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Food Insecurity Experience among Pastoralist Community in South Omo, Ethiopia: A Qualitative Study

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Abstract Food insecurity is a global challenge, particularly in developing country like Ethiopia, which is aggravated by a lack of adequate food availability, rapid population growth and COVID-19; it has serious consequences for the health and well-being of adults and children. Although several studies have been conducted in central and agrarian communities, there is little evidence of studies on food insecurity in the most remote communities like Southern Omo. This study aimed to assess the contributing factors and coping strategies related to food insecurity among rural agro pastoralist community. A descriptive qualitative study was conducted in southern Ethiopia. A total of 18 in-depth interview participants were interviewed and moreover 5 focus group discussions were conducted in total of 53 pregnant women, until data saturations. Field notes were taken and voice recoded during each sessions. The information were transcribed verbatim and analyzed, thematically supported by Atlas ti 7 software. The findings were presented in theme, sub-theme and category with quote. The study confirmed that, there is an important contributing factors affecting food security such as: drought, rain shortage, climate change, food sources always from purchasing, food aid community, living within a pastoralist community, poor soil fertility, Omo river not used for irrigation, conflict between ethnic group, increment of population number, and unavailable guideline were the main contributing factors for household food insecurity. Moreover, in-depth interview and FGD participants provided their opinion on household food insecurity coping strategies like selling cow/goat and buying maize powder, eating uncommon tree ("negode"), getting help from food aid, access of safety net, borrowing food/crops from neighboring ("kebele") ethnic families, eating unacceptable leaves and branches, selling fire wood and grass in town and doing labor work at town. The study findings confirmed that, drought, rain shortage, climate change, poor soil fertility, and lack of irrigation system for productions that affect food security. Therefore, policy makers and local agricultural authority recommended to build resilient, advanced, and context based agriculture system to overcome aforementioned factors in pastoralist community.

Keywords: *experience, pastoralist, reason, coping strategies, food insecurity*

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1. Introduction

Food security occurs when "all people", "at all times", "have physical" and "economic access to adequate, nutritious and safe food that meets their dietary requirements and food choice for healthy and active life [1,2]. In 2019 global food insecurity report, the burden of food insecurity is much higher in Africa than in any other part of the world that affects more than half of the population [3]. It is one of the global society's concerns in sub-Saharan Africa [2]. In 2015, UN assembles committee endorsed 2030 agenda, that contains 17 sustainable development goals (SDG) and 169 targets, aimed to address the global challenges of food insecurity, hunger and malnutrition, by ensuring access to safe, sufficient food and nutritious diet for all [4].

Research evidences have shown that, food insecurity is aggravated by a lack of adequate food availability, rapid population growth and climate change, which are negatively affecting the progress of agricultural intervention towards hunger reduction; Also have a negatively affecting all dimensions of food security (food availability, access, utilization and stability consequence for food security [5,6,7].

Moreover, the COVID-19 pandemic caused a serious global health crisis that brings extraordinary humanitarian challenges [8,9], the pandemic extremely affects economic, social and health of the community [10]. This created a global problem on physical and economic barriers to food availability [11]. Furthermore, COVID-19 has unsettled food access and impacted food insecurity [12]. It worsens

the household food insecurity in the lockdown situations [13].

Ethiopia has encountered food insecurity over long periods of time [14]. A study conducted in Ethiopia demonstrated that dry seasons, unpredictable rainfall, population pressures, traditional agriculture, unexpected illness, catastrophic events, land deprivation, and a low degree of innovation are central to food insecurity [14]. Similar study from local context revealed that a deficiency of farm land, absence of bulls or cattle, dry seasons, population pressure, poor soil quality, poor cultivating practices, plant and animal infections, lack of support, high work wastage, poor infrastructure and pre- and post-crop misfortunes were associated with food insecurity in Ethiopia [15].

Even though significant improvement has been made over the past few years in decreasing degrees of life-threatening poverty, addressing food insecurity remains a critical concern for low and middle-income countries, particularly Ethiopia. The current study aimed to assess the contributing factors and coping strategies of food insecurity in South omo Zone, Ethiopia.

2. Material and Methods

Study area: This study was conducted in the South Omo Zone, one of 15 zones in the Southern Nations, Nationalities and People's Region (SNNPR) of Ethiopia. The zone is divided into ten districts and 1 city administration and the Zone consists of 205 rural and 60 urban "kebeles" (smallest admiration structure). The zone capital is Jinka, a city in the Southern part of the SNNPR; 480 km from the regional capital of SNNPR, Hawassa; and 850 km from Addis Ababa, the capital of Ethiopia [16].

According to South Omo Zone health department report there are two hundred and sixty eight "kebele" (268) in the Zone of which twenty two (22) are urban kebeles [16]. The South Omo Zone has a diverse agro-ecology ranging from hot arid to tropical humid. Dega (high land) constitutes 0.5 per cent of the Zone, weynadega (midland) 5.1 per cent, semi-kola (mid low land) 60 per cent, and kola (low land) 34.4% [17].

