Mal J Nutr 25 (Supplement): 111-122, 2019

A qualitative study comparing the coping strategies between food secure and food insecure households of Kaluppini indigenous people in South Sulawesi

Nurbaya[1,3,4], Aria Kekalih[2*] & Judhiastuty Februhartanty[3]

[1]*Nutrition Department, Faculty of Medicine Universitas Indonesia, Jakarta, Indonesia;* [2]*Community Medicine Department, Faculty of Medicine, Universitas Indonesia, Central Jakarta, Indonesia;* [3]*Southeast Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO RECFON), Pusat Kajian Gizi Regional (PKGS), Universitas Indonesia, Jakarta, Indonesia;* [4]*Politeknik Kesehatan Kementerian Kesehatan Mamuju, Sulawesi Barat, Indonesia*

ABSTRACT

Introduction: Food insecurity remains a global challenge, especially among vulnerable indigenous populations. Coping strategies to maintain food security among indigenous groups can be unique and complex, being influenced by cultures. This study aimed to explore the coping strategies employed by food secure and food insecure households in times of food insufficiency, in the Kaluppini indigenous population of South Sulawesi, Indonesia. **Methods:** The study recruited mothers of children aged below 5 years, who agreed to participate in the study's focus group discussions (FGDs) and in-depth interviews. All information was recorded, transcribed verbatim and analysed. **Results**: A total of 61 mothers participated in 22 in-depth interviews and six FGDs. Five coping strategies were used by the Kaluppini people i.e. additional income generation, dietary alteration, access to alternative food sources, access to alternative cash sources, and, traditional ways of coping. Both food insecure and secure households reported making dietary changes, such as reducing consumption or substituting foods, borrowing food or money, and practising traditional coping strategies, such as food sharing after performing rituals. In order to generate income, food insecure households reported seeking additional work in the neighbourhood areas, while food secure households migrated in search of work to the other islands or other countries. **Conclusion:** Food insecure and food secure households changed their diets, borrowed food or money from relatives and relied on traditional coping mechanisms such as food sharing. It is suggested that food insecure Kaluppini households be encouraged to grow essential foods in their gardens to enhance food security.

Keywords: Food security, coping strategies, indigenous people, Indonesia

INTRODUCTION

The second goal of the Sustainable Development Goals of the United Nations is to end hunger, achieve food security and improve nutrition and promote sustainable agriculture, by 2030 (Charlton, 2016). Globally, millions experience food insecurity which is the situation when the availability of nutritionally adequate and safe foods is limited or uncertain (Parnell & Gray, 2014). A marker of food insecurity is

*Corresponding author: Aria Kekalih
Community Medicine Department, Faculty of Medicine, Universitas Indonesia
Jl. Pegansaan Timur no. 16 Cikini, Central Jakarta, 10320, Indonesia
Tel: +62 21 3141066; Mobile: +628129984449; E-mail: aria.kekalih@gmail.com

the prevalence of malnutrition among children younger than 5 years of age (Ghattas, 2014). The most recent data estimated that global hunger increased in 2016 and affected 815 million people, leading to stunting in one out of four children below the age of 5 years (FAO, 2017).

A growing body of research has shown that household food insecurity has adverse health consequences for children (Jackson & Vaughn, 2017). Inadequate intake of nutritious foods lead to malnutrition and poor development outcomes such as deficits in academic achievement, social developmental delays and poorer interpersonal relations (Hannum, Liu & Frongilo, 2014; Wight *et al.,* 2014).

