



Food Insecurity and Its Effects on Women's Health: Undernourishment, Physiological needs, HIV/AIDS and NCDs

Md. Ashrafuzzaman¹, Md. Sayedur Rahman²

¹MSc in DS, Lund University, Sweden and Integrated MSC in Climate Change, Lisbon University, Novo University of Lisbon, Portugal and University of East Anglia, UK and PhD Candidate at the University of Lisbon, Novo University of Lisbon, Portugal and University of East Anglia, UK & Associate Professor, Department of Anthropology, University of Chittagong, Chittagong-4331.

²Associate Professor, Department of Political Science, Faculty of Social Sciences, Begum Rokeya University, Rangpur -5404, Bangladesh
ashrumds@gmail.com, sayedur34@gmail.com

Abstract: *Food insecurity is threatening populations with its implications on health and nourishment not only in rural but also in urban areas as the poverty patterns shift from developing countries towards rest of the world. Women's presence in agriculture and food production as main labors, their responsibility of caretakers of children which affects future of societies, rising numbers of single mothers in the world and female vulnerability due to physiological needs require particular attention to problems of women caused by food insecurity. This study discusses women's health problems related to food insecurity as health is seen as crucial for survival. This paper analyzed "How does food insecurity affect women's health?" Focus group discussions, interviews, observations, and secondary data were all used in this analysis.*

Keywords: *Food Insecurity, Women's Health, Undernourishment, Physiological needs, HIV/AIDS, NCDs*

I. Introduction

Food is vital in people's everyday lives in order to acquire necessary energy to survive and enjoy a healthy life. Women are part of food supply chain from the beginning as gatherers in which they "collect seeds, leaves, eggs; grow foods in gardens and raise animals for family and for income; cook and gather fuel" (Pan et al 2009 :1). However, although women contribute to half of the world's food production, they face more obstacles than men to reach resources such as land, credit, and agricultural inputs and services (Ivers and Cullen 2011). When women possess some rights over lands, most of them are obtained through their relationship with men as fathers, brothers or husbands, and in case of a break in those relationships, women's possessions of rights over lands discontinue (IFPRI 2001:1). Additionally, women are generally less paid than men which constitutes a 17 per cent gap between their wages (URL1). Nevertheless, constraints faced by women are not only economical. Starting from early times, there was always gender inequalities in political and social terms such as politically under-representation; limited access to education, health-care, decision-making, information and technologies; and insufficient social capital. Resulting from reasons stated above, women represent 70 per cent of the world's poor, estimated (ibid). This ratio signifies the importance of elimination of gaps between men and women for development. To "eradicate extreme poverty and hunger" which mostly focuses on rural women as they represent most of the poor due to poor rural infrastructures that forces women to participate not in off-land work but in agriculture and household such as caretaker of children and feeding the family (URL2). For that reason agriculture is main focus to fight with poverty and hunger. However, having access to resources and means -as suggested by

SDGs- does not always result in elimination of hunger. This paper aims to focus on women's health problems related to food insecurity as health is seen crucial for survival. So, the question that will be analyzed is “How does food insecurity affect women's health?”

1.1 Background

According to 1996 World Food Summit, “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO 2006, policy brief). Although the concept was introduced in 1996 with emphasis on nutritious and safe food, and food production escalated in recent decades, food insecurity and hunger still exist. This can be explained with neo-liberal policies of current global food regime that is market-oriented and driven by global food monopolies who seek to increase their profit no matter how and see crisis time as opportunity to call for more market liberalization (Giménez & Shattuck 2011). Starting with Green Revolution, a period in which new machinery, subsidizers and fertilizers introduced to South, gender inequalities deepened as landowners increased their possessions whereas peasants lost their say in food regime (ibid). In 1980s with trade liberalization national agriculture is destroyed, mainly in South, and food monopolies began to control the whole food regime. When the global food crises occurred in 2008, FAO reported world food price index escalated 45 per cent in 9 months (Wiggins in Giménez & Shattuck 2011, p111) which increased hunger in the world tremendously. Outcomes shown in FAO's 2012 report indicating that the most progress in reducing hunger obtained before 2007-2008 is a very strong proof of global food regime's effects on food insecurity throughout the world. Hence, it can be said that food insecurity and its repercussions on people is a prominent topic in development.

