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REVIEW ARTICLE

Nutrition situation of Burkina Faso: a narrative review

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Abstract

Introduction: Burkina Faso is a landlocked West African country, where livelihoods are heavily dependent on subsistence agriculture, and the humanitarian crisis has increased the populations' vulnerability to malnutrition. **Aim:** This article presents an update of the food and nutrition situation. **Methodology:** Documents from government surveys and reports, peer-reviewed articles and other reliable sources were retrieved and analyzed. **Results:** According to the 2019 National Nutrition Survey, 25.4% of children under 5 years old are stunted and 8.1% are wasted. These rates exceed the WHO critical thresholds suggesting that child malnutrition is still a public health problem in Burkina although trend analysis suggests continuous improvement over the past ten years. Childhood overweight fluctuates between 1% and 2% while childhood obesity remains below 1% since 2014. Poor infant and young child feeding (IYCF) practices are key drivers of child stunting. In fact, 59% of infants are exclusively breastfed while only 17% of 6 – 23-month children receive a minimally acceptable diet. Children and pregnant and lactating women are deeply affected by micronutrient deficiencies including vitamin A and iron. Adult overweight is on the rise and high blood pressure and diabetes levels have reached 18% and 5% respectively in adults aged 25 to 64 years with huge disparities between men and women. **Conclusion:** While the country had made important progress in reducing child malnutrition, it is still facing a double burden of malnutrition namely undernutrition comprised of stunting, wasting and micronutrient deficiencies and overweight/obesity, hence the need to embrace a double duty approach to policy response to simultaneously reduce both undernutrition and overweight/obesity.

Keywords: Nutritional status, micronutrient, food security, non-communicable disease, Burkina Faso.

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1 Introduction

Burkina Faso is a landlocked country located in West Africa with an estimated population of about 21,510,181 inhabitants in 2020 [1]. According to the 2019 human development report, the country ranked 182nd out of 189 [2] with over 40% of its population living below the national poverty line [3]. Agriculture, which is the backbone of the national economy, employs almost 80% of the working population, even though gold exports have grown in importance in recent years. While agriculture is the main source of livelihoods of most people, the population is still experiencing food insecurity both acute and chronic.

Since 2016, Burkina Faso has been facing terrorism or intercommunity-related violence that has led to a massive internal displacement of the population, causing an unprecedented humanitarian crisis. According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), more than 838,000 people had been forced to flee their home, and the number of people in need of humanitarian assistance increased from 1.5 million in December 2019 to 2.2 million in January 2020 [4]. This situation is considerably jeopardizing national efforts in the fight against malnutrition and putting a severe strain on the achievement of the Sustainable Development Goals (SDG), particularly SDG2 in Burkina Faso.

The country has made several commitments related to nutrition and food security including among others the Malabo Declaration on Nutrition Security, the sustainable development goals; the 2012 World Health Assembly (WHA) targets and the renewed promise to the survival of the child in 2012. Although progress has been made in recent years, food and nutritional insecurity remain both a public health and development challenges. Many food and nutrition reports that have been published, are related to a specific issue (food security, micronutrients, child undernutrition; noncommunicable diseases, IYCF) or selected geographical areas. Further, they are not peer-reviewed and do not portray comprehensively the nutrition situation.

This study provides an overview of the current food and nutrition situation, with reference to most vulnerable groups; and discusses national efforts and related success factors and challenges in

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improving nutrition outcomes and achieving SDG2 targets in Burkina Faso.

2 Methods

For the purpose of describing and discussing the nutrition situation without collecting primary data, we used a narrative review. Narrative review is a "traditional" way of summarizing cumulative knowledge that has been produced on a particular topic [5], but does not seek generalization [6,7]. In the narrative review, reviewers may selectively ignore or limit the attention paid to certain studies in order to make a point [8]. Because of this unsystematic approach, the selection of information from primary articles is subjective and not based on explicit predefined criteria for inclusion [7].

Given the scarcity of available information on the theme in peer-reviewed journals, we used both online and manual searches. The online search was done through the PubMed database and Google Scholar to identify relevant peer-reviewed articles, reports and grey literature including reports and other documents from government, UN agencies, NGOs, global institutions and think tanks. The manual search consists of physical visits in libraries of relevant institutions and emailing experts and resource persons for relevant documents.