The burden of food insecurity tends to be higher among indigenous peoples than among other people in a given country or region (Egeland *et al.*, 2011). The World Bank reported that indigenous populations are the most marginalised peoples, making them particularly vulnerable to food insecurity (Perry *et al.*, 2006; Montenegro & Stephens, 2006). Studies in New Zealand (McKerchar *et al.*, 2014) and Brazil (Ferreira *et al.*, 2012), reported that indigenous children had higher rates of food insecurity and undernutrition compared with their non-indigenous peers. Similarly, more than one third of the indigenous communities in Malaysia experienced food insecurity that lead to malnutrition (Pei, Appannah & Sulaiman, 2018). In order to survive, food insecure households are known to adopt coping strategies (Usfar, Fahmida, & Februhartanty, 2007). Coping strategies are carried out when people do not have access to enough food, and to escape from food shortages and crises (Schrimpf & Feil, 2012). Strategies that are used to maintain food security among indigenous populations can be unique and complex, often being influenced by customary laws, cultures, and beliefs.

The indigenous population of Indonesia comprises 40–50 million people (Bappenas RI, 2013). There are few reports on how the indigenous people cope with food insecurity. A study among Ciptagelar people, an indigenous group from West Java, reported that the 31.2% stunting in young children was associated with decreased food availability. A coping strategy implemented by tribes of this population was to build *leuit* (store for food reserves) (Khomsan, Riyadi & Marliyati, 2013).

The Kaluppini people are an indigenous group comprising about 4,000 inhabitants who live in a remote and mountainous area around Mt. Latimojong, in South Sulawesi province, Indonesia. They have retained their traditional culture, and they live on customary land called as *Tana ongko sa'pulo tallu* (the 13 selected areas), which consists of forests and farms. The forests serve as their economic and food reserves, and also for conducting customary ceremonies (AMAN Sulawesi Selatan, 2016). Little is known about how this population copes with food insecurity.

Cultures and traditions play important roles in determining food production among indigenous peoples, and this can have a significant impact on food security and nutritional status (Ezeomah & Farag, 2016). Indigenous peoples face complex challenges in food availability due to their remote and isolated locations (Skinner *et al.*, 2013). Gaining a greater understanding of indigenous peoples and their traditional foods and livelihoods can help address undernutrition by targeting appropriate interventions to them. Specifically, by improving the understanding on how the Kaluppini indigenous population copes with food security, the Indonesian government may be able to improve their well-being through culturally appropriate food and agricultural programmes.

This study aimed to explore the coping strategies adopted by food secure and food insecure households in the Kaluppini indigenous population.

MATERIALS AND METHODS

Study design

This qualitative comparative study was conducted among the indigenous people living in Kaluppini in the Enrekang District, in South Sulawesi, Indonesia. Data collection took place from February 2017 to April 2017.

Data collection

The participants were mothers with < 5 children, and their ages ranged 17-49 years. During recruitment, we collected information on the nutritional status of children below 5 years of age, the caregivers, the household residents (i.e. nuclear or extended family), the number of people in the household, the birth order, the children's age and sex. The inclusion criteria of the participants were self-identification as Kaluppini people who were living in the Kaluppini area during the data collection period.

The first informant for this study was selected by asking the local midwife, customary leader, or head of village. The next informant candidate was selected by snowball sampling, after asking the previous informants and learning of certain variations and criteria that they had. Each characteristic and variation of the informants were checked so that they met all selection criteria. Using purposive sampling, the researcher screened and categorised informants into food secure and food insecure households based on their responses to the U.S. Household Food Security Survey Module (US-HFSSM) questionnaire. The informants were then categorised based on the US-HFSSM into food secure (score 0-2) and food insecure without hunger (score 3-7), food insecure with hunger (score 8-12), and food insecure with severe hunger (score 13-18) (Bickel *et al.*, 2000).