II. Review of Literature

2.1 Theory

Since food insecurity has impacts on health which determines future conditions of people as well, Amartya Sen's “*development as freedom*” approach will be used as the conceptual framework. According to Sen (2001), development can be seen as *real freedoms that people enjoy*, which is a counter definition of development that is seen as economic growth, increased personal income or technological improvements. Existence of hunger, malnutrition, gender inequalities and deprivation from education and health-care proves the presence of *unfreedom* in that area which can be seen in developed countries as well. Different types of freedoms -economic, political, social and so on- are there to assist people to develop their *capabilities*. This capability refers to people's choice to value a life they want to pursue and their freedom to reach alternative combinations in this pursuit. In view of health is a part of people's -in this case women's- freedom that affects their capabilities, this paper will look at health problems resulting from food insecurity as “unfreedom”.

“Development as freedom” approach involves “women's agency” in it. Agency approach propose that women should not be regarded as patients who take remedies offered to them, but should be given the agency in which they take responsibility of their actions and decisions. Hence, giving agency to women to choose and take responsibility of those choices means empowerment of women, which will diminish their social deprivation and increase well-being consequently (Sen 2001, p190). And when women become equals with men in terms of given opportunities, freedom will be possible, as well as development.

III. Results and Discussion

3.1 Analysis

The purpose of this paper is to scrutinize the linkages between food insecurity and women's health: undernourishment, physiological needs, HIV/AIDS and NCDs, since especially women suffer from food insecurity due to their vulnerability and physiology. Hence, in this part there will be four sub headlines in analyzing the paper question.

3.2 Undernourishment

2013 FAO Report “The State of Food Insecurity in the World” states that 842 million people are undernourished which makes around one in eight people in the world (FAO 2013, p8) most of whom are women due to generating 70 per cent of the poor. Because women are smaller in size with less muscle average and slower metabolism than men, they need lesser food intakes, and since they necessitate same number of vitamins and minerals, women must fulfill their needs by eating nutritious food (FAO 2000, p9). However, women facing with food security generally cannot meet this requirement and this is a consideration for women both in developing and developed countries.

“A study done among women getting food assistance in Toronto, Canada (Tarasuk 2001)¹ is a good example to explain the relationship between food insecurity and women's vulnerability in a developed country. The research done in women aged between 19 and 48, and 65 per cent of the women were head of the households. Their consumption of fruits and vegetables were related with their food security conditions. Most of them reported poorer health conditions which were longstanding, limitations in their activities, and feelings of deprivation and social isolation together with their food insecurity status. If their food insecurity status was described as hunger, women set forth that they were sending their children to relatives to eat, cancelling some services like telephone and selling possessions.” Women's limited capability to buy food influences their other types of capabilities, such as ownings, TV and telephone service, due to their attempts to find a way to increase capability to buy food. Additionally, it can be derived from this example that food insecurity affects psychological health of females as well as physical health. Females who cannot enjoy the opportunities offered by a developed city like Toronto resulting from their food insecure conditions may feel alienated and distinct from social life which can cause depression and further deterioration of current illnesses.

It is important to mention here that recent economic and food crises resulted in higher numbers of food insecure people in the world. Although all types of crises -from economic to wars and conflicts- affect some parts of the population such as poor, rural and minorities more, their repercussions on women are devastating. Considering women's fragile position in society and their economic difficulties, it is more likely to see increased food insecurity among crises-affected women than men. Data coming from USA demonstrates this increased food insecurity among women between years 2004 and 2012. In 2004 rates of food insecurity with hunger were 9.2 per cent for families with children headed by single women whereas the ratio raised to 12.7 per cent in 2012 and 7.5 was announced for women living alone (USDA ERS 2005, p10 and USDA ERS 2013, p14). However, the number was 7.3 per cent among men in 2012 when the total number reached 20.2 per cent for female-headed households (ibid). Naturally, these rising numbers have marks on female health conditions, especially in terms of obesity which will be discussed later.

Another result that can be driven from increased food insecurity caused by recent crises is women's sacrifice from their own proportion of food. In times that food prices increase, households tempt to cut their expenses on food which constitutes most of their household expenditure so that the only way to reduce expenses is to cut daily intake and diminishing

variety of food. Generally, women sacrifice from their own and skip meals in order to feed other members of the household (IFPRI 2008, p1). Before the price crises, 60 per cent of the households in Bangladesh announced that women skip meals more than men (ibid) which means malnutrition of females, both women and girls in a household, got even more intense after the crises, and this would lead further health difficulties.

3.3 Physiological needs of women

As mentioned above, women have diverse physiological needs than men and one of them is during their reproductive age when more iron and folic acid is needed (WHO, 2011). However, WHO estimated that non-pregnant women facing with anemia is 30.2% worldwide (ibid,p2).

