Perceptions of healthy eating and reasoning in food choices among mothers in South Tarawa, Kiribati

Photo by Danica Waiti

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The author worked as an independent researcher towards a Master's thesis in Public Health through Lund University, Sweden, drawing upon resources and data provided by the National Nutrition Centre of Kiribati. The Ministry of Health and Medical Service's National Nutrition Centre was central to establishing key relationships that enabled this study to proceed and was involved in planning, data-collection and the discussion of preliminary findings. This paper is published with the joint support of the National Nutrition Centre and ChildFund Kiribati.

Executive summary

This paper reports findings from a 2017 study of food choices and perceptions of healthy eating in South Tarawa, Kiribati. The purpose of the investigation was to gauge knowledge, attitudes and practices surrounding nutrition amongst mothers in South Tarawa. Using a combination of desktop research, focus-group discussions, in-depth interviews and the involvement of key informants, this study has captured the insights and opinions of mothers in South Tarawa. Following are the key recommendations:

Provide large-scale nutrition training: Nutritional literacy should be improved to ensure there is a common understanding about what good nutrition is, in accordance with national nutrition guidelines. This suggestion is a response to inconsistencies noted between the respondents' understandings of a balanced diet and of healthy foods. It is noted that amongst the mothers interviewed, neither education nor lifestyle appeared to influence these understandings.

Include mothers and children in behaviour-change interventions: In conjunction with improved nutritional literacy, a participatory approach should be used toward the planning and implementation of food-oriented interventions. This approach should engage both mothers and children: children are proposed as particularly effective agents of change; mothers need to feel they are the owners of change.

Interventions should be relevant: Food and cooking suggestions need to be relevant, affordable, tasty and easily incorporated into the lifestyle. Food choices are influenced by access to resources, knowledge, preferences and expectations.

Establish community gardens to improve access to healthy food: Community gardens are identified as a means to healthier eating. These gardens should be planned in a participatory manner, enhancing confidence, ownership and knowledge of food cultivation. Gardens be made accessible to the community as a whole, contributing to a broad shift in eating practices rather than restricting these benefits to limited sections of society or to limited hours. Innovative growing models relevant to the crowded environment of South Tarawa should be introduced.

Review policy and trade practices to make healthy food more available: Government action is required to promote the local food trade, improve trade policy, and join private and public efforts to improve citizen health. In this study structural factors – such as a dearth of cultivatable land, the cost of commercially-available foods, and the types of foods made available for purchase – are shown to strongly shape food choices. Food policies should be improved, with greater monitoring of outcomes by the government of Kiribati and by other actors responsible for community interventions.

Introduction

Over recent decades, the world has experienced a transition towards nutrient-poor, energy-dense and high-sugar diets with elevated levels of meat, salt and fat. Globalisation, urbanisation and an international import-export market that dictate food prices and result in the greater affordability of unhealthier options have contributed to diminished farmlands and an increased reliance on food purchased in supermarkets (Skolnik, 2016). Access to processed food has increased levels of non-communicable diseases (NCDs) such as diabetes, cardiovascular disease (CVD) and obesity (Ibid). Of a global 56 million deaths in 2012, 38 million were the result of NCDs, making them the main cause of death worldwide (WHO, 2014) .

The effects of unhealthy eating is especially severe in low- and middle-income countries (LMICs) (Bates et al., 2017). Not only do LMICs yield the highest percentages of NCDs but they grapple with complications resulting from nutritional insufficiencies that create a double burden of malnutrition. This affects children in particular, causing undernutrition, vitamin A deficiency, stunting and wasting (WHO, 2015).

The known facts are alarming. According to the World Health Organisation, children with stunted growth face a higher risk of obesity (ibid). It also identifies that overweight children are often micronutrient deficient whilst malnourishment in childhood increases the risk of NCDs in later life. Exclusive breastfeeding for the first six months of infancy is particularly important toward ensuring adequate growth among children and reducing the risk of under-5 child-mortality (WHO, 2009). Micronutrient deficiencies, gestational diabetes, obesity and other nutrition-related diseases, pre- and post-natally, can have severe effects on the health of a child. Healthy diets are therefore vital throughout the course of life (WHO, 2015).