Data collection was undertaken through focus group discussions (FGDs) and in-depth interviews (IDIs), using a semi-structured questionnaire (Table 1). The participants chose the location for the interview that was convenient to them and where they felt comfortable. Most interviews were held in the homes of the participants to make them feel more relaxed during the interview. It also allowed them (i.e. the mothers and carers) to look after their children. The participants were interviewed about their household coping strategies when facing food shortage. Each session was conducted both in Bahasa Indonesia (the Indonesian language) and Bahasa Endekang (the Kaluppini language) and lasted for 60-90 minutes. We conducted

Table 1. List of interview questions

In-depth interviews (IDIs)	*Focus group discussions (FGDs)*
1. What is your opinion about food availability at your home?	1. What is your opinion about food availability at your home?
2. Do you feel a lack of food at your home in the last 3 months?	2. If there is not enough food at home, what do Kaluppini people do to get enough food to eat?
3. If there is not enough food at your home, what do you do to get enough food to eat?	3. Are there any other ways that Kaluppini people could try to help their families to access more food?
4. Are there any other ways that you could try to help your family to access more food?	4. What do you think can be done to make it easier for Kaluppini people to get enough food
5. Does your husband or other family member help to address food shortage at your home? If so, in what ways?	

FGD for each group of households separately. For example, the first FGD was held only among informants from food secure households and the following FGD was only for informants from food insecure households. All interviews were recorded using a digital voice recorder.

Ethical considerations

Ethical approval for this study was granted by the Health Research Ethics Committee of the Faculty of Medicine, University of Indonesia (number 77/UN2.F1/ETIK/2017). Participation was voluntary, and all the informants gave their signed informed consent before data collection.

Data analysis

Preliminary analysis was conducted during data collection after each IDI and FGD was completed. This helped the researcher to ensure the completeness of the information gathered and highlighted any issues that needed to be clarified during further data collection (Creswell, 2013). The recorded FGDs and IDIs were transcribed verbatim and imported to Microsoft Word for the content analysis, where the researcher checked all the transcript files to ensure their completeness. Data analysis was then conducted in three steps: data coding, data reduction, and the drawing of conclusion(s) or verification. The data were analysed both manually and by the Dedoose 7.6.6 computer software.

RESULTS

A total 61 mothers participated in this study (22 mothers in the IDSs while 41 mothers in the six FGDs). Out of the total participants, about half (52.5%) were from food secure households and half (47.5%) from food insecure households. Among the latter, majority (72.4%) were identified as food insecure without hunger, while 24.1% were with hunger and 3.4% with severe hunger. The characteristics of the participants are summarised in Table 2.

Emerging themes

Overall, the Kaluppini people used five themes emerged as common strategies to cope when food became insufficient. They undertook alternative/additional income generation work, made dietary alterations, accessed alternative food sources during periods of insufficiency, accessed alternative cash sources during critical periods and used traditional ways of coping. Table 3 shows the similarities and differences in coping, indicating that food insecure households applied more coping strategies.

Additional income generation

Most Kaluppini people were farmers. In times of food insufficiency, household members (e.g. husband) took up additional, different jobs to generate income. Food insecure and food secure households reported different ways of generating additional income. Food insecure households would seek additional work in the town or neighbouring areas to cope with the food scarcity situation.

> *"My husband sometimes looks for an additional job as a carpenter besides cultivating maize and peanuts"* (Mother, 33 years old, wasting and underweight child, extended family, food insecure, IDI)

In contrast, husbands from food secure households did *Ma'sompa* to obtain a better income. *Ma'sompa* means migrating from the village and going out of the country or moving to another island to get a new job. Most of them went to the islands of Papua or Kalimantan as the main destination of *Ma'sompa*, but some also went to work in neighbouring Malaysia.

"My husband went to Sendakan in Malaysia. He has been away for 2 years because of our economic problems" (Mother, 34 years old, normal child, extended family, food secure, IDI)

"I would go abroad if I had less income to support my family's needs. I could join a company in the logging industry if I migrated to the Papua island" (Husband, food secure, 37 years old)

Food insecure households acted differently to generate income when money became insufficient as explained by one of the informants.