To be included, a study must:

a. be published after 2000
b. include a study population-based in Burkina Faso
c. examine nationwide food security or nutrition status based on any of the following indicators food security,

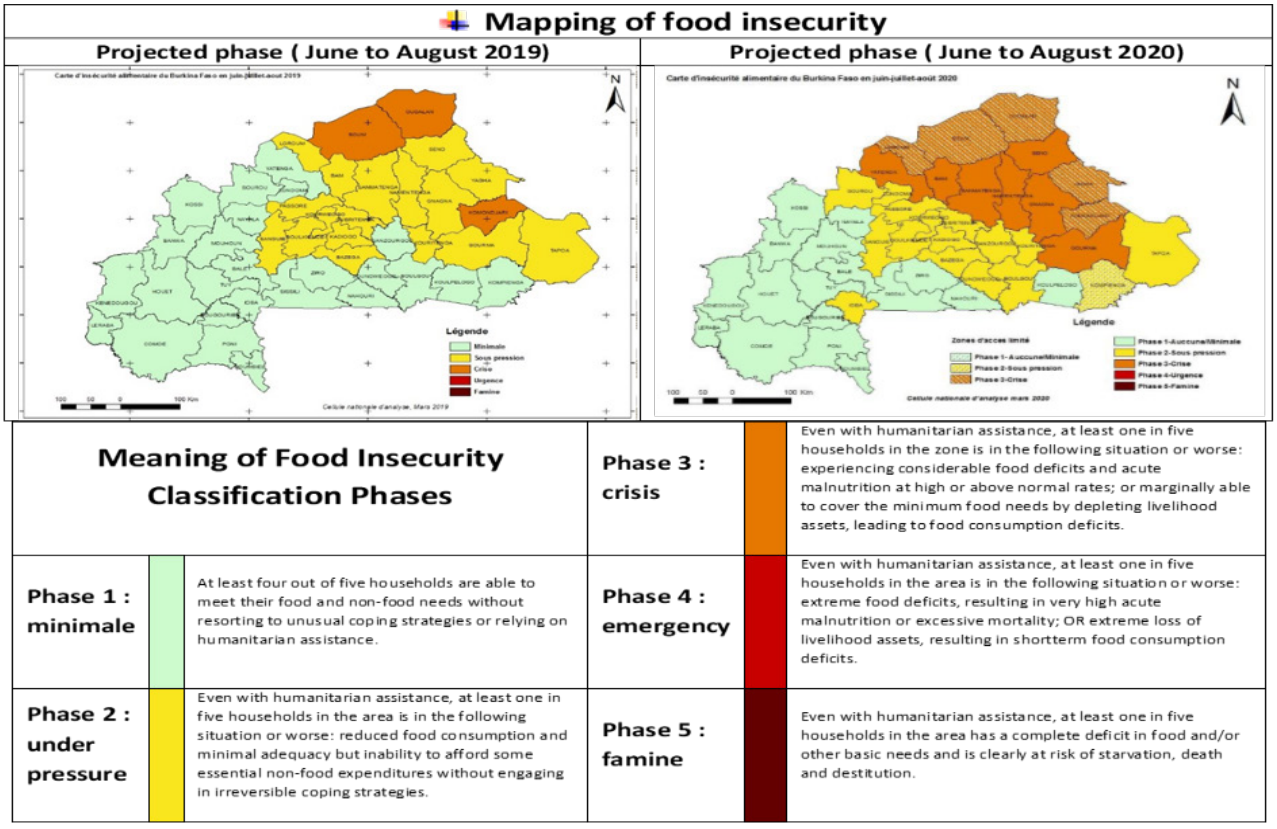

Figure 1: Food Insecurity situation in Burkina Faso based on Cadre Harmonisé [9]

food consumption, undernutrition, stunting, wasting, underweight, micronutrient, anemia, vitamin A, iodine, folic acid, zinc, overweight, obesity, infant and young child feeding, non-communicable disease, diabetes, hypertension, cardiovascular disease.

When multiple sources of information were available, we prioritized government-led and owned data. For indicators with no nationwide data, we considered peer-reviewed articles, reliable reports from government, UN agencies, NGOs or student thesis published on the issue. Table 1 shows the sources of information used for the selected indica tors.

The keywords used for the search include: Burkina Faso, food security, food consumption, undernutrition, stunting, wasting, underweight, micronutrient, anemia, vitamin A, iodine, folic acid, zinc, overweight, obesity, infant and young child feeding, non-communicable disease.