With mothers bearing the principal responsibility for the care of their children and for the preparation of food (Lloyd, 2009; Schultz, Vatucawaqa and Tuivaga, 2007, cited in Morgan et al., 2016), it is important to examine the factors that influence their food choices. Studies across economic strata identify that cost and taste are primary criteria toward food selection (Raskinda et al., 2017; Hardcastle and Blake, 2015). Education levels are an additional factor, with complex nutritional labelling found to impede the selection of healthy food (Machín et al., 2016). Collectively, these studies also reveal that expectations surrounding gender influence food choices and preparation. It is common for mothers to experience stress, guilt and fatigue and to feel pressed for time when preparing food for their families (Blake et al., 2009).

In the Pacific region, there is hardly any research on what influences mothers reasoning and attitudes towards food. In Kiribati, the only study to be found is from South Tarawa, where it has been found that mothers maintain a sense of obligation to the opinions of elder relatives on breastfeeding practices and the division of food in households. Cultural factors are cited as a reason for poor engagement with and inadequate knowledge of breastfeeding practices (Reiher, 2016). Amongst these practices are providing pandanus juice to infants as a form of medicine, and an abstinence from breastfeeding whilst pregnant with successive children.

This research investigates how mothers perceive food choices, preparation and healthy eating in South Tarawa, Kiribati, with regards to their own diets, their children and food availability. Exploring these issues will add to the understanding of how to implement nutritional interventions with culturally adapted means of stimulating behaviour change.

Methodology

This study was carried out by a Master's student of Public Health at Lund University, Sweden. Over the course of five weeks – between February and March 2017 – material from focus group discussions (FGDs) and in-depth interviews was collected in Kiribati to supplement desktop research. Three urban areas of the capital, Betio, Bairiki and Bikenibeu, covering the west, central and east spans of South Tarawa, were chosen to conduct the FGDs and in-depth interviews.

Desktop research

Desktop research gathered for this study relied on the collation of data from academic research, government and non-governmental organisations, and reports released by regional authorities across the Pacific region. This provided a background and contextual insights to the food choices and impacts of malnutrition on the demographic group involved in the study. This research was also used to chart the types of interventions that have been conducted locally and regionally.

Focus group discussions

Focus Group Discussions (FGDs) were identified as a useful means of data collection, with the premise that group interaction is central to understanding norm systems, opinions and how people make choices (Dahlgren et al., 2004). Five FGDs were held, each of which commenced with 5-8 participants. Early departures reduced these groups to 4-6 by the end of each FGD. Four main themes were put forward by a discussion guide: 1) *The meaning of health and healthy food;* 2) *Local food versus imported food*; 3) *Obtaining and cooking food;* 4) *Priorities when choosing food for children*. These themes were elaborated upon with open-ended questions that encouraged further discussion. Pictures were also used as stimulus materials to facilitate discussion (Hennink, 2007).

In-depth interviews

Face-to-face interviews were carried out with three informants in order to compare and contrast ideas that had emerged from the FGDs on a more personal level. These in-depth interviews followed the same themes as the FGDs but placed greater focus on personal experiences and encouraged the informants to provide examples.

Key informants

Following data collection, informal interviews were held with two key informants from the area. These informants were chosen for their capacity to identify knowledge gaps in the data and to discuss the preliminary results from a structural and individual perspective, ensuring that the assumptions extracted rang true and reasonable. One informant worked in the field of health, youth and education whilst the other was employed by a local government association with expertise in the field of human rights, sustainable development and good governance.

Ethical considerations

ChildFund's Code of Ethics and Child Safeguarding & Child Protection policy were foundational to all parts of this study (ChildFund Alliance, 2017). All informants were assured that their identities would be protected in transcriptions and in the reporting of results. Limitations in the confidentiality of group discussions must be acknowledged; participants of the FGDs were encouraged to leave the information that had been shared in the group within that space.

Prior to conducting FGDs/interviews, participants were asked for oral consent and informed that those who wished to opt out could do so at any stage. Information was also provided on viewing the report, following its completion. Permission to access information on potential informants was obtained through health centres with the oversight of Kiribati's Ministry of Health and Medical Services (MHMS) and National Nutrition Centre (NNC). A research permit and research visa was obtained from the Government of Kiribati, prior to commencing the study.