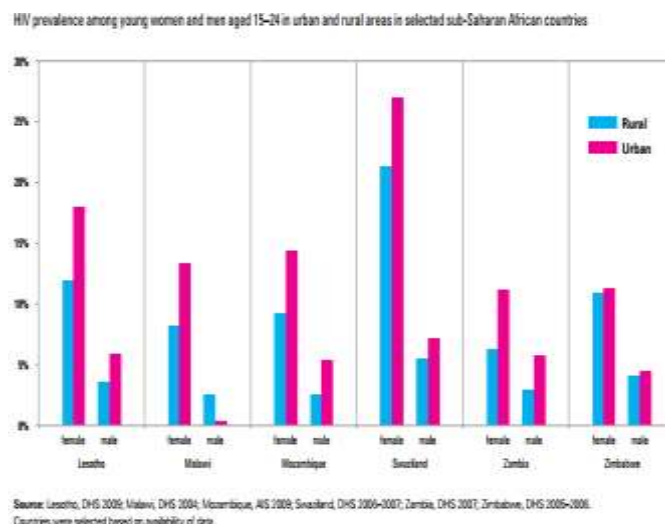
It has different reasons to occur, but half of the cases arise from iron deficiency which can be resulted by “*insufficient iron intake or loss of iron due to bleeding*” (ibid). Anemia caused by iron deficiency increases body's vulnerability to infection and diminishes ability for physical activity and work (ibid). This proves that when women are unable to meet their iron needs which is *found in meat, poultry, fish and foods rich in vitamin C* (FAO 2004, p100) due to lack of access or availability, during their menstruation specially, they lose physical capacity to work or became sick which can cause job losses or inability for agricultural production that in return affect their food insecurity severely.

Second physiologically special period in which female nutritional intake becomes more important is pregnancy and lactating. During these periods, women should get more nutrients -protein, vitamins and minerals- as well as energy, *approximately 280 kcal more per day during pregnancy and 480 kcal during lactating* (FAO 2004, p48). These numbers show that pregnant and lactating women are under higher health risks resulting from the increased need for daily intakes and the inability to meet them due to food insecurity. It is necessary to mention here that female food security is essential for health of the societies also, because of the fact that when mothers are healthy and taking sufficient nutrition's, their babies will be able to take necessary nutrition's and energy from mothers, and this reduces the risk of illness not only in their childhood but also in the future.

3.4 HIV/AIDS

The vulnerability of women can also be seen in terms of their risk to be infected by HIV/AIDS. Researches show that females are under higher risk than males to become HIV/AIDS, as example of sub-Saharan Africa displays (Figure 1).

Taken from UNICEF Report 2012



Importance of HIV/AIDS in world health can be understood from the 6th MDG that aims to combat with it. Even though AIDS- related deaths and spread of new HIV infections both declined (URL3), there is still the need to focus on the issue, as regions in which food insecurity and HIV are seen are overlapping. Casualties faced by southern Africa constitutes very valid example to understand the relation between food insecurity and HIV since sufficient nutritional intake is the most important step to fight against AIDS (WFP 2003, p27). Malnutrition and undernourishment caused by food insecurity decrease people's resistance to illness and in case of HIV/AIDS, cause the affection to proceed further and higher risk of transmission from mother to child both during pregnancy and breast-feeding (Weiser *et al* 2011). A different effect of food insecurity on HIV/AIDS is indirect via its effect on mental health. It is argued that food insecurity causes depression and decline in overall mental status among people -especially females- which leads them to use of drugs and alcohol, and at the end increased vulnerability for transmission of HIV (ibid, p1732).

In addition to this, food insecurity has impacts on lifestyles of females since it alters their means to achieve food. As women do not have enough opportunities to earn income and tackle with poverty, they are incapable to buy food which makes women dependent on men's choices and interests, and sometimes women are even forced to have unprotected sex in order to meet their own basic needs, mainly food. Research done among sex workers in Lagos, Nigeria proves this argument, as 35 per cent of those workers closed to become sex workers due to insufficient food and absence of other ways to find it (ibid). Having sex in return for food generally means being unprotected which escalates the probability of getting infected by HIV/AIDS. World Development Report 2012 also stresses that HIV/AIDS is more widespread among women than men due to the fact that sexual partners of women are older age which presumably means elderly men have higher chance of possessing HIV infection (WDR 2012, p16) resulting from worse health conditions of earlier times. HIV infected people lose their strength for physical activities and to work as in the case of anemia related with iron deficiency, and have to be cared by other people. Since women are more vulnerable in terms of food insecurity and economical means and opportunities, their conditions will be worsened via increased food insecurity related with loss of income. As these females cannot afford for special caretaker, their family members sacrifice from work hours and income earned to take care of HIV/AIDS affected relatives. Even more, in order to meet special needs of HIV/AIDS infected relatives, such as health-care and medicine, family members temp to sell their assets -e.g. land and some other owning's, to take their children from school (Weiser *et al* 2011) as education is costly and to borrow money. These could be short-term solutions but diminished possessions, illiterate children, debts and additional expenditures for health-care in return diminish those peoples purchasing power and as a consequence of decreasing capabilities food insecurity increase further.