The rainfall varies significantly in the Zone with a lower rainfall towards the North East of the Zone. The mean annual rainfall of the Zone ranges between 400mm and 1,600mm [17]. Furthermore, agriculture is the predominant economic activity in the zone and the country and is the prominent source of livelihood. Agriculture is mainly subsistence farming for personal consumption [17]. (shown Figure 1).

2.1. Population

In this study, health center directors, district health office managers, hospital chief executive officers (CEO), and zonal program experts from health departments and agricultural office were included for the interview; furthermore, pregnant women were also included for focus group discussions (FGD).

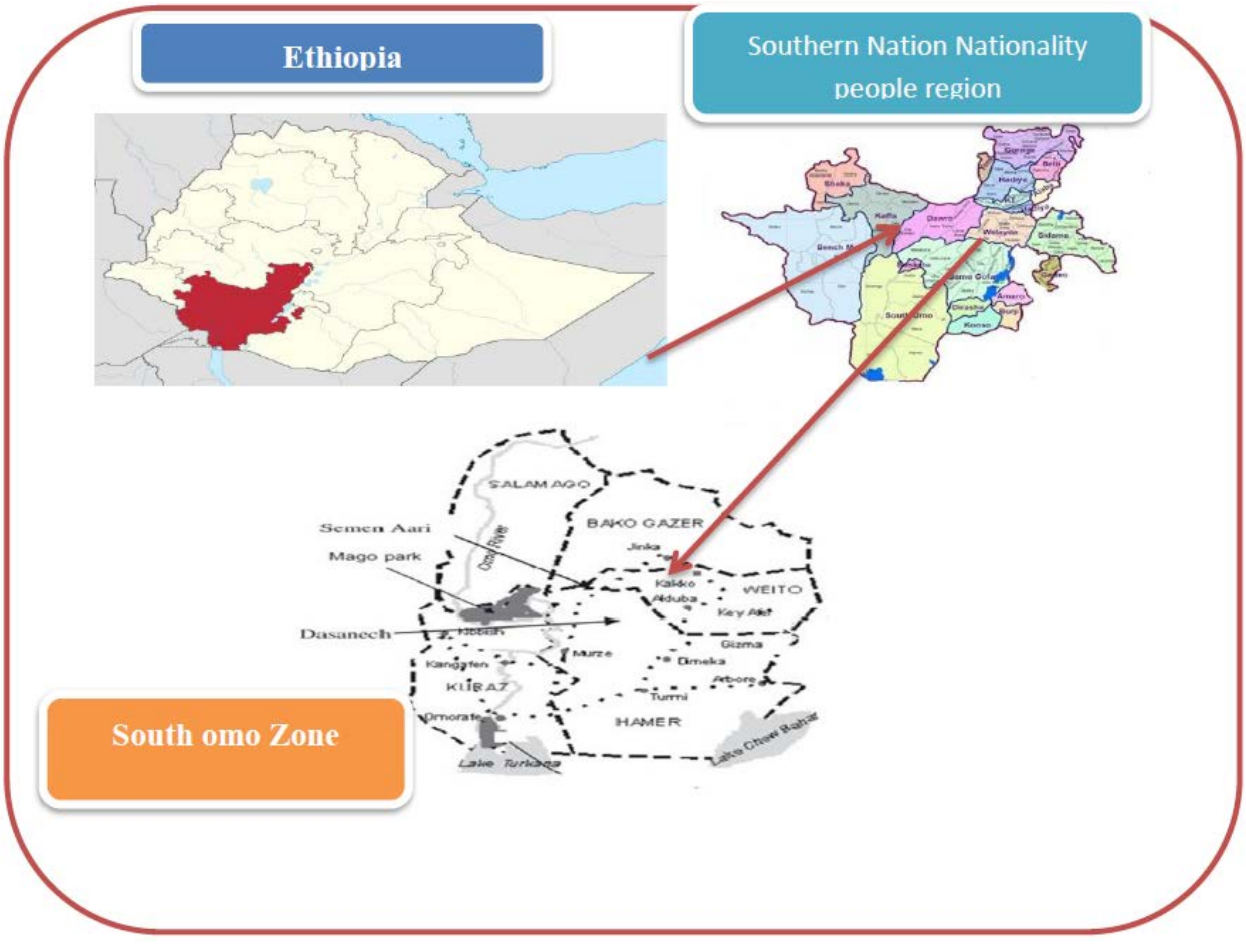

Figure 1. Administrative map of South omo Zone

2.2. Sampling Method

The sampling method in qualitative research approach is to select cases that will most advantage the study [18]. Creswell and Creswell reveal qualitative sampling as intentionally selecting study subjects that will help the investigator best in understanding the issue and the investigation enquiry [19]. The participants were purposively selected through maximum variation sampling method. Maximum variation sampling involves purposefully picking a wide range of difference on scopes of interest to obtain evidence about the significance of various circumstances, thus researcher consider various district, health facility with different professional and level of experience on health care program management and food insecurity. Moreover, pregnant women who have food insecurity experience for the last one year eligible for FGD. Total of 18 various level of health care managers included such as, health center directors, district health care managers, hospital chief executive officers (CEO), and zonal level experts for in-depth interview and also consider pregnant women for FGD (Figure 2).