Desktop research

The Pacific

While NCDs and other issues linked to poor diets are of critical concern worldwide, they are exacerbated in the Pacific region. According to the WHO (2015), 25 per cent of the adult population in the region is overweight. A third of the regional population has been diagnosed with high blood pressure and in many Pacific nations levels of obesity are above 50 per cent (Mercer, 2007, cited in FAO, 2015). These issues are consequences of unhealthy eating practices, examples of which include excessive salt intake and low consumption of fruit and vegetables (FAO, 2015). High percentages of the population in Kiribati, Nauru and Papua New Guinea consume below the FAO/WHO daily-recommended intake of 400g fruit and vegetables (99.3, 98.9 and 97 per cent respectively) (SPC, 2010; FAO, 2015). Only a third of the region's infants are exclusively breastfed for the first six months of life. Amongst children in the Pacific, 11.6 million are stunted and 4.7 million underweight (WHO, 2010, cited in FAO, 2015).

Regional nutritional initiatives

Institutions and NGOs are working broadly toward developing guidelines and action plans to improve practices around nutrition in the Pacific. Many of these agencies focus on joint efforts between disaster risk reduction and other forms of behaviour change for improved nutrition. Due to increased vulnerability and challenges to food security following natural disasters such as cyclones, floods and droughts, emergency interventions and resilience-building are high priorities. Nutrition is essential to all phases - both in the immediate disaster response and in building capacity for sustainability and improved nutritional practices in the long-term. As such, nutrition should be regarded as multifaceted and be targeted at many levels in the community using a participatory approach.

Two examples of regional initiatives are the Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) and the Promotion of Fruit and Vegetables for Health Initiative (PROFAV). FRDP provides a guideline on how to build resilience to climate change and natural disasters and how to maintain sustainability, simultaneously. It advocates that joint efforts at all levels of society (health, education, water and sanitation, social institutions, energy, agriculture, fisheries, forestry, culture, tourism, mining, environment, transport and infrastructure) be made, instead of solely targeting those who are traditionally responsible for decision-making. It is also suggested that participatory measures be undertaken in which vulnerable groups are treated as key stakeholders, and consulted and included in the planning and implementation of development programmes (SPC et al., 2016).

PROFAV, meanwhile, works to promote the consumption of fruit and vegetables and to increase the production capacity of local smallholder farmers. Research shows that further collaboration between horticulture, nutrition and stakeholders from the health and education sectors is needed; at the same time, stronger interface between the public and private sectors is also needed if the production and consumption of fruit and vegetables is to be improved (FAO, 2015).

Kiribati

Kiribati exhibits many of the nutrition-related issues identified in relation to the Pacific region. While 14.9 per cent of children under 5 are underweight (CIA, 2016), 38 per cent of males and 54 per cent of females above 20 years of age were classified as obese in 2008 (Kiribati MHMS, 2015). Many children suffer from vitamin A deficiencies, resulting in increased vulnerability to health problems and infections (Englberger, 2011). Additionally, there are high levels of nutrition-related morbidity, such as obesity, diabetes and hypertension among adults (CIA, 2016).