Eligible studies were screened based on the indicators covered and reviewed using narrative synthesis. For each indicator, data were first retrieved and recorded in an Excel spreadsheet, collated, aggregated, organized and presented in a meaningful way, to give a comprehensive picture of the indicator in Burkina Faso by the co-author with the most appropriate experience related to the

Table 1: Source of information for different indicators

Nutrition status indicators	Source of data	Title of document
Micronutrient status	ENIAB DHS	Enquête Nationale d'Iode et de l'Anémie au Burkina Faso – ENIAB, 2014 Enquête démographique et de santé – EDS 2003
Dietary intake	SMART Survey	Enquête nutritionnelle nationale selon la méthodologie SMART (2009 à 2019)
Non communicable diseases NCDs (adult obesity, diabetes, hypertension,)	STEPS	Enquête nationale sur la prévalence des principaux facteurs de risques communs aux maladies non transmissibles au Burkina Faso 2013.
Infant and children < 5 years	SMART Survey, Health statistical yearbook	Enquête nutritionnelle nationale selon la méthodologie SMART (2009 - 2019) Annuaire statistique de la santé 2018
Breastfeeding and complementary feeding practices	SMART Survey	Enquête nutritionnelle nationale selon la méthodologie SMART (2009 à 2019)
Food consumption	SMART Survey	Enquête nutritionnelle nationale selon la méthodologie SMART (2009 à 2019)
Food security	CILSS	Cadre Harmonisé d'analyse et d'identification des zones à risque et d'estimation des populations en insécurité alimentaire au Sahel et en Afrique de l'Ouest

topic. Information was verified by a second co-author and the most senior co-author double-checked data from all sources. All co-authors were involved through regular team meetings and discussion of methodology and results.

3 Results

3.1 Food insecurity and food consumption

The level of food security in Burkina Faso as reported in the latest Cadre Harmonisé (the West African equivalent of the Integrated Food Security Phase Classification) of 2020 is presented in Figure 1 [9].

The 2018 - 2020 Cadre Harmonisé shows a continuous worsening level of food insecurity in recent years. In fact, while the number of provinces in phase 2 "under pressure" remained relatively stable from 17 in 2019 to 16 in 2020, the number of provinces in phase 3 "food crisis" has considerably increased from 3 to 12 provinces. The number of people in a food crisis or emergencies (Phase 3 and 4) and in need of immediate food assistance has doubled from 954,315 people (5% of the population) in 2018 to 215,1970 people (10% of the population) in 2020 [9].

As shown in Table 2, while the national cereal production has increased to 82,33% between 2018 and 2020, the number of people in food crisis has increased from 5% people to 10% for the same period [9]. The food consumption score (FCS), which is based on dietary diversity and frequency of consumption, has considerably deteriorated during the same period, with the average proportion of people with limited FCS rising from 35.1% in 2018 to 53% in 2020.

National nutrition surveys reported that children under 2 years of age in Burkina Faso have a monotonous diet mainly composed of cereal-based starchy foods [10] and that the diet of children under 5 is mostly made up of porridge and tô a Burkinabe dish prepared from cereal flour (millet, corn, sorghum, etc.) and rice consumed with various sauces [11,12]. As shown in Figure 2A, children's diet is very poor in vitamin A rich fruits and vegetables and animal source food namely eggs, milk and dairy products, fish and meat products [10]. Dietary diversity tends to be better in big cities, particularly in the capital.

Table 2: Food availability, consumption and food insecurity [9]

	2018	2019	2020
Food consumption and availability			
Proportion of people with poor food consumption score (score <21)	9.4%	5.2%	15.3%
Proportion of people with limit food consumption score (score: 21.5 – 35)	35.1%	33%	53%
Food availability: National cereal production	4,067,124 tonnes	5,180,702 tonnes	4,939,630
Projected food security situation (June-July-August 2020)			
People under food stress (phase 2)	2,671,867 people, 13% of the population	3,716,000 people, 23% of the population	5,184,300 peoples, 24% of the population
People in food crisis (phase 3 and 4)	954,315 people, 5% of the population	1,606,480 peoples, 8% of the population	2,151,970 peoples, 10% of the population