2.3. Sample Size

There are no particular guidelines or criteria for calculating sample size in qualitative research. Sample size is based on informational needs as demonstrated earlier on. Participants are sampled until the data are saturated and no new information is revealed [18]. A total of 18 health care managers (district managers, health center directors, hospital executive chief officers and zonal experts) took parts in-depth interviews and also 53 pregnant women participated in 5 focus group discussions - an average of 9-12 participants per group. The in-depth interview and the focus group discussions raised different opinions and made suggestion on food security.

2.4. Qualitative Data Collection Process

Two qualitative research approach namely in-depth interviews and focus group discussions (FGD) were used to collect qualitative data for this study. Qualitative data were collected using focus group discussion (FGD) guide and open-ended questionnaires. In-depth interviews were conducted using interview guides and focus groups discussions were conducted with focus group interview guides.

All focus group discussions were conducted in the local language. Furthermore, the researcher conducted in-depth interviews with health program managers in Amharic, the official working language of South Omo Zone as well as, Ethiopia. Focus group discussions and in-depth interviews were recorded, and field notes were taken on the discussions. The recorded interviews were transcribed verbatim at the end of each day of research.

2.5. Qualitative Data Analysis

Qualitative data analysis includes organizing, thermalizing and coding the data, and framing the interpreting the data [20,21]. In this study, the researcher and research assistant reviewed the data to identify underlying concepts and clusters of concepts. Data analysis is a reductionist process whereby information is reduced through a coding process into identifiable units of meaning [18,19].

In this study, data analysis started at field with data collection, field notes were taken, voice recorded with permission and debriefing were considered. The voice records were transcribed verbatim in the local language, and then translated in to English. For coding purpose researcher read transcribed interview line by line for several times and then the main codes were extracted. Then, the related codes were put in one category and each code was matched with what the participants had said. Finally, based on similarity and content, the subcategories were used to make the main themes. Also Atlas ti7 software was used to manage the transcript and analyses the data. The researchers ensured data quality by considering the trustworthiness criteria such as confirmability, transferability, dependability and credibility [22,23].

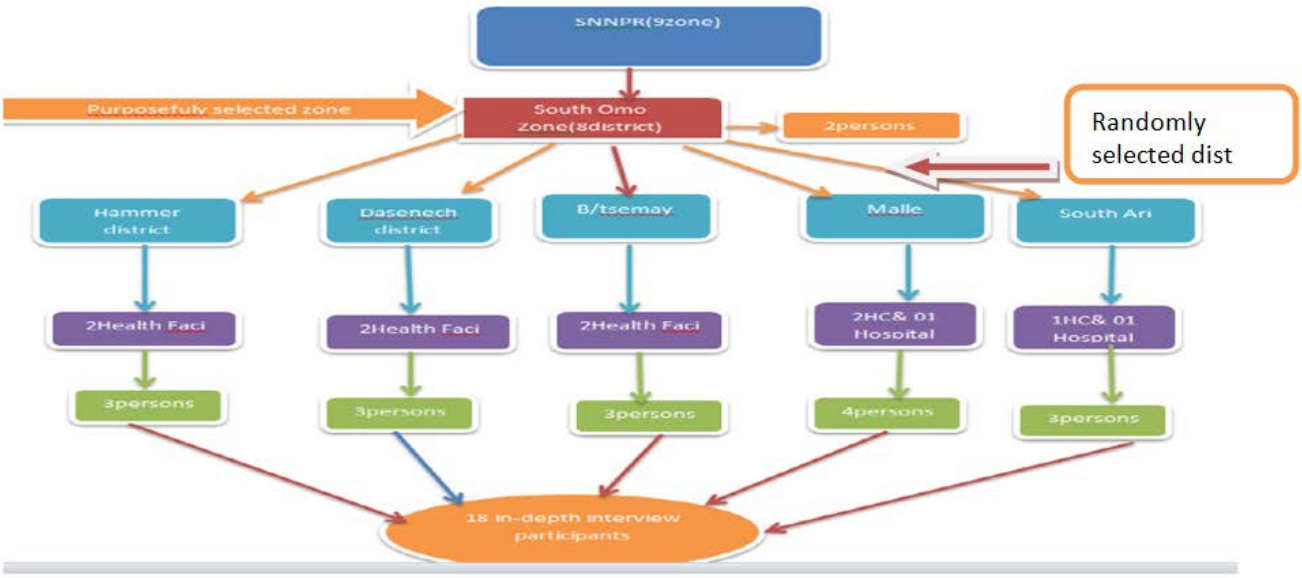

Figure 2. Schemic presentation of sampling procedure in the qualitative study

3. Results

3.1. Demographic Characteristics of Key Informants of In-depth Interviews

Qualitative data were collected from a purposefully selected sample of health workers through in-depth interviews, using in-depth interview guide. Qualitative data were collected until saturation. A total of eighteen (18) health programme managers voluntarily participated in the interviews.