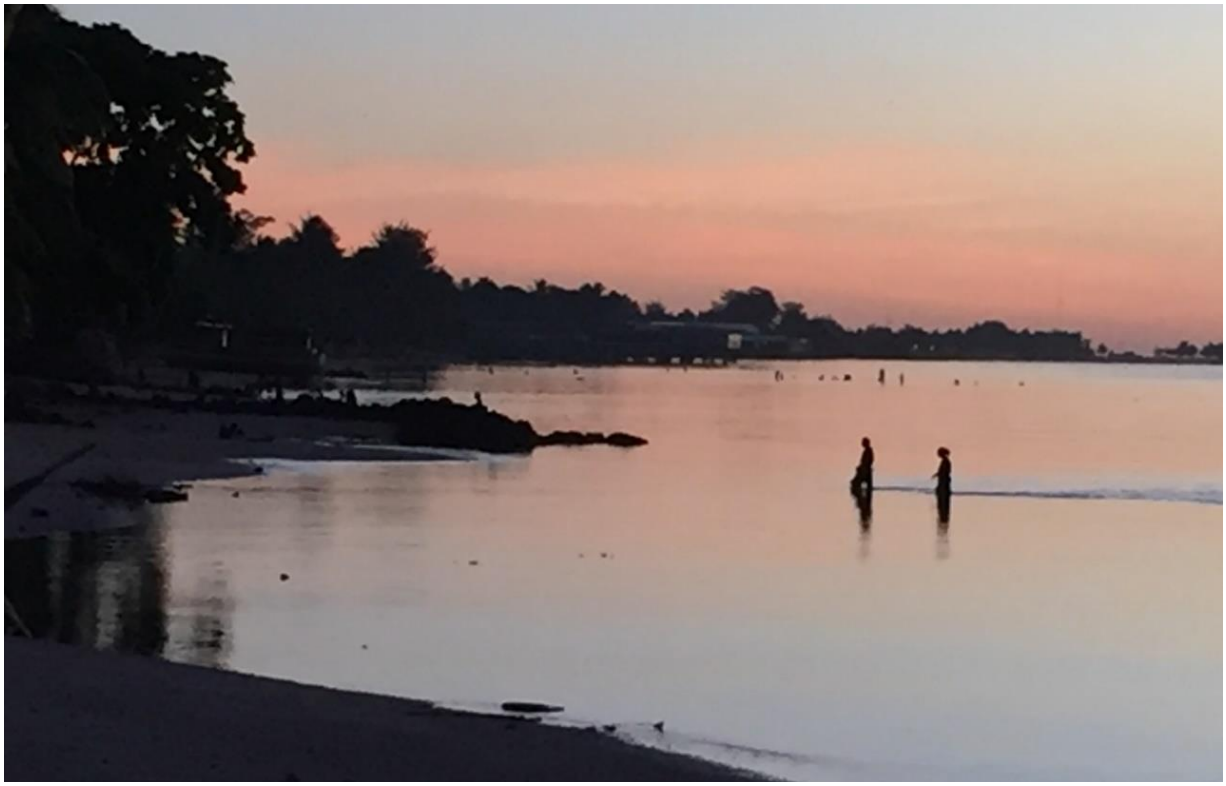
Whilst locally-produced foods (fresh fish, root crops, local fruit and vegetables) are proven to

prevent the onset of NCDs (Campbell, 2015), globalisation and urbanisation have contributed to a change in diet leading to the increased importation and consumption of processed foods with elevated levels of sugar and fatty meats (Susumu, 2014). Kiribati's geological and biological constitution, restricted landmass, low rainfall and poor soil fertility mean that vegetation does not grow easily (Thomas, 2002). This, in combination with effects of climate change, such as wind damage and soil moisture stress, makes it difficult to maintain effective agricultural production (Campbell, 2015).

South Tarawa is considered poor, with water-borne diseases such as diarrhoea and dysentery are frequently reported (ADB, 2011).

Kiribati Nutrition Initiatives

Identified as one of the poorest nations in the Pacific, with 66 per cent of the population classified as poor or at risk of falling into poverty (AHC, 2014), Kiribati is reliant on foreign aid. As such, organisations such as UNICEF have played a key role in helping improve maternal and child health and survival by increasing access to healthcare and information on nutrition (UNICEF, 2013).



A couple return from harvesting dinner from the lagoon at dusk.

South Tarawa

Due in part to domestic migration from Kiribati's outer islands, almost half of the population currently lives in South Tarawa. With a land size of just 15.76 km^2, this makes it one of the most populated locations in the Pacific region (ADB, 2011). Overcrowding of this extent has huge impacts on a city's social climate, environment and infrastructure (ADB, 2011; FAO, 2012). South Tarawa is characterised by high rates of youth unemployment (54 per cent), rising numbers of people living in poverty, (CIA, 2016; Susumu, 2014), poor waste management, insufficient water resources and ineffective sanitation. The overall health of children in

Additionally, the Taiwan Technical Mission (TTM, 2015) currently runs a nutrition improvement project where schools in selected areas of South Tarawa are provided nutritious vegetables cultivated locally. Cooking classes are also made commonly available by various actors, such as the National Nutrition Centre (Kiribati MHMS, 2015).

Results from Focus-Group Discussion and in-depth interviews

Mothers in Kiribati face the challenges of limited resources, a lack of land to cultivate crops on, and an increased dependency on the existent food market and its driving currency. For years, this led many to feel that they had no choice but to eat what was available and affordable. In combination with cultural knowledge and information derived from peers, women have more recently been exposed to new ways of cooking and gardening to improve nutrition.