"My husband did ma'sompa before we were married. But now not anymore because there is not enough money to go abroad. If there is money, it's better to just buy food" (Mother, 33 years old, wasting and stunting child, extended family, food insecure, IDI)

Dietary alterations

Some households made alterations to their diet by reducing the amount of food consumed or substituting the usual type of food consumed for cheaper varieties. This involved being frugal, purchasing cheaper food, eating plain rice, processed flour, and cooking *nande*

Table 2. Characteristics of participants and study children

Characteristics	*Food Secure HH (n = 32)*	*Food Insecure HH (n = 29)*
Nutritional status of the children, n (%)		
Normal	22 (68.7)	9 (31.0)
Wasting	1 (3.1)	2 (6.9)
Underweight	2 (6.3)	7 (24.1)
Stunting	7 (21.9)	11 (37.9)
Caregiver age (years), n (%)		
17–35	23 (71.9)	13 (44.8)
36–50	9 (28.1)	16 (55.2)
Type of family, n (%)		
Nuclear	14 (43.8)	16 (55.2)
Extended	18 (56.2)	13 (44.8)
Birth order, n (%)		
1st child	9 (28.1)	4 (13.8)
Not 1st child	23 (71.9)	25 (86.2)
Child age, n (%)		
0–23 months	24 (75.0)	17 (58.6)
24–59 months	8 (25.0)	12 (41.4)
Child sex, n (%)		
Male	21 (65.6)	14 (48.3)
Female	11 (34.4)	15 (51.7)
Number of family member, n (%)		
≤ 5	14 (43.8)	6 (20.7)
≥ 6	18 (56.2)	23 (79.3)

Table 3. Similarities and differences in coping strategies between food secure and food insecure households

No	*Type of coping strategies*	*Similarities*	*Differences*	
			Food insecure households	*Food secure households*
1	Additional income generation		Seek additional work Left from school for working	*Ma'sompa* (migration)
2	Dietary alteration	Eating plain food, *Nande dalle/Nande bettawe* (rice cooked mixed with maize/ cassava)	Purchase cheaper food Processing flour	Being frugal lifestyle
3	Access to alternative food sources	Process the *gabah* stock Looking for food at the forest	Children eat at relative's house Taking food from own stall	
4	Access to alternative cash sources	Borrow money from family Sell the peanuts/maize stock	Draw money from saving	
5	Traditional coping methods	*Nande sesa* (rice with a side dish of chicken or meat and covered by teak leaves) *Sumaro* (an activity where people help harvesting and they will get payment) Stocking *gabah*/peanuts/maize	*Ma'kambi* (livestock breeder) *Ma'tanan uma sa'de bola* (home garden)	

dalle (rice cooked with maize) or *nande bettawe* (rice with cassava). Different coping ways were adopted by the food secure and food insecure households. In general, the food secure households would be more frugal and would calculate their food expenditure for a month. Food insecure households would purchase cheaper foods.

> *"We buy cheaper food that is enough for our family; we buy cheaper instant noodles. It is enough for our family for one meal. I want to buy the better one, but the money was not enough"* (Mother, 34 years old, stunting child, extended family, food insecure, IDI)

In general, they ate simple foods, where the food insecure households consumed only plain rice, while food secure households consumed rice and vegetables. However, the coping strategy that was used by all the Kaluppini participants usually involved cooking *nande dalle* or *nande bettawe* so that their rice stores did not run out quickly.

> *"Sometimes I cook nande dalle. So that our rice doesn't run out fast"* (Mother, underweight and stunting child, 40 years old, nuclear family, food insecure, IDI)

> *"Well, we just eat plain rice. It is hard to say. If we say it was not enough but just made it enough. Therefore, I do not cook too much"* (Mother, 28 years old, underweight and stunting child, nuclear family, food secure, IDI)

When the food insecure households did not have any rice to cook, they would process flour into a traditional cake to feed their children. This coping strategy was only found among food insecure households.