The majority of the participants, 83.3 % (n=15) were male participants and 17% (n=3) were female participants. The mean (±SD) of the participants s' age was 31.1±6.1, and the median age was 31 years with the youngest person being 23 years old and the oldest 42 years of age. More than one third of the participants, 38% (n=7) had 4-8 years of work experience; 33.3% (n=6) of the participants had more than 8 years of work experience; and 22% (n=4) of the participants had 2-4 years of work experience. The remaining 5.6 % (n=1) of the research participants had less than one year of work experience. The mean ± (SD) of work experience of the participants were 7.3±3.9, with a minimum of 1 year experience and a maximum of 15 years of experience. A majority, 94% of the participants had at least 2years work experience.

A large proportion, 66.7% (n=12) of the participants had a qualification of a first degree, 27.8 % (n=5) of the participants had a diploma, and only 5.6% (n=1) of the participants had a master's degree qualification. A large proportion of the participants, 38.9% (n=7) were health center directors, more than one third, 33.3% (n=6) of the interview participants were district health office managers and nearly, 16.7% (n=3) of the members who participated in the key informant interview were zonal level experts in designation, and the rest, 11.1% (n=2) participants were chief executive officer (CEO) from hospital (Table 1).

Table 1. Basic characteristics of participants in the in-depth interview in South omo zone South NNPR, Ethiopia, 2019

Variable	Frequency	Per cent
Sex		
Male	15	83.3
Female	3	16.7
Age		
20-30 year	9	50
31-40year	8	4.4
>41year	1	5.6
Work experience with nutritional status		
< one year	1	5.6
2-4 year	4	22
4-8year	7	38.9
>8year	6	33.3
Qualifications		
Diploma	5	27.8
Degree	12	66.7
Master	1`	5.6
Designation		
HC[c] directors	7	38.9
WoHo[b] Head	6	33.3
CEO[a]	2	11.1
Zone experts	3	16.7

CEO = chief executive officer, WoHo[b] =Woreda health office, HC[c]=health center.

There were five theme identified in this study such as, burden of food insecurity, Reason for household food insecurity, Prevention strategies, coping mechanism for food insecurity, and Inter-sectorial collaboration to reduce food insecurity at household level with theme and sub theme are articulated in Table 2 below.

Table 2. Food insecurity burden, reason and coping strategies to address household food insecurity at household level with themes and subtheme South Omo Zone, SNNPR, Ethiopia, 2019

Theme	Sub theme
Burden of food insecurity	"Worry about food", "do not eat preferred food", "do not eat entire day and evening"
Reason to food insecurity	"Drought", "rain shortage"
	"Food sources always from purchasing", "food aid community", "pastoralist community", "climate change", "poor soil fertility"
	"Omo river is not used for irrigation", "ethnic based conflict"
	"Population growth" and "no guideline available"
Prevention strategies	Ensure food security, "work safety net", "youth employment/work opportunities for youth", "settlement (pastoralist settlement)", "encourage pastoralist community for self-production", "supporting water irrigation system for pastoralist area"
Coping Strategies	"Sell cow/goat" and "buy maize powder", "eat uncommon tree" ("negode"), "food aid", "safety net", "borrow food/crop from neighboring kebele ethnic family", "go to town to wait at the family home", "eat non-acceptable leaves", "brides", "sell fire wood" and "grass in town" and "daily labor for food in town"
Inter-sectorial collaboration	"Sectorial-integration" and "documents/guidelines"

3.2. Magnitude of Food Insecurity

Food security is a general health problem in developing nations such as Ethiopia. Evidence suggests that more than 820 million individuals need more to eat [3]. The in-depth interview participants experienced food insecurity in their districts.

One participant from an agrarian community remarked: *''The area is green most people planted trees, coffee in the land, not crop for day to day consumption, due to this, most farmers family participants go sleep without any foods, even others unable to eat day and night due to lack of nourishment in their house''* (28 year-old male participant).

More-over, food insecurity was a common concern for pastoralist communities. Participants explained that they were worried about food and did not eat preferred food.

A district health office manager explained this phenomenon in more detail:

"*… currently in my district 29,115 peoples are using productive safety net, other 23,000 peoples are regular food aid users from government"* (Nurse, 34-year old male participant). This indicates the high number of people that are food insecure and receiving support from the government.

In addition to this, a large proportion of the pastoralist communities were not working the land. Participants from the other pastoralist community explained that "*there are many people suffering from food insecurity and the*

community survives on government food aid'' (30-year-old male participant).

In contrast to this, the participants from the in the in-depth interview sessions in the high land remarked the following:

"In my cluster most people are agrarian and plant crop based on seasons, due to this, have no much food insecurity and food aid" (34-year-old a male participant).

3.3. Reason for Household Food Insecurity

The current in-depth interview and focused discussion participants mentioned a causes for recent food insecurity in their community as; drought, rain shortage, climate change, the food aid community, and seasonal variations were the repeatedly mentioned as causes for household food insecurity.

In-depth interview participant from the pastoralist district said:

"*… I remember the last time a lot of livestock's were died due to shortage of water 'drought''* (23 year-old female participant).

The agrarian participants were explained as food sources attained from purchasing, and land shortages for farming's were mainly raised causes for food insecurity.