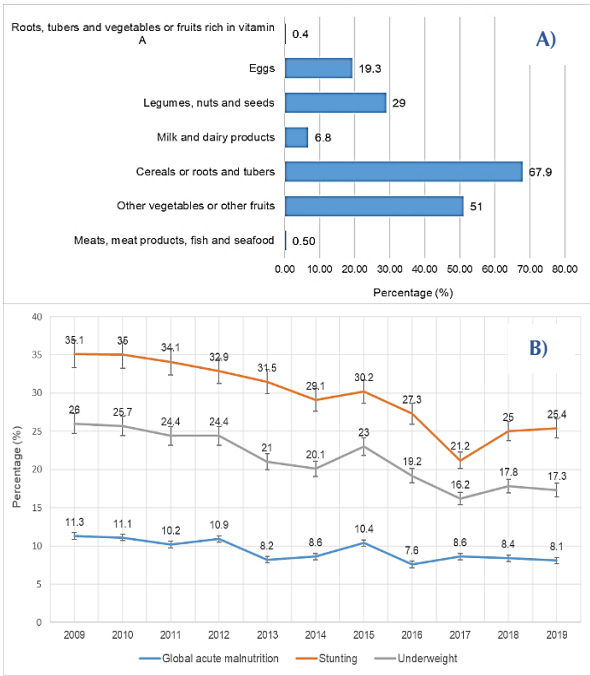

Figure 2: A) Food groups consumed (%) by children under 2 years in 2019 (SMART survey, 2019); **B)** Child malnutrition in Burkina Faso since 2009 (SMART survey, 2009 - 2019)

3.2 Undernutrition among children under five and low birth weight

Since 2010, low birth weight rates have fluctuated around 9% nationwide with some regional variabilities. In 2018, the Sahel, Cascades, Center-West, Center-East and Center regions recorded the highest rates of LBW, respectively 11.3%, 10.9%, 10.8%, 10.7% and 10.6%. The lowest rate was recorded in the North Central region with 7.4%. A study conducted in eastern Burkina Faso in 2008, identified major risk factors for low birth weight as; primiparity, non-follow-up of prenatal consultation (less than three PNC), female sex, low BMI of the mother before delivery.

Wasting: Based on data from national nutritional surveys using the SMART methodology, the Global Acute Malnutrition (GAM) has oscillated around 8% since 2013, except in 2015 when it reached 10.4%. Nationwide GAM has been above the WHO threshold defining a critical situation for four consecutive years.

Stunting and underweight: Nutritional indicators among children under five in Burkina Faso over the past ten years show a continuous improvement, though the prevalences are still high. However, a temporal analysis reveals that after a steady decline until 2017, the two forms of undernutrition are gradually increasing again. Figure 2B shows the evolution of child malnutrition since 2009.

3.3 Child overweight

Overweight and obesity are not currently a major concern in Burkina Faso given the prevalence reported by national surveys since 2014. Indeed, according to the SMART surveys, the prevalence of childhood overweight fluctuates between 1% and 2%. Since 2014, the prevalence of childhood obesity remains below 1% (Figure 3A).

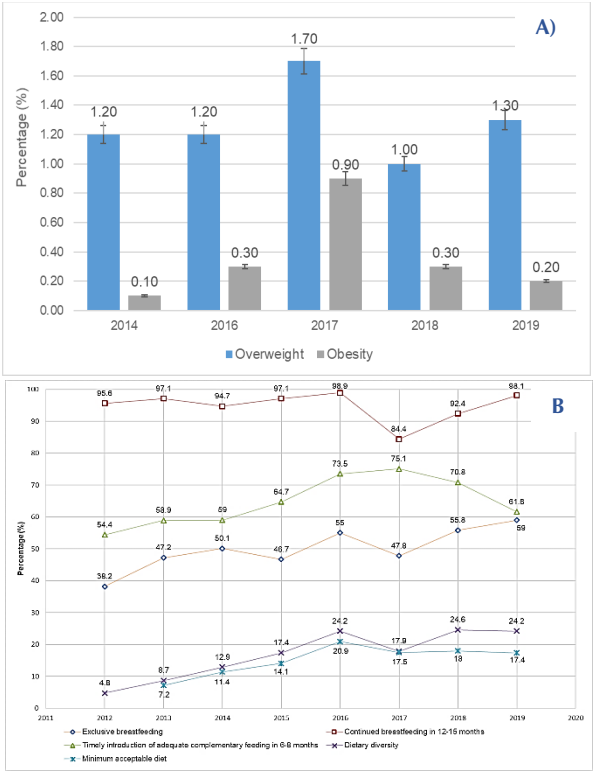

Figure 3: A) Overweight children under 5 years in Burkina Faso (SMART survey, 2014 – 2019); **B)** Exclusive breastfeeding in children 0-5 months, continued breastfeeding in 12-15 months, timely introduction of adequate complementary feeding in 6-8 months, dietary diversity and minimum acceptable diet for 6 to 23 months from 2012 to 2019 (SMART survey, 2012 – 2019)

3.4 Infant and young child feeding practices

Exclusive breastfeeding is known to be one of the preventive interventions with the most remarkable effects on reducing child mortality [13]. According to the SMART survey methodology [14], 59% of Burkinabe children aged 0 to 5 months were exclusively breastfed in 2019 [10]. About 62% of children aged 6 to 23 months benefited from timely and appropriate complementary feeding and almost all children less than 2 years of age (98%) were continuously breastfed until the age of 1 year in 2019 [10]. However, only 17% of children aged 6 to 23 months have an adequate diet [10] and 24% consume the recommended number of food groups.