3.5 Non-communicable Diseases

Although people facing food insecurity are thought to have less daily food intake and reduced body weight, it is crucial to notice food insecurity does not always result in undernourishment. With the changing trends in daily intakes in which people started to consume more energy-dense products with high fat, more sugar and less fruits and vegetables; risk factors for world's health are also altering. It has been some decades that the world is encountering with new types of diseases that are called non-communicable diseases (NCDs) which includes obesity, cardiovascular diseases-like heart attacks and stroke-, cancers, chronic respiratory diseases and diabetes (URL4). In 2001,WHO accounted that approximately 60 per cent of the total reported deaths were caused by chronic NCDs and NCDs ratio is estimated to rise from 46 per cent up to 57 per cent by 2020 in global burden of diseases (WHO 2003, p4).

Noticing that these NCDs occur not only in populations with high availability and access to food but also within communities that experience food insecurity is essential to understand difficulties of global health in future. For example, some groups -mainly policy makers- did not estimate the presence of food insecurity in USA (Townsend et al 2001, p1738) even though the ratio of it was nearly 11.9 per cent in 1995 (Hamilton et al in Townsend et al 2001, p1738) as there were high amounts of obesity in the population. Researches illustrate that in USA, majority of African Americans and Native Americans together with people who are getting food stamps are overweight (Townsend et al 2001, p1743) which forms very important sample to comprehend the existence of obesity and overweight in food insecure groups. People's low income together with high food prices, especially fresh fruits and vegetables end up with “unfreedom” in low-income groups because they cannot make comparison between food options since most of the time fresh fruits and vegetables are not an option. “Food Inc”, a documentary film (2008) by Robert Kenner justifies this status of unfreedom by interview with a Latino family who eats fast food on the grounds that they can only afford it, and the members of families within same conditions are faced with diabetes, which will be analyzed below.

However, obesity and overweight are not seen only in developed countries. Due to alterations within traditional eating habits and lifestyles that introduced with industrialization, rapid urbanization and increased supermarkets and fast-food chains, developing countries as well increasingly face with overweighed people in society. Hence, the concept “*double burden of malnutrition*” which refers to “*the dual burden of under- and overnutrition occurring simultaneously within a population.*” (FAO 2006, p1) is set forth. What is seen commonly in developing countries facing with overweight and obesity is that populations started to consume more meat, poultry, pork, dairy products, fat and sugar (see figure 2) as stated with 6 case studies in FAO Food and Nutrition Paper (FAO 2006). There is an interesting information in the case of Philippines that, despite the population has been consuming more meat and fish, there was still deficit of some of the nutrition's, and this was explained with increased consumption in terms of processed meat and canned fish whose nutritional amounts, especially iron (ibid) are not as high as fresh products. Hence, “access and availability” of nutritious food become significant example in Philippines' case where underweight is seen among 27 per cent of children under 5 years old when in fact 27 per cent of the women are obese or overweight (FAO paper 2006, p17).

Taken from FAO 2006 Report

Percentage of dietary energy supply from major food groups, 1970–1972 and 2000–2002

Food group	China		Egypt		India		Mexico		Philippines		South Africa	
	1970	2000	1970	2000	1970	2000	1970	2000	1970	2000	1970	2000
Cereals, roots and tubers	82.1	57.7	66.8	64.8	67.6	60.8	54.9	46.8	59.0	56.1	54.7	59.6
Legumes, pulses and nuts	5.3	3.5	4.5	4.6	9.2	6.2	7.5	5.1	1.3	1.9	1.7	2.0
Oils and fats	2.9	8.7	9.4	5.9	5.8	11.6	6.6	9.0	6.6	6.9	7.9	12.1
Meat, fish, poultry	4.8	15.4	2.5	3.7	1.1	1.4	6.0	9.9	10.7	11.2	8.6	8.6
Milk	0.2	0.7	1.9	2.2	3.0	4.2	4.9	5.4	1.2	1.0	4.5	3.0
Eggs	0.4	2.3	0.2	0.3	0.1	0.2	0.8	1.8	0.7	1.1	0.5	0.8
Vegetables	1.7	5.2	3.6	3.3	1.4	1.9	0.7	1.2	2.7	2.0	1.3	1.3
Fruit	0.3	1.8	3.0	4.7	1.5	2.0	3.3	3.6	5.5	5.6	1.4	1.5
Sugar and sweeteners	1.4	2.2	10.5	10.1	9.5	10.2	13.6	15.0	10.4	11.7	14.1	11.5
Other	0.7 ¹	2.4 ¹	0.3	0.4	0.8	1.4	1.7	2.2	1.9	2.6	5.1	5.4