As a 28-year-old male participant mentioned:

''Previously there were a limited number of people living and working in their land, but recently the number of peoples increasing, as result farming land narrowing, and youth not employed, due to this they lack food to eat''

Other 32 year old male participant:

"In our district we have no such problem but most of the community members buy cereal and other food item"

Most pastoralist district participants mentioned that, pastoralist community agriculture was traditional farming and subsistence farming. Thus, farmers did not use technology.

A participant from the pastoralist district remarked the following:

''Previously pastoralists benefited from omo river "sheshe" for farming the land, but now there are different projects like hydroelectric power and sugar project that decrease the water'' (35-year-old participant). "Sheshe" is an Amharic word referring to water that overflows. The pastoralist community needs a river overflow to cultivate their crops.

One in-depth interview participant noted that the *''community created dependency for safety net aid*, due to this they do not want to work '' (27-year-old participant). In Ethiopia, government developed productive safety net program (PSNP) strategy to address household chronic food insecurity by offering food or cash for poor people to ensure food needs [24,25].

3.4. Prevention Strategies

Food insecurity is a major threat for development in Africa especially in Ethiopia. Therefore, it requires intensive intervention to address food insecurity. Majority of in-depth interview participants suggested various prevention strategies such as; the pastoralist settlement, encourage self-production and use of modern agriculture as frequently mentioned idea as an important method to tackle food insecurity in pastoralist community.

A 27 year-old female participant explained:

"*… In our community all residents are pastoralist, they move from place to place for search of water and grass for their cattle's, due to this they don't farm the land, so I suggest pastoralist settlement is critical for self-production….*"

Other 36 year old male participant:

"I lived in the pastoralist community for more than 6year, they don't want to farm their land with modern technology due to this this, governments support for irrigation and agricultural technology transfer must be mandatory''.

Other participants from the agrarian communities also mentioned strategies to guarantee food security, a productive safety net, and youth work opportunities are repeatedly raised issues to alleviate food insecurity.

''…… youth number increasing dramatically in my district due to this they haven't work opportunity, so local government should facilitate youth work opportunities.…'' (29-year-old male participant).

Furthermore, 34 year male participants mentioned:

''In our district most of the families are very poor, They have no cattle or cows due this, they are suffering with food insecurity, Thus, I offer recommendations to give attentions for the community to alleviate food insecurity to each household levels through productive safety net programs and other alternative methods. Suggest government interventions for those who suffer for food insecure households like productive safety net as alternative options"

3.5. Coping Mechanisms for Food-Insecurity

During in-depth interview sessions, many participants mentioned how the community copes with food insecurity problems. The ways in which they utilized were *"selling cows or cattle/goats", "buying maize powder", "eating uncommon tree seeds ("negode")", "food aid", "safety nets", "borrowing food/crop from neighbor kebeles of their ethnic families", "reducing the number of meals", "eating very cheap food called "possese"", "going to urban areas to wait at the house of relatives", "eating leaves that are not acceptable", "receiving brides"* and *"going to town for daily jobs for food"*.

One participant said:

"When the families are suffer with food insecurity, they sell out their livestock's to buy maize-based powder during starvation to cope up the hunger" (32year old male participant).

Other participants added the following:

"*During hunger time, families go to river to get tree seed of 'Negode' to eat, it* is not normally edible seed as food." (35 year old male participant). "Negoda" in the local language of the communities mean that leaf seed.

From other FGD participant mentioned:

"…..*I have seen many families went their ethnic neighbor kebele to borrowed crop/ food to cope starvation…..*" (30 year-old female participant).

Moreover, one participant remarked:

"…*In my district families due to lack of food they eat unacceptable leaf and brides due to hunger to cope the hunger"(32year male participant).*

Participants from agrarian communities mentioned contrasted ideas:

"…..In our district, there is no visible food insecurity problem in our district"(36year old male participant).

One participant from the pastoralist district viewed as:

"…. During hunger season, some of families get food aid, from neighbor kebele, whereas others get food aid like safety net from government …" (26 year old female participant).

Moreover, one in-depth interview participant added the following ideas:

"…*In my town, many young people move from rural to town to get daily labor work at private house to get food*" (32 year old male participant).Similarly, another participant mentioned:

"… Thru hunger time not few, *large number of the family member displaced from rural to urban, to stay at relative house"* (29 year old female participant).

3.6. Inter-sectorial Collaboration to Reduce Food Insecurity

Inter-sectorial integration to ensure food security is very critical [26]. As in-depth interview participants mentioned: inter-sectorial collaboration and coordination were very weak. The majority of the district health managers explained that despite the existence of district steering committees, which are consisting of agricultural, education, finance, health, women affairs and other sectors, these are not functional mean that there is no meeting, no common action plan, no performance plan review in inter-sectorial collaboration and more over they have no guidelines at the district level for food security implementation and program monitoring.

35 year old male in-depth interview participant from pastoralist district mentioned as:

"……*There are no planned inter-sectorial collaboration meetings in our districts due to this we have no action for food insecurity prevention, I believe it is very essential for resource mobilization and integration…."*

Participant from agro- pastoralist district described the contrasting ideas:

''…..In my district, there is a steering committee for collaboration and coordination, I was a member, we have met one times per year only, and also no practical action plans developed'' (23-year-old male participant).