Exclusive breastfeeding rate increased from 38% in 2012 to 59% in 2019. Similarly, the proportion of children with adequate dietary diversity rose from 5% in 2012 to 24% in

2019 and the percentage of children with minimum acceptable diet reached 17% in 2019 from 7% in 2013 [10]. The proportion of mothers who introduced timely adequate complementary food steady increased from 2012 to 2017, but has been decreasing since 2017. Figure 3B shows the evolution of some IYCF indicators from 2012 to 2019.

3.5 Micronutrient deficiencies

As summarized in table 3, deficiencies in vitamins and minerals also referred to as micronutrients are of public health concern in Burkina Faso.

Table 3: Status of key micronutrients in Burkina Faso [15]

Target group	Indicator	Result
Salt iodization & daily consumption		
Households (salt iodine level in)	Iodine <5 ppm*	17.6%
	Iodine 5-14.9 ppm	58.9%
	Iodine ≥15-59.9 ppm	23.0%
	Iodine ≥60 ppm	0.5%
	Ever heard about iodized salt	24.1%
Adult women	Daily salt consumption, median	6.4 g/d
Iodine status (urinary iodine)		
Non-pregnant women		
Non-lactating	Median UIC**	111.5 µg/L
lactating	Median UIC	69.6 µg/L
Pregnant women	Median UIC	73.8 µg/L
School-aged children	Median UIC	99.1 µg/L
Anemia status (Prevalence)		
Non-pregnant women	**Total anemia**	**61.9%**
	Mild anemia	28.7%
	Moderate anemia	31.9%
	Severe anemia	1.3%
Pregnant women	**Total Anemia**	**72.5%**
	Mild anemia	31.9%
	Moderate anemia	37.7%
	Severe anemia	2.9%
School-aged children	**Total anemia**	**67.7%**
	Mild anemia	18.9%
	Moderate anemia	46.8%
	Severe anemia	2.1%
Pre-school children	**Total Anemia**	**83.4%**
	Mild anemia	6.6%
	Moderate anemia	53.6%
	Severe anemia	3.1%

* parts per million ** Urinary Iodine Concentration

3.5.1 Anemia

Almost three-quarters of women of reproductive age (WRA) in Burkina Faso were suffering from anemia in 2014 according to the Demographic and Health Survey (DHS) [15]. The prevalence of anemia among pregnant women was 73%. About 67% of pre-school children suffer from one form or another of anemia with more than half affected by moderate to severe anemia. Small-scale surveys conducted in Goudebou refugee camps showed similar prevalence of anemia among children aged 6-59 months, i.e. 66% (61.4-69.8) of all forms of anemia in 2017[16].

3.5.2 Folic acid

There is no data on folic acid status in Burkina Faso. According to the statistical yearbook 2018 of the Ministry of Health, only half of the pregnant women reported consuming iron/folic acid for at least three months during their pregnancy despite free iron folic acid supplementation. Among those who have access to the supplements, there is poor adherence to iron intake among pregnant women [17].

3.5.3 Iodine deficiency

The proportion of households with adequate amount of iodine in the salt (> 15 ppm) is low (Figure 4A). There are regional disparities regarding the coverage of adequately iodized salt, with high coverage in the Western region and low coverage in the East. Six regions out of 13 have inadequate levels of salt iodization (less than 15%) suggesting low compliance to the universal salt iodization regulation in the country.

3.5.4 Vitamin A

According to the 2003 DHS, the relative prevalence of vitamin A deficiency was 129 per 1000 and the adjusted prevalence of clinical deficiency reflected by night blindness was 7% in pregnant women, above the WHO public health cut-off (< 5%) [18]. More recent data, although not covering the entire territory of Burkina Faso, report that more than 40% of schoolchildren in rural [19] and urban [20] areas were deficient in vitamin A using serum retinolemia (<0.7 µmol/L). Burkina Faso has since 1998 adopted biannual supplementation with vitamin A capsules for children under five years of age as a strategy to combat vitamin A deficiency. The 2019 national nutrition survey shows the coverage of vitamin A supplementation coupled with deworming in the last six months of 74.2% for children aged 6-59 months and 73.5% for children aged 12-59 months.