¹In China, the majority of the “other” category represents alcoholic beverages.

In low-income countries obesity seen in women -particularly middle aged- is more usual than men (WHO 2008, p61) which is related with socioeconomic conditions of women that affect their purchasing power to afford healthy food and activity. But as the obesity and overweight spread, the age in which they are seen is diminishing. Furthermore, obesity and overweight are creating grounds for further illnesses. There is a positive correlation between obesity and risk of type 2 diabetes in which the risk will increase with the increase of obesity

(WHO 2008, p13). The groups facing with obesity and diabetes type 2 overlap and the case of USA -African Americans, Latinos and Native Americans experiencing both diabetes type 2 (URL5) and obesity- can prove this fact. Diabetes type 2 is also related with other health conditions like cardiovascular diseases, e.g. heart disease and stroke, bad cholesterol and some other problems with eyes and kidney (ibid). As obesity and overweight are seen more among females, so do diabetes type 2. Unfortunately, health problems related with obesity are not only diabetes type 2 and cardiovascular disease. What is more is that risk of breast cancer in postmenopausal women increases with obesity as well as obese women face with endometrial cancer 3 times more and with kidney cancer 30 per cent more than normal weight women (WHO 2003, pp99-100).

Thus, as final remarks of this section it can be suggested that in post-MDG era in which further goals are continuously being discussed, it is crucial to involve NCDs in the agenda. A study found out that 53 per cent of female deaths are associated with obesity in USA (Manson J et al in WHO 2003, p 61) which is very alarming indicator to predict world's health in future. Hence, development practitioners should not only focus on developing world in coming projects and programmers but on making the new agenda relevant to all countries as borders of risky health factors are vanishing.

IV. Conclusion

It is visible with the information provided above that there is a direct correlation between food insecurity and women's health; when food insecurity increases so do health problems of women. Since women are generally discriminated from means to earn sufficient income -e.g. lack of means of production, information, opportunity and lower wage- to meet their basic needs, they have been affected by food insecurity more than men, and are subjected to higher unhealthy conditions resulting from their food insecure status. Women's physiological needs add more challenges to their already existing vulnerability in terms of health conditions. As Sen stated, this situation is labeled as “unfreedom” in which women possess diminished, or lack of, capabilities and cannot enjoy the liberty to choose between different possibilities to pursue a life they would like to. As sex workers in Lagos demonstrated, women have no alternatives to decide between them but to follow, and these make women patients, not agents. Yet, if a developed world with full of choices and alternatives is wanted, then all of the human beings should be given equal opportunities to make decisions among them. Thus, elimination of inequalities between genders, women's agency and providing possibilities for everyone should be first step for development. Although MDGs and the reports written by international organizations, e.g. FAO and WHO, are very important to take attention of people and to start the change towards “developed world”, they are not enough to achieve the end goal. Sen (2001,p169) argues that people in developing countries are more vulnerable than people in developed since the latter introduced welfare system and social safety nets to protect people from loss of jobs, famines, hunger and crisis time. Nonetheless, examples from USA and Canada show that these precautions are not satisfactory to cope with problems in long term. As argued by Sen, hunger or food insufficiencies can occur even when there is adequate food. Thus what is critical is not to increase agricultural production as suggested by neo-liberalists (Giménez & Shattuck 2001) but to make sure existing food options are available to everyone in the society through giving them the opportunity to utilize their own capabilities. This idea suggests alteration of political and social measures, together with economic ones as Sen argues in his book that famines kill only people not politicians and the absence of democracy to criticize and to compete for votes end up with continuation of inequalities and incapability's (Sen 2001). Therefore instead of aid giving and making people dependent on aid in this way, opportunities should be created

in which people use their own capabilities to achieve their goals. Finally, when the time needed to change economic, political and social measures around the world to achieve development is considered, the influence of the projects and goals of international organizations became more critical as they assist healing of the problems, mainly for women.

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