4. Discussion

Ethiopia is one of the countries in Sub-Saharan Africa, which has experienced food insecurity over long periods of time [14]. In the recent study, key informants and FGD participant's opinions indicated that, many families worry about access to food, also some households experiencing a total absence of food in the household. This finding is a comparable with the previous study report [36]. The possible explanation might be lack of enough foods leads to go day or night and whole day without eating anything.

The present study indicated that conflicts between ethnic groups were common, and this negatively consequence on farming which led to food insecurity. As FAO indicated, conflict is a key driver of conditions of severe food crisis and recently re-emerged famines [6,37]. The possible justification could be prolonged conflict might be decrease access of food, and worse the condition mean time lead to hunger, starvation and food insecurity.

The higher proportion of key informant opinions indicated that, the cause of family food insecurity as, drought, rain shortage, climate change, poor soil fertility, food aid community, food source always by purchasing, pastoralist community, omo river not used for irrigation, population increases, seasonal variation and a lack of guidelines on household food security are responsible for the high burden of food insecurity reported in the study area. This findings were consistent with the previous the study report [6,7,40,41].

A participant from a pastoralist district mentioned:

…….' I remember last time a lot of livestock died due to drought'' (23year- old participant). Research evidence from Sidama Ethiopia showed that, having a dry spell, inconsistent and increasingly deficient precipitation and flooding contrarily influence food production. Climate changes influence the nature of creation, and furthermore environmental change impacts on generation and earnings and occupations, wellbeing and food security, and gender equality [27]. A Systematic review indicated that, drought influences on food insecurity in Africa [39]. Similar study from Nigeria, Oyinloye and his colleagues reported reasons for food insecurity in Africa and other developing nations included: dry spells and other extraordinary climate occasions, Pests, animal's illnesses and other farming issues like, Climate change, military clashes, and absence of crisis plans, Corruption, political instability, cash crops reliance, and poverty were contributed for food insecurity [28].

Moreover, the cause of food insecurity in agrarian communities was pointed out by participants. A 28-year-old participant mentioned that:

''Previously there were a limited number of people living and working in their land, but know the size of peoples increasing, as result farming land narrowing, and youth not employed''.

Many scholars reported on the influence of population increases on agriculture. They showed that this would likely have a large impact on the ability of smallholder farmers to self-sustain and to provide for family consumption. A scientific study report from Ethiopia and other Africa country revealed that, increases in the population were related with declining farm sizes and impact household food security [29,40]. Additionally, Okyere, Mekonnen, and Zerfu revealed that, as smallholding size land affect nourishment capabilities and lead to household food insecurity [30]. FAO revealed that, Land is somewhat more evenly distributed in the low- and lower middle-income countries, where more than 95% of all farms are smaller than 5 hectares [38].

On other hand, most pastoralist district pastoralist noted how, pastoralist community agriculture was so traditional and that their subsistence farming did not rely on

technology. This study report is similar with the previous research evidence [7,15].

A Participant from the pastoralist district said:

"*Previously pastoralists benefited from omo river sheshe for farming the land but know there are different projects like; hydroelectric power and sugar project that decrease the water*" (35year -old participant).

Most of the in-depth interview participants mentioned their own mitigating mechanisms during food insecurity and these included, reducing the number of meals, eating very cheap food and making use of food aid. This evidence was similar with the literature found in India [31]. Similarly, study conducted in Jimma, Ethiopia by Belachew et al [32] and Afar, Ethiopia by Abdu, Kahssay, and Gebremedhin [33] haven shown similar scientific proof. Furthermore, the coping mechanisms during food shortage were factors that could be attributed to starvation, and thus contributed to the progression of other health problems. At the time of poor nourishment, the family wanted to minimise the extent of food at meal time and decreasing recurrence of dinners every day and eating less liked or modest nourishment were the regular methods for dealing with stress in the region to avoid premature depletion of saved food sources [34].

In this study, Key informants and focus group discussion (FGD) participants described household coping strategies in food insecurity situations and these included selling livestock and buying maize powder, purchasing grass and firewood, going to visit relatives living in urban areas to get food and also some participants explained sending their youth to town for daily labour, or to work to exploit food potential opportunities. This finding was comparable with the past empirical evidence from Oromia, Ethiopia [35] and Afar, Ethiopia [33].

Food insecurity is a major threat for development in Africa especially in Ethiopia; hence this needs intensive interventions to tackle food insecurity. From the in-depth interviews and FDG participants suggested different mitigating strategies such as, encouraging pastoralists' communities to be self-production, pastoralist settlement, support water irrigation systems for pastoralist farming and youth work opportunities.

In Ethiopia, the government has developed food security strategies. Despite the different efforts made by the government's administrative (GOV) and partners (NGOs) to reduce food insecurity, very little variations were observed in current study. However, significant positive outcomes were expected with respect to Sustainable Development Goal 2 [4].