Access to food during insufficient periods

The Kaluppini people used coping ways to obtain food during critical periods of food insufficiency, such as grinding *gabah* (unhulled rice) stock, borrowing rice from relatives, having children eat at a relative's home, looking for food in the forest or taking food from their own stalls. Both food secure and food insecure households would grind their unhulled rice stock. It was notable that Kaluppini people had a tradition of not selling their rice, which they would store as unhulled rice and grind it when their reserves had decreased. The unhulled rice was stored in their ceilings.

> *"We do not grind our gabah. We purchase rice first. We save our gabah and later when there is no more money, we will grind the gabah"* (Mother, 28 years old, underweight and stunting child, extended family, food secure, IDI)

They sometimes borrowed rice from relatives and paid it back later as rice; however, they only borrowed rice from relatives (mainly parents) to avoid damaging their *Siri'* (pride; personal honour or self-esteem). Sometimes, when there was no more food at home, children would go to a relative's house (mainly grandparents) to eat, but they would never go to other houses. Another strategy used by food insecure households was to take food from their own stalls.

> *"So, if we borrow rice, we will return it in the form of rice as well"* (Mother, stunting child, 40 years old, nuclear family, food insecure, FGD)

Access to cash during critical periods

When to cash was needed during critical periods of food insufficiency, the Kaluppini people would borrow money

from family members (mainly parents), sell their stored peanuts/maize or draw money from their savings. They would not borrow money or rice from outsiders or from food stalls.

> *"We never borrow from other people. We only borrow from relatives. We maintain our Siri' (self-esteem; pride) and do not borrow from our neighbours"* (Mother, 33 years old, wasting and underweight child, extended family, food insecure, IDI)

> *"We usually borrow money, but we do not borrow rice because if we borrow money, we can buy fish or other needs"* (Mother, 21 years old, normal child, extended family, food insecure, FGD)

Selling surplus peanuts and maize that are stored is a common coping strategy. After harvesting, people would store these commodities without peeling and store them in their homes or in their ceilings where it would stay warm and remain of good quality.

Traditional coping methods

The traditional methods of coping with insufficient food of the Kaluppini people were related to rituals and seasons. These included consuming *nande sesa* (a food dish), performing the *sumaro* (helping with harvesting), undertaking *ma'kambi* (livestock breeding), and storing *gabah* (unhulled rice), maize or peanuts. When a ritual was performed, people would gather in one place and would donate foodstuffs such as rice and chickens, according to their ability. They would cook and eat the food together. After the rituals, everyone would take a pack of rice with a side dish of meat or chicken covered by *daun jati* (teak leaves). This was called *nande sesa.* Kaluppini people believed that covering the food with teak leaves would prevent the food from getting stale quickly.

Both food secure and insecure households stored unhulled rice, maize and peanuts was mainly related to the need for immediate access to food and cash. The unhulled rice stock was used for immediate access to food while the sale of maize and peanuts provided immediate access to money.

Food secure and insecure households would both take home the *nande sesa*, and this could help them save rice for up to 2 days. In order to enable the rice to last longer, food insecure households would dry it out and later fry it into crackers.

> *"If there was a ritual, we sometimes bring home a pack of rice with meat covered by teak leaves. Sometimes it is enough to eat for two up to three times"* (Mother, 30 years old, normal child, extended family, food secure, FGD)

Sumaro was a traditional coping strategy that was applied by both food secure and insecure households. This involved helping someone to harvest in return for a part of the harvest crop as a fee. The harvest was divided as six parts to the owner and one part for *sumaro*.

> *"Sometimes my husband goes for sumaro or works as a bricklayer outside Kaluppini. If we think that our food stocks are decreasing, then we will look for sumaro as an additional source of income"* (Mother, 33 years old, wasting and underweight child, extended family, food insecure, IDI)

By contrast, *ma'kambi* was only used by food insecure households, who would breed the cows of the relatives or other people who had cows. However, because they had to take care the cows and wait for them to breed to produce calves, this was a long-term option.