Together, the FGDs and in-depth interviews reveal that mothers in South Tarawa are experiencing a food culture in transition. This has had a trickle-down effect on perceptions of healthy eating and on strategies behind food choices. An element of this transition is demonstrated in how women reflect upon their roles as mothers. They express the desire to raise healthy children, while wanting to maintain their own wellbeing through healthy eating and peaceful relationships in the households. The following four sections provide a summary of statements gathered from the FGDs and in-depth interviews.

Figure 1. Supermarket shelves in South Tarawa, (Anna Fallgren, 2017)

Diminishing cultivation

Overcrowding, a lack of land and a burgeoning reliance on food imports were issues raised during the FGDs. The combination of living on a limited landmass with a lack of cultivatable land while facing structural inhibitors, such as not having enough money, was identified to influence food choices. The mothers interviewed stated that they had no chance to decide themselves what to eat because the decision had already been made by food retailers. They had therefore started to treat imported food as routine and 'traditional'.

"Because we heavily rely on the imported food, that's why we don't decide. It's like it's becoming traditional. Rice and tinned food should be available but if there's a shortage we don't have any food on our plates."

FGD 1

The mothers stated that they typically ate *"fish and rice all day long"* [FGD 1] without variety. For mothers without gardens to grow fresh food, there was no difference between locally-produced and imported food in terms of access, as both required money. Within the FGDs,

store-purchased rice was identified as the cheapest option available.

The diminishing land space evoked great frustration towards those relocating to South Tarawa. The mothers indicated that all available space was being designated for housing rather than food cultivation. The issues of toxic fish and contaminated water were also raised; whilst fishing was discussed with regards to methods and locations, it was concluded amongst the group that people were left to eat what they could get.

"For us it doesn't matter what kind of fish it is, we just eat it. We can't predict whether it is poisonous or not, the best for us is to eat whatever we have."

FGD 3

Eating what is available but hoping for more

The challenge of acquiring food led those interviewed toward an unvaried diet. The mothers expressed enjoyment in eating what was familiar and routine to them, and viewed food as being nothing more than simply food. Even though locally-produced food was identified as 'their own', or 'i-Kiribati' food, they had been raised with and become accustomed to eating imported rice, resulting in a strong preference for it over local food.

If required to eat locally-produced food, they wanted to be able to go back to eating what they had been used to afterwards.

"If we had breadfruit for one day, two days and then you would like to return back to rice … We feel that we're not satisfied with breadfruit alone. If you keep having only breadfruit it feels like you want to cry [laughter]*."*

FGD 5

Most of the mothers described eating whenever they were hungry. For them, there was no routine of sitting down and eating together for the social aspect involved. Lunchtime was usually described in vague terms, such as *"2pm onwards"* [Interview 2], or that it *"Depends on*

Figure 2 Store-front displaying an array of luncheon meats and other canned food (ChildFund New Zealand, 2016)

whenever they [the adults] *want to eat"* [FGD 5]. There were, however, some variations as to how people ate. For a few informants who lived in nuclear households, the time allocated for food was when the whole family could sit down together and eat, which gave opportunities to interact and share stories.

Food aspirations were spoken with reference to the demonstration of wealth, a varied diet, and the desire to be admired. Most mothers identified chicken as their ideal food. It was described as delicious, expensive and something they would rarely eat. A group of mothers from a wealthier community identified various kinds of local seafood as their preferred choice, listing lobster and red snapper as examples.

"Because it's not that very often that you can eat that type of fish. It's more common to eat for those who are fishermen".

FGD 5

On 'special days', the mothers put extra effort into food preparation. These were listed as days of *butakis* (feasts), cultural days in school, Sundays or birthdays. Special food items could either be imported or locally-produced, but were dishes not routinely prepared. *Butakis* required the mothers interviewed to demonstrate wealth, most commonly through the presentation of chicken or pork dishes. Large amounts of money would be accumulated to ensure that the food was available and was well-prepared and well-presented.

"It's embarrassing if not well presented. […] The food should be extra special." FGD 1

The mothers confessed that even though they admired healthy people and had tried to change their behaviour according to ideals, it was too difficult to change. It required reducing their food consumption, engaging in physical activity, and eating 'balanced food', which was understood by some to mean a diet inclusive of fruit and vegetables. One mother stated that she got hungry and angry from simply trying and just wanted to sleep. She did not have the energy or motivation to do everything that was required to be on a such a diet.