Inter-sectorial integration and coordination is very important to ensure food security and nutrition. Key informant interview participants reported that the current practice of sectorial collaboration and coordination was very weak. The majority of the district health managers indicated that there was a steering committee in each district composed of agricultural, education, finance, health, women affairs and other sectors, but district collaboration and coordination was largely not functional. However, the Ethiopian Federal ministry of health (EFMOH) promotes the importance of strengthening multi-sectoral nutrition coordination and linkages across all responsible sectors and partners for effective and efficient implementation [26]. This study is purely qualitative and data was collected from small study participants so it may not represent general population in southern region.

5. Conclusions

This study revealed that, there is an important reason that affects household food security in study area such as, drought, rain shortage, climate change, poor soil fertility, and lack of irrigation system for productions that affect food security in pastoralist and agrarian community. Due to this, households took the following coping strategies such as selling livestock and buying maize powder, purchasing grass and firewood, going to visit relatives living in urban areas to get food and also sending their youth to town for daily labor, or to work to exploit food potential opportunities. Thus, policy makers and local agricultural authority recommended to build resilient, advanced, and context based agriculture system to overcome aforementioned factors in agro pastoralist community.

List of Abbreviations

EFMOH: Ethiopian Federal ministry of health, FGD: Focus group discussion, RHB: Regional Health Bureau, SDG: Sustainable Development Goals, SNNPR: South Nation Nationality People Region, WoHo: Woreda Health Office, ZHD: Zonal Health Department.

Ethics Approval and Consent to Participate

Ethical approval was secured from the Ethics and Higher Degrees Committee of University of south Africa (UNISA). A permission letter was secured from the Regional Health Bureau and the South Omo zone health department, respectively. The purpose and objectives of the study, the risks, and benefits of the study explained for the study participants. Furthermore, researchers ensured informed consent. The individuals who were not interested to participate were given the right to do so. Confidentiality of the data was ensured throughout the study.

Competing Interests

The authors declared, have no competing interests.

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Authors' Contributions

TAG: Conceptualizing, methods, literature reviewed, participated in data collection at field, conducted data analysis and interpretation, draft result writing.

ZZN: Methodology, Supervising, validation of the research, resources, reviewing, editing and writing the manuscript. Both authors have read and approved the manuscript.

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References

[1] FAO. An Introduction to the Basic Concepts of Food Security; 2008. www.foodsec.org/docs/concepts_guide.pdf.

[2] Burchi F, Scarlato M, and D'Agostino G. Addressing Food Insecurity in Sub-Saharan Africa: The Role of Cash Transfers. *Poverty & Public Policy journal*, 10. 2018.

[3] FAO, IFAD, UNICEF, WFP and WHO. The State of Food Security and Nutrition in the World 2019. Safe guarding against economic slowdowns and downturns. Rome, FAO; 2019. www.unicef.org/reports/state-of-food-security...

[4] United Nation (*UN).* Transforming Our World: The 2030 Agenda for Sustainable Development: UN; 2015. sustainabledevelopment.un.org/post2015/.

[5] Ruwoldt G. Food insecurity and Climate change. American Journal of Public Health. 2013; 103.

[6] FAO, IFAD, UNICEF, WFP and WHO. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, FAO; 2018. www.fao.org/state-of-food-security-nutrition/2018/en.

[7] Wheeler T, and Von Braun J. Climate Change Impacts on Global Food Security. *Science/Pub med*. 2013; 341(6145): 508-13.

[8] Wolfson JA and Leung CW. Food Insecurity and COVID-19: Disparities in Early Effects for US Adults. *Nutrients. 2000; 12*: 1-12.

[9] Shanks CB, Hingle MD, Parks CA, and Yaroch AL. The COVID-19 Pandemic: A Watershed Moment to Strengthen Food Security Across the US Food System. *AJPH*. 2020; 110: 1133-1134.

[10] McLinden T, Stover S, and Hogg RS. HIV and Food Insecurity: A Syndemic Amid the COVID-19 Pandemic. Springer Science, AIDS and Behavior; 2020.

[11] Unhale SS, Ansar QB, Gajghane V, Bharudkar SS, Gadekar PP and Biyani KR. Impact of covid-19 on food safety and food security. *World journal of advance healthcare research*. 2020; 4: 127-129.

[12] Niles MT, Bertmann F, Belarmino EH, Wentworth T, Biehl E and Neff R. The Early Food Insecurity Impacts of COVID-19. *Nutrients, 2020; 12*: 1-23.

[13] Pérez-Escamilla R, Cunningham K, Victoria Hall Moran. COVID-19, food and nutrition insecurity and the wellbeing of children, pregnant and lactating women: A complex syndromic; 2020.

[14] Endale W.B, Alemu T.G, Bizuayehu S. State of Household Food insecurity in Ethiopia: Review volume. *Journal of Radix international educational and Research consortiu. 2015;* 4(12): 1-12.

[15] Endalew B, Muche M, Tadesse S. Assessment of food security situation in Ethiopia: A Review. *Asian Journal of Agricultural Research. 2015;* 9(2): 55-66.

[16] South Omo Zone Health Department. Annual Health Sector Performance Report, Jinka: South omo zone Health Department; 2019.