> *"Sometimes we also breed cows. If the cow has calves, we will share the calves. If there are two calves then we will share it equally, one for me and one for the cow owner. But if it is only one, we will divide the result equally"* (Mother, 41 years old, wasting child, extended family, food insecure, IDI)

> *"Sometimes we also raise livestock, take care our relative's cows. But it needs a long time ago to develop"* (Husband, food secure, 37 years old).

Besides the traditional coping strategies, *mattanan uma sa'de bola* (growing vegetables in the home garden) was also used by food insecure households. This was mostly used to fulfil their daily needs.

> *"I intentionally plant vegetables to add food at home and also so that our vegetables are varied"* (Mother, 33 years old, wasting and underweight child, extended family, food insecure, IDI)

> *"I plant vegetables, tomatoes or anything that we can plant ... I plant just for daily consumption"* (Mother, 34 years old, stunting child, nuclear family, food insecure, IDI)

By contrast, the food secure households fulfil their vegetable needs by buying from the market.

> *"I don't plant vegetables. Sometimes we ask vegetables from neighbours. But I usually buy vegetables at the market"* (Mother, 28 years old, wasting and underweight child, extended family, food secure, IDI)

DISCUSSION

Households apply different coping strategies to manage food shortages and crises (Balta & Tessema, 2015), but these tend to be modified at both the household and the individual levels. Coping strategies vary in each community based on their culture and geographical differences (Farzana *et al.*, 2017). The coping strategies applied by indigenous mothers in food secure and food insecure Kaluppini households were consistent with their cultures and traditional beliefs.

In general, husbands played the key role in generating additional income. Husbands from food insecure households would seek additional work from the local area (village), while husbands from food secure households would do *ma'sompa* or abandon the village to work on other islands or even outside the country. The husbands still had the most responsibility for household incomes (Smith *et al.*, 2003). In Zambia, women were responsible for generating additional income by collecting firewood and selling it to townspeople (Schrimpf & Feil, 2012). This became a burden to them and increased their workload, as they were then required not only to take care of their children but also to generate more income to cope with food shortages.

Most households stored their harvest yields in their own homes, as *gabah,* together with maize and peanuts. This finding was consistent with that of other studies in Indonesia, though with differences in where food was stored. Whereas the Kaluppini indigenous people tended to store their reserves hung from the ceilings, the *Ciptagelar* indigenous people stored their unhulled rice collectively in a warehouse of food reserves called a *leuit.* Their food security status was indicated by the amount of unhulled rice in the *leuit* (Khomsan *et al.*, 2013). People from rural East Nusa Tenggara province stored maize in a *rumah bulat*, a separate house used for food storage and as a kitchen (Fatmaningrum, Roshita & Februhartanty, 2016).

Food storage was important to ensure food availability during shortages

or droughts (Dweba & Mearns, 2011). If they had sufficient money, the Kaluppini people preserved their unhulled rice and purchased rice from the market for daily consumption. They would only grind their unhulled rice stock if they did not have enough money to buy rice. When food insufficiency became more dire, or there was no money or food to eat, people tended to borrow money or rice from relatives. This practice has been reported among other rural populations, who borrow rice from neighbours (Fatmaningrum *et al.*, 2016). By contrast, the Kaluppini households borrowed only from relatives (because of *Siri'*).

The tradition of sharing is important to many indigenous peoples. According to most traditions, food should be shared rather than sold (Damman, Eide & Kuhnlein, 2008). This sharing tradition is still practised among the Kaluppini people. Every time they performed rituals, they would offer a lot of food that would be shared among those attending. Social networks and food sharing in community feasts enhanced health and well-being among indigenous peoples (Kuhnlein, Erasmus & Spigelski, 2009). This food-sharing practice ensures food availability at home (Chege, Kimiywe & Ndungu, 2015). Skinner *et. al* (2013) reported similar findings in Fort Albany, Canada, where food sharing between families and the among the community was a key coping strategy for food insecurity.