Understandings of healthy eating

Both insecurity and confidence were expressed among the mothers when asked about healthy eating. When they were questioned as to what a healthy (*marurung*) person would look like, they expressed diverse qualities. Amongst these qualities were 'strong', 'muscular', 'smart', 'active' and 'hard-working'. The mothers also expressed the term 'balanced food' differently amongst themselves. Some described the three food groups and advised that people should aim to eat 'body building', 'energising' and 'protective' food such as fish, breadfruit and fruit and vegetables. Others, however, focused on a single food group.

"I think for the balance diet refer to green leaves."

"Yeah green leaves."

FGD 3

Lifestyle or economic situation did not seem to affect their knowledge levels. Some mothers had attended nutrition classes organised by different actors such as organisations, churches and women's associations. They confessed that although they had gained new information on nutrition and had recreated the food items presented twice or so, they had stopped after a time. These items were identified to be either too expensive, or the mothers identified themselves as too lazy to prepare them. It was not always that the interventions were seen as useless - attendees often enjoyed the classes - it was more an issue of not being able to incorporate the teachings into their lifestyle easily.

"Like I need cabbages. Most of my ingredients are from the ice-box [freezer] *means cost me a lot to buy any of these."* FGD 2

Many of the struggles of incorporating new knowledge into their routine led to feeling insecure about food. In many cases, the instructions given were ad hoc and had not

been adapted to their specific situations. One mother identified that she was afraid she would do more harm than good to her child if she attempted to prepare the recipes as the intervention she attended had not targeted her child's age group. In addition, she had not been able to take the learning material home with her, and so continued to prepare the dishes she was accustomed to.

Figure 3 Roadside provisions store, (Anna Fallgren, 2017)

The mothers often relied on their own knowledge and listened to the elders in the community or to their own mothers for advice on how to select and prepare food. They shared many examples of food they saw as helpful toward keeping their children healthy. For example, some mothers said they had struggled with breastfeeding because they did not have any milk themselves or because the baby had refused breast milk. They had consulted their local health centre which expressed opposition towards using formula and, fearing their child's deprivation, had done what they thought was necessary.

"*I was advised not to give my baby foods, but our Kiribati habit is that if we think that the best for our baby, we'll just go for it."* FGD2

Culture and gender norms

Mothers' roles were described as central to society. The mother was expected to cook, take care of children and prepare for festivities, while also being in charge of the household. Children were seen as the centre of their attention and if there was healthy food available, it was stated, it should be given to them. Having healthy children made the mothers interviewed proud. The children performed better in school and the mothers enjoyed it when other people admired them. They would therefore use whatever healthy food they had for the children, if available.

Children often ate before the adults, a change from time past when men would eat first. The mothers reported that they listened to what the children wanted to eat and tried to please them, even if requests were made occasionally for unhealthy food. They mentioned that although they knew that their children's health was important, it was sometimes too hard to stand against their wishes.

"Yes. As the children leave us no chance but to give them [ice block] as they cry and cry, so yes, I just give them what they want."

FGD 2

Indeed, it was important to ensure that the children liked the food so that it would not be wasted. The mothers experienced a constant battle between acquiring affordable food items, making it healthy, and ensuring that it tasted good.

Some of the women interviewed balanced being 'a good mother' with a job and many explained that they occasionally joined in on activities for their own enjoyment, such as playing sports or bingo. This was not always

appreciated by family members and held the potential to lead to fights and arguments. Playing bingo, for instance, was a debated activity that was said to affect food because it consumed time and resulted occasionally in changes to routine. The mothers were accused of preparing food hurriedly, impacting the healthiness of the dish. In some cases, women reported arriving home to nothing but bread for dinner, having had all food consumed in their absence.

"[Activities] *can affect our cooking as we do not cook to make it more tasty but to its fast way to be cooked and that's not good, worse."*

FGD 4

Some mothers were outspokenly against playing bingo precisely for these reasons. They said it led to arguments in the family and unnecessary stress around money. Ultimately, the majority of the mothers thought that a mother's job was to take care of her children and find strategies to maintain their health, regardless of the temptation of other indulgences.