[17] South Omo Zone Finance and Economic Development Sector. Socio economic and geo spatial data analysis and dissemination core work process: Zonal annual statistical abstract. Jinka: Brothers printing media; 2017.

[18] Polit DF, and Beck CT. Nursing Research: Generating and Assessing evidence for Nursing Practice .10th edition. Philadelphia: Wolters Kluwer; 2017.

[19] Creswell JW, and Creswell JD. Research design: Qualitative, quantitative, and mixed methods. 5th edition. Thousand Oaks, California: SAGE; 2018.

[20] Creswell JW, and Poth CN. Qualitative Inquiry and Research Design Choosing Among Five Approaches. 4th edition. Thousand Oaks, CA: SAGE; 2018.

[21] Burns N and Grove SK. The Practice of Nursing Research. 6th edition. ST. Louis: Elsevier; 2017.

[22] Denzin NK, and Lincon, YS (ed). The SAGE Hand book of Qualitative Research. 5th edition. LosAngeles: SAGE; 2018.

[23] Lincoln YS, and Guba EG. Naturalistic Inquiry. Newbury Park, CA: SAGE Publication; 1985.

[24] Cochrane L, and Tamiru Y. Ethiopia's Productive Safety Net Program: Power, Politics and Practice. *Journal of International development, Wiley. 2016;* 28: 649-665.

[25] World Bank group, Rapid Social Response, and GFDRR. Ethiopia's Productive Safety Net Program (PSNP) Integrated Disaster and Climate Risk Management: The World Bank; 2013.

[26] Federal Democratic Republic of Ethiopia (EFDRE). National Nutrition Program 2016-2020. Addis Ababa: Ministry of Health; 2016.

[27] Abebe G. Abridge of PhD dissertation: House food insecurity in the Sidama Zone of Southern Ethiopia: Factors, coping and adaptation strategies. *Journal of food security. 2018;* 6(3): 99-106.

[28] Oyinloye OD, Akinola OO, Akande YO, Akinyele AA, and Mosimabale MM. Food Insecurity in Africa. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS). 2018;* 23 (9): 68-75.

[29] Joseph AL, Gilbert JR, and Florax, RJ. How does population density influence agricultural intensification and productivity? Evidence from Ethiopia. *Elsevier Journal. 2015;* 48: 142-152.

[30] Okyere KA, Mekonnen DA and Zerfu E. Determinants of Food Security in Selected Agro-pastoral Communities of Somali and Oromia Regions, Ethiopia. *Journal of Food Science and Engineering. 2013;* 3: 453-471.

[31] Gupta P, Singh K, Seth V, Agarwal S, and Mathur P. Coping Strategies Adopted by Households to Prevent Food Insecurity in Urban Slums of Delhi, India. *Journal of Food Security/SCIEP. 2015;* 3 (1): 6-10.

[32] Belachew T, Lindstrom D, Gebremariam A, Hogan D, Lachat C, Huyregts L, and Kolsteren P. Food insecurity, food based coping strategies and suboptimal dietary practice of adolescents in Jimma zone South Ethiopia. *PLOS ONE. 2013; 8*(3): e57643.

[33] Abdu J, Kahssay M, and Gebremedhin M. Household food insecurity, underweight status, and associated characteristic among women of reproductive age group in Assyita district, Afar regional state, Ethiopia. *Journal of Environmental and public health. 2018;* 1-8.

[34] Engidaye G, Melku M, Yalew A, Getaneh Z, Asrie F, and Endawgaw B. Under nutrition, maternal anaemia and household food insecurity are factors of anaemia among preschool aged children in Menz Gera Midir district, Eastern Amahara, Ethiopia: a community based cross sectional study. *BMC Public health*. 2019; (19): 968.

[35] Abi M and Tolossa D. Household food security status and its determinants in Girar Jarso woreda, North Shewa Zone of Oromia region, Ethiopia. *Journal of Sustainable development in Africa*. 2015; 17(7): 118-137.

[36] Alemu ZA, Ahmed AA, Yalew AW and Simanie B. Spatial variations of Household Food Insecurity in East Gojjam Zone,Amhara Region, Ethiopia: Implications for agroecosystem-based intervention. *BMC Agricultural and Food Security*. 2017; 6(36): 1-9.

[37] FAO, IFAD, UNICEF, WFP and WHO. The State of Food Security and Nutrition in the World 2017. Building resilience for peace and food security. Rome, FAO; 2017.

[38] FAO. The State of Food and Agriculture: Innovation in family farming. Italy, Rome: FAO; 2014.

[39] Ngcamu BS, and Chari F. Drought Influences on Food Insecurity in Africa: A Systematic Literature Review. *International Journal of Environmental Research and Public Health.* 2020; 17(5897); 1-11.

[40] Hall, TPC, Dawson JI. Macdiarmid RB. Matthews & Smith P. The impact of population growth and climate change on food security in Africa: looking ahead to 2050, *International Journal of Agricultural Sustainability*. 2017; 15: 2, 124-135.

[41] Masipa, TS. The impact of climate change on food security in South Africa: Current realities and challenges ahead', *Jàmbá: Journal of Disaster Risk Studies. 2017;* 9(1), a411.