Another coping strategy was *mattanan uma sa'de bola,* or home gardening. This was a positive practice among the food insecure Kaluppini households. They would plant vegetables in their home gardens to meet their daily needs. Many studies have found that home production for family consumption was an important food source in many rural areas (United Nations, 2012). Another benefit of home gardening is that it can ensure continuity of agricultural diversity and can provide a good place for farmers to experiment with domesticating wild plants (FAO, 2015). Therefore, both food secure and food insecure Kaluppini households should be encouraged to establish home gardening to add their available food stocks and to ensure a broader vegetable availability (e.g. eating tubers when food stocks run out or when food prices are high).

Limitations of study

This study involved a large number of informants who participated in both the IDIs and FGDs. They were willing to describe their experiences of times when food was insufficient, something which was a sensitive matter. Another limitation of the study was that the study was conducted during the rainy season, and hence we did not observe food security related practices during the dry season.

CONCLUSION

Both food secure and food insecure households in the Kaluppini indigenous population experienced low food availability, with similarities and differences in how each group coped with these food shortages. The main similarities were in changing their diets, borrowing food or money from relatives and relying on various traditional coping mechanisms. It is suggested that food insecure Kaluppini households should be encouraged to grow essential foods in their gardens to enhance their food security. Public and private agencies should offer appropriate programmes to address the food insecurity problems of the Kaluppini people.

Acknowledgement

The authors would like to thank all Kaluppini people who participated in this study. This research was supported by a USAID-PRESTASI Scholarship.

Authors' contributions

N, compiled the first draft of the manuscript; KA, involved in the critical revision of the draft and approved the final draft; FJ, involved in the critical revision of the draft and approved the final

draft. All authors contributed to the conception and design of the work, were involved in the acquisition and analysis of the data as well as in data interpretation.

Conflict of interest

All authors declare that they have no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

References

AMAN Sulawesi Selatan (2016). *Profil Masyarakat Adat Kaluppini Kabupaten Enrekang*. Aliansi Masyarakat Adat Nusantara (AMAN) Sulawesi Selatan, Makassar.

Balta A & Tessema A (2015). Assessment of household food security and coping strategies in Wolaita Zone: The case of Sodo Zuria Woreda. *JIPD* 18:23-40.

Bappenas RI (2013). *Masyarakat Adat di Indonesia: Menuju Perlindungan Sosial yang Inklusif (1st ed.)*. Badan Perencanaan Pembangunan Nasional Republik Indonesia, Jakarta.

Bickel G, Nord M, Price C, Hamilton W & Cook J (2000). *Guide to Measuring Household Food Security*. USDA, Alexandria VA.

Charlton KE (2016). Food security, food systems and food sovereignty in the 21st Century: a new paradigm required to meet sustainable development goals. *Nutr Diet* 73(1):3-12.

Chege PM, Kimiywe JO & Ndungu ZW (2015). Influence of culture on dietary practices of children under five years among Maasai Pastoralists in Kajiado, Kenya. *Int J Behav Nutr Phys Act* 12(1):131.

Creswell JW (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage, California.

Damman S, Eide WB & Kuhnlein HV (2008). Indigenous peoples' nutrition transition in a right to food perspective. *J Food Pol* 33(2008):135-155.

Dweba TP & Mearns MA (2011). Conserving indigenous knowledge as the key to the current and future use of traditional vegetables. *Int J Inf Manage* 31(2011):564-571.

Egeland GM, Johnson-Down L, Cao ZR, Sheikh N & Weiler H (2011). Food insecurity and nutrition transition combine to affect nutrient intakes in Canadian Arctic Communities. *J Nutr* 141(9):1746-1753.

Ezeomah B & Farag K (2016). Effects of development on indigenous dietary pattern: a Nigerian case study. *Appetite* 107(2016):59-68.

FAO (2015). *Shifting Cultivation, Livelihood and Food Security: New and Old Challenges for Indigenous Peoples in Asia.* Erni C (ed.). Food and Agriculture Organization, Bangkok.

