted efforts towards the realization of the fifth sustainable development goal. Therefore, while there is enough evidence on the relationship between women's empowerment and household nutrition and dietary improvements, it is still worth conducting further research that will assess the impact of each channel, especially for policy reasons.

5. Women's Empowerment and Household Food Expenditure Allocation

An additional and important observation in regard to the improvement of dietary diversity is the food consumption and expenditure allocation in households. The question of which specific food groups are becoming increasingly popular following women's empowerment is vital. Given that the region is already in a dire situation of food insecurity, the increasing demand for some food groups might further escalate the problem. Similarly, since Africa is registering a mounting number of women's empowerment programs, the knowledge of whether empowerment leads to a rising demand for certain food groups is crucial for firms in deciding what to produce.

The previous global literature posits that empowering women, especially through the economic domain, has led to improvements in both child and general household nutritional status as compared to when men are the sole income contributors [33][37][38][39][40]. One notable study about women's empowerment and the affected food groups in terms of increasing demand was by Onah et al. [36], which included five Sub-Saharan African countries. The study employed the WEIA, with its ten domains. It established that empowerment in terms of autonomy for women who were cohabitating with their husbands increased the consumption of vitamin A-rich leafy greens, vitamin A-rich fruits and vegetables, dairy and dairy products, flesh protein, and eggs. On the other hand, empowerment in terms of the inputs of production increased the consumption of vitamin A-rich products, dairy and dairy products, fruits and vegetables, grains, and tubers. Lastly, empowerment in public speaking was associated with an increase in the consumption of fruits and vegetables and vitamin A-rich products. The demand magnitude of these food groups, however, varied from one country to another.

Despite the limitation of the studies on the variation in demand for particular food groups following women's empowerment, an earlier-cited reference certainly illustrated the possibility of increased demand for some food groups. This implies that, with an increase in women's empowerment initiatives, the demands for some food groups in Africa are estimated to further improve. Meanwhile, from the above-cited reference, women's empowerment seems to strengthen the demand for healthy food groups.

6. Women's Empowerment and Diet-Related Health

The quality of a diet plays an essential role in mitigating many chronic diseases, such as hypertension, diabetes, certain types of cancer, and cardiovascular diseases. Some human health disorders trace back to childhood feeding practices; thus, a proper diet and food consumption during infancy is regarded as preventive therapy for future health problems. In this regard, the question of whether women's empowerment can improve household health status through diet is of particular importance. Observations from empirical studies have indicated that women's economic empowerment increases dietary diversity, as well as the World Health Organization (WHO)'s measurements of minimum acceptance diets and minimum meal frequency among household children in SSA [40]. Another study in Ghana revealed that empowering women through the ownership of assets, access to and decisions on credit, leisure time, autonomy in production, and group membership was associated with a healthy BMI score [41]. Similarly, Delano [3] argued that women's empowerment through education positively affected yields, thus reducing malnutrition cases in Africa. Equally, Quisumbing et al. [25] posited that empowerment in terms of autonomy in production, decisions in agricultural activities, income decisions and ownership of agricultural assets were associated with lower BMI, while public speaking and leisure led to a higher BMI in Africa. Wu [41] found that children in families where the mother was the head of the household or households where the mother had higher bargaining power had higher BMIs than their counterparts whose mothers had less power.

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