3.6 Adult overweight and noncommunicable diseases (NCDs)

In Burkina Faso, there is limited data on NCDs in different population groups. The WHO STEPS survey completed in 2013 provides some information on the prevalence of the main risk factors for noncommunicable diseases [21]. According to this survey, the national prevalence of adult overweight (BMI between 25 - 29.9 kg/m²) and obesity (BMI ≥ 30kg / m²) were 13.4% and 4.5% respectively (Figure 4B). High blood pressure, diabetes and high cholesterol affected 17.6%, 4.9% and 3.5% respectively of adults aged 25 to 64 with huge disparities across regions and between men and women. In fact, the prevalence of obesity, high blood pressure and diabetes was 11.3%, 24.8% and 6.3% respectively in urban areas compared to 1.9%, 14.8% and 4.4% in rural settings. Figure 5 shows the prevalence of different diseases according to the place of residence.

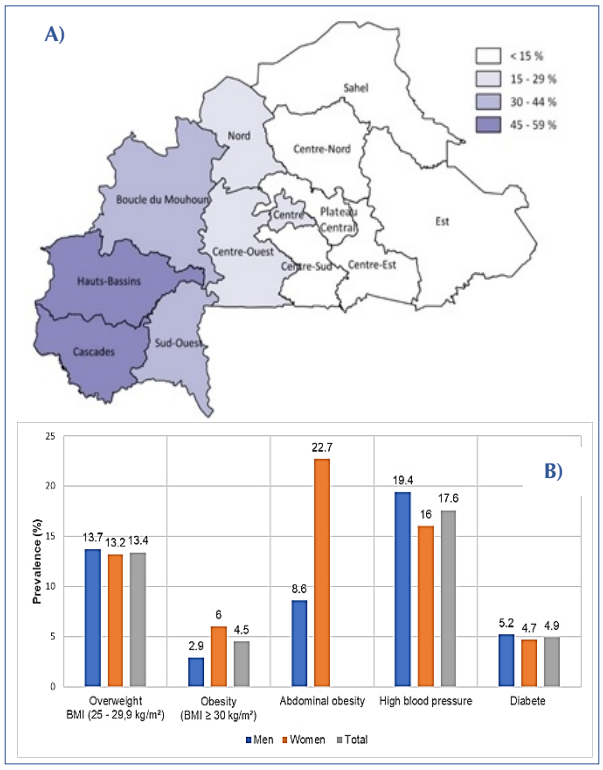

Figure 1: A) Geographical coverage of iodized salt expressed as %households with adequately iodized salt (≥ 15 ppm) (Source: ENIAB, 2014); **B)** Prevalence of overweight, obesity, abdominal obesity, high blood pressure and diabetes by sex

3.7 Progress towards global nutrition commitments

According to the recent Global Nutrition Report [22], Burkina Faso is on course to meet two out of six of the WHA targets (under-five stunting and exclusive breastfeeding) and has made some progress for three indicators (low birthweight, under-five wasting and anemia among women of reproductive age). However, the country is off track for obesity-related targets which are childhood overweight/obesity and related NCDs (Table 4).

4 Discussions

This narrative review suggests that the overall nutrition situation in Burkina Faso remains a public health concern with all five indicators of child undernutrition namely low birth weight, global acute malnutrition, wasting, stunting and underweight above the WHO thresholds. Although the nutrition status of adults seems to be less critical compared to under-five children, it deserves attention particularly anemia among women of reproductive age and obesity and related chronic disease that are steadily increasing. The country is facing a double burden of malnutrition including undernutrition (under 5-child global acute malnutrition, stunting, wasting and underweight and micronutrient deficiencies among women of reproductive age) and childhood and adult overweight/obesity. The humanitarian crisis in recent years has increased the number of undernourished children and the population in need of humanitarian assistance, thus delaying the progress in improving outcomes.

Table 4: Progress towards global nutrition target 2019

Indicator	Target for 2025	Status against global target
Under-five stunting	40% reduction	On course
Under-five wasting	Reduce and maintain to less than 5%	Some progress
Under-five overweight	No increase in childhood overweight	No progress or worsening
Exclusive breastfeeding in the first 6 months	Increase up to at least 50%	On course
Anemia in women of reproductive age	50% reduction	Some progress
Low birthweight	30% reduction	Some progress
Adult obesity		No progress or worsening
Adult diabetes		No progress or worsening