FAO (2017). *The State of Food Security and Nutrition in the World 2017*. Food and Agriculture Organization, Rome.

Farzana FD, Rahman AS, Sultana S, Raihan MJ, Haque MA, Waid JL, Choudhury N & Ahmed T (2017). Coping strategies related to food insecurity at household level in Bangladesh. *PloS One* 12(4):e0171411.

Fatmaningrum D, Roshita A & Februhartanty J (2016). Coping strategies for food insecurity among adolescent girls during the lean season in East Nusa Tenggara, Indonesia: a qualitative study. *Br J Nutr* 116(S1): S42-48.

Ferreira AA, Welch JR, Santos RV, Gugelmin SA & Coimbra Jr CE (2012). Nutritional status and growth of indigenous Xavante children, Central Brazil. *Nutr J* 11(1):3.

Ghattas H (2014). *Food Security and Nutrition in The Context of the Global Nutrition Transition.* Food and Agriculture Organization, Rome.

Hannum E, Liu J & Frongillo EA (2014). Poverty, food insecurity and nutrition deprivation in rural China: implication for children's literacy achievement. *Int J of Educ Dev* 34(2014):90-97.

Jackson DB & Vaughn MG (2017). Household food insecurity during childhood and adolescent misconduct. *Prev Med* 96(2017):113-117.

Khomsan A, Riyadi H & Marliyati SA (2013). Food security and nutrition and coping mechanism in Ciptagelar tradition community in West Java. *JIPI* 18(3):186-193.

Kuhnlein HV, Erasmus B & Spigelski D (2009). *Indigenous Peoples' Food Systems: the Many Dimensions of Culture, Diversity and Environment for Nutrition and Health.* Food and Agriculture Organization, Centre for Indigenous Peoples' Nutrition and Environment (CINE), Rome.

McKerchar C, Bowers S, Heta C, Signal L & Matoe L (2014). Enhancing Maori food security using traditional Kai. *Glob Health Promot* 22(3):5-24.

Montenegro RA & Stephens C (2006). Indigenous health in Latin America and the Caribbean. *Lancet* 367(9525):1859-1869.

Parnell WR & Gray AR (2014). Development of a food security measurement tool for New Zealand households. *Br J Nutr* 112(8):1393-1401.

Pei CS, Appannah G & Sulaiman N (2018). Household food insecurity, diet quality, and weight status among indigenous women (Mah meri) in Peninsular Malaysia. *Nutr Res Pract* 12(2):135-142.

Perry GE, Arias OS, Lópes JH, Maloney WF & Servén L (2006). *Poverty Reduction and Growth: Virtuous and Vicious Circles. World Bank Report.* The World Bank, Washington, DC.

Schrimpf B & Feil P (2012). *Traditional Food Crisis Coping Mechanisms: A Regional Perspective from Southern Africa.* Diakonie Werk der EKD, Germany.

Skinner K, Hanning RM, Desjardins E & Tsuji LJS (2013). Giving voice to food insecurity in a remote indigenous community in subarctic Ontario, Canada: traditional ways, ways to cope, ways forward. *BMC Public Health* 13(1):427.

Smith LC, Ramakrishnan U, Ndiaye A, Haddad L & Martorell R (2003). *The Importance of Women's Status for Child* Nutrition in Developing Countries. International Food Policy Research Institute (IFPRI), Washington, DC.

United Nations (2012). *Baseline Nutrition and Food Security Survey 2012.* United Nations, Tirana.

Usfar AA, Fahmida U & Februhartanty J (2007). Household food security status measured by the US-Household Food Security/Hunger Survey Module (US-FSSM) is in line with coping strategy indicators found in urban and rural Indonesia. *Asia Pac J Clin Nutr* 16(2):368-374.

Wight V, Kaushal N, Waldfogel J & Garfinkel I (2014). Understanding the link between poverty and food insecurity among children: does the definition of poverty matter? *J Child Poverty* 20(1):1-20.