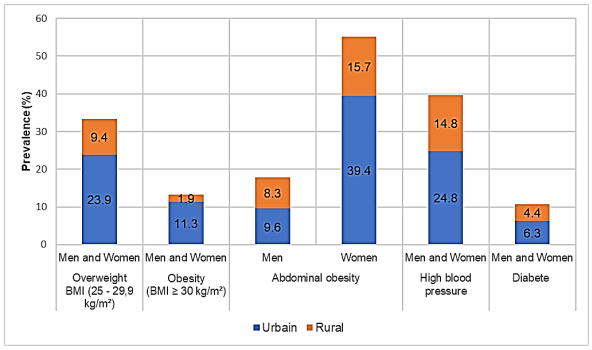

Figure 5: Prevalence of overweight, obesity, abdominal obesity, arterial hypertension and diabetes according to the place of residence

Findings suggest that in 2019 Burkina Faso was in a precarious situation for GAM, stunting and underweight. For example, if the GAM trend continues in this space, the prevalence will be expected at 5.8% in 2025, suggesting that the country will not meet the GAM target (less than 5%). Many factors affect the children's nutritional status in Burkina Faso, including insufficient health coverage and related high infant mortality and morbidity (diarrhea, malaria), recurrent droughts and floods, seasonal rise in food prices, physical inaccessibility of some areas due to road conditions and insecurity related to terrorist and other unidentified armed group attacks leading to an increasing number of internally displaced persons (IDPs). Plant pests and diseases such as locusts and fall armyworms are also important drivers of food insecurity which is aggravating the nutrition situation. The current coronavirus disease (COVID-19) pandemic and related social distancing measures

in some cities and the closure of schools and some markets will likely aggravate the already poor food and nutrition situation. In addition, while Burkina Faso has formulated a number of good policies, strategies and plans, the country is still struggling to implement an effective programmatic response to reduce the burden of all forms of malnutrition, and particularly diet-related non-communicable diseases. This is due to lack of adequate resources both financial and human resources, poor enforcement of existing legislation for example related to universal salt iodization and code of commercialization of breastmilk substitutes, insufficient commitment of different sectors to the multisectoral approach.

Belesova *et al.* reported that low levels of household food production have negative impacts on child nutrition as measured by MUAC in rural subsistence farming population, which represent the majority of the population in Burkina Faso[23]. Further, there are huge nutrition gaps in Burkina Faso food systems because agriculture production is not often nutrition-sensitive. In fact, agriculture is still traditional and subsistence farming with a focus on staple grains like maize, sorghum, rice and beans, rather than producing a broader range of more diverse and healthier foods, such as animal foods, fruits, nuts and vegetables.

Another key driving factor of malnutrition is related to instability and insecurity due to terrorist attacks and intercommunity violence which has increased the number of internally displaced people and related food insecurity and malnutrition. It is well known that people living in countries affected by conflict and violence are more likely to be food insecure and malnourished [24]. Conflicts disrupt food production and supply chains and increase acute food shortages and food prices. Moreover, the conflicts, disrupt delivery of health, humanitarian and other social services and therefore aggravated food and nutrition insecurity [25]. Therefore, nutrition programming in Burkina Faso should consider a conflict-sensitive approach that aligns actions for immediate humanitarian assistance, long-term development and sustaining peace in the affected regions.

Compared to other developing countries, Burkina Faso is performing very well in several indicators, particularly for stunting and IYCF. For example, 59% of Burkinabe infants under 6 months are exclusively breastfed in 2019 against 37% and 38% for Africa and global average and the country is on track to meet the WHA target for exclusive breastfeeding. Progress in exclusive breastfeeding is closely linked to stunting, as IYCF is a key driver of child stunting [26]. In 2002, the World Health Assembly adopted the Global Strategy for Infant and Young Child Feeding which calls countries to improve infant and young child feeding practices through concrete plans including funding and monitoring [26]. To accelerate and sustain nutrition progress, Burkina Faso developed a plan to scale up optimal IYCF practices centered on a multisectoral approach and mother-to-mother support groups [27-29]. The plan aimed to increase the rate of exclusive breastfeeding among infants under 6 months from 38% to 80% and the number of children, aged 6–23 months, receiving a minimum acceptable diet from 4% to 30% between 2012 and 2025 [30].

Another key driver for the country's progress in nutrition is the increasing political commitment and conducive policy environment for nutrition [28,29]. Indeed, the country endorsed its first national nutrition policy revised in 2007, which was revised in 2016. In 2008, way before the creation of the Scaling Up Nutrition movement, Burkina Faso established a multisectoral consultative body – the National Consultative Council for Nutrition (CNCN) to provide insights and recommendations on the implementation of the national nutrition policy and offer a platform for consultation and exchange of information between various sectors. After joining the Scaling Up Nutrition movement in 2011, Burkina Faso government's commitment to improving the nutrition status has been translated by in-depth policy reforms [28,29,31]; and in several programs and projects towards multisectoral approach[27,32,33]. A multi-sectoral strategic nutrition plan (2020-25) was developed in 2017 and a national food security policy (2017-2021) was endorsed. To increase the nutrition workforce for scaling up interventions, a mass nutritionist recruitment policy has been launched since 2017 with the aim to position at least one nutritionist in each region. Nutrition is also being mainstreamed in various development policies with aggressive advocacy to position nutrition as a priority for health, agriculture/food security, education and social policies. A dedicated budget line has been created for nutrition [29,34] and the consultative platform for nutrition has been decentralized at the regional level with a monitoring and evaluation plan and common results frameworks to track progress [35].

Like in many developing countries worldwide, micronutrient deficiencies remain widespread with some regional disparities. Regional disparities for iodized salt availability are likely due to the diversity of origins and producers of salt. Consequently, it is very important to strengthen the regulatory monitoring of salt levels coming to the markets in Burkina Faso in order to achieve universal salt iodization objectives (i.e. 90% of salt for human consumption is adequately iodized).

As observed in many developing countries, the prevalence of anemia in both children and WRA is very high. Sanou *et al.* (2008) reported that more than 75% of anemia in preschool children was due to iron deficiency in Central Burkina Faso[36]. Given that the prevalence in this review is only based on hemoglobin level, it is difficult to ascertain the exact contribution of iron deficiency to anemia since infections are also highly prevalent and may contribute to anemia in Burkina Faso.

While there is limited data to track the trend of NCDs such as obesity, cardiovascular disease, diabetes, cancer, high blood pressure, hyperglycemia, oral diseases, etc., the WHO STEPS survey suggests that the prevalence of the main risk factors for noncommunicable diseases is high [21]. The Global Panel for Agriculture and Food Systems for Nutrition reported that the health risks associated presented by diet-related chronic diseases outweigh combined risks of tobacco, alcohol and unprotected sex [37]. Concerned about the growing burden of NCDs, the

government has developed in 2016 an integrated strategic plan to fight against NCDs in compliance with its international commitments and the guidelines of the Global Action for the Prevention and Control of NCDs [38].

This review is the first to our knowledge to comprehensively portrays nutrition situation including food security, child undernutrition, micronutrient deficiencies, overweight/ overweight and diet-related noncommunicable disease together with progress made in achieving WHA nutrition targets. It suggested that indicators of child nutrition are routinely collected nationwide through DHS (every 5 years) and SMART survey (annually). The other indicators are not collected regularly and timely; and most of them are outdated or are not nationally representative to adequately inform policy and programming. For evidence-based programming, there is a data gap for a number of nutrition indicators, for example diet quality based on minimum dietary diversity among WRA. Data on micronutrient status other than anemia are not timely and are out of date. Temporal data are also lacking on adult overweight and related diet-related NCDs indicators in Burkina Faso to comprehensively report on NCD targets and track progress. Information on the contextual drivers of the various forms of malnutrition is also not documented.

5 Conclusion

This study suggests that the overall nutrition situation in Burkina Faso remains a public health concern with all five indicators of child undernutrition (low birth way, global acute malnutrition, wasting, stunting, underweight) above the WHO thresholds. However, child nutrition indicators have improved in the last ten years as a result of government and partner investment and a conducive policy and institutional environment since the country joining of the SUN movement. Unfortunately, the progress is being challenged by the difficult security context in which the country has been plunged since 2016. Obesity and related NCDs are on the rise putting the country off the track of one of the WHA targets while micronutrient deficiencies are still highly prevalent. This double burden of malnutrition calls for a paradigm shift from the current child undernutrition focus to a double-duty approach which includes interventions, programs and policies that have the potential to simultaneously reduce the risk or burden of both undernutrition and overweight/obesity and related NCDs. There also needs to be more efforts to update information on NCDs and micronutrient deficiencies and to collect data on diet quality on regular basis to allow tracking of progress and inform policy and programming.

Author contribution: MO led the study design and data acquisition and analysis and drafted the first version of the manuscript. OO, UZ and SK made substantial contributions to the study design, data analysis and interpretation and first version drafting process of manuscript. EAB critically reviewed the manuscript with special emphasis on policy and institutional environment. DS oversaw the study design and data gathering and provided overall guidance to the manuscript drafting. All of the authors participated in the information gathering and data analysis and interpretation in their area of expertise. All authors reviewed the manuscript and approved the final version to be submitted and the revised version.

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