"The mother plays a very big role in this and she needs to be very active. […] You should cook them [the children] *their own lunch instead of giving them money* [to buy things at school]*. Give it to them to eat. "*

FGD 5

Recommendations

The results of this study show that there are many aspects of food and healthy eating which must be discussed with regards to a food culture in transition. Not only did the women interviewed express difficulties overcoming challenges around environmental conditions, overcrowding, diminishing cultivation and contaminated water, but they grappled with cultural expectations placed on them as mothers. Based on the results, the following recommendations have been put forward to improve diets, both through individual behaviour change and structural change.

Improve nutritional literacy

According to the results, nutritional literacy appears to be unevenly distributed among mothers and needs to be improved. Healthy eating – referred to as eating balanced food – was understood to mean green leaves, or fruit and vegetables. Their statements were not consistent with the nutritional guidelines issued by the National Nutrition Centre in Kiribati, where balanced food is defined as eating a varied diet consisting of energy foods, protective foods and bodybuilding foods (National Nutrition Centre, 2015, cited in Reiher, 2016). The risk is that people do not change other parts of their diets that may be highly imbalanced. Even though mothers evidently need to add fruit and vegetables to their diets, they also need to become aware of the holistic aspects of a balanced food diet, and eat a variety of food from the three food groups (Ibid). Further research on nutritional literacy will be essential to guiding interventions in spreading information in an accurate manner, especially with regards to access to varied food.

Monitor outcomes in more detail

Interventions need to ensure that they include coherent follow-up systems of activities so that nutritional literacy can be monitored at the household-level. Both quantitative and qualitative methods should be used to collect data on outcomes, behavioural change and attitudes towards the interventions. A lack of solid knowledge of nutrition can also be discussed with regards to mothers' insecurity and fear of making mistakes as a result of ineffective nutrition interventions. Community interventions to improve cooking skills often fail to incorporate evaluation plans (Garcia et al. 2016). This appears to be the case in South Tarawa, as there was limited information to be found on evaluations of nutrition interventions. Since evidence suggests that cooking classes can improve confidence and eating behaviour (Ibid), having reliable data on interventions that adopt coherent monitoring and evaluation to keep track of the change and feedback from

beneficiaries could help to overcome these issues.

Engage mothers in planning and implementation

The mothers interviewed stated that they would do what they perceive to be the best for their children and that they learned from peers. This is a crucial factor to bear in mind when tailoring interventions. The mothers should be assisted to realise that they are in fact agents of change, so that they become aware of how their behaviour affects their children's health. In this way, they could self-re-evaluate their current health behaviour and the consequences it has on health. Maintaining supportive relationships may help mothers prepare to take action and to feel confident that they are the owners of change (DiCelemente et al., 2013). Using community workers who can provide counselling and support to mothers who struggle and help them with practical solutions is a good resource for such achievements (UNICEF, 2012).

Listen to mothers' food preferences

Regional initiatives that promote the traditional way of cooking have proven successful in Pacific countries (Go Local Initiative, Englberger, 2011). The results, however, suggest that mothers prefer to eat what they are used to (fish and rice), but idealise greater variety and foods they have not tried before. Based on this finding, it seems beneficial to find new ways of adding nutritious local food to peoples' current diets rather than removing food that they want to eat, or suggest that they move back to traditional ways of cooking if that is not something they want to do. It could also be beneficial to find new ways to cook with nutritious food according to their taste preferences. In this way, more variety could be ensured, which was also important to the mothers.

Figure 4. Butakis require mothers to demonstrate wealth, most commonly through the presentation of chicken or pork dishes. (Shona Jennings, 2017)

Plan community gardens in a participatory manner

To help improve diets of the people in Kiribati, the mothers in this study suggested that interventions be aimed at increasing the use of land to grow fruit and vegetable for common benefit and access, for example through community gardens. Here, it is important that the community gardens are not available only for a limited amount of time or restricted to some parts of the community. Since the purpose of home-gardening seems mainly to serve as an important source of income (East and Dawes, 2009), this may lead to selling

nutritious food in order to purchase less nutritious food. It would therefore seem too simplistic to assume that an increase in locally-sourced fruit and vegetables would increase consumption if choices of food are dependent on money, or if people feel that they do not have a food choice at all.

Exploring opportunities to plan community gardens adapted to the crowded settings of South Tarawa should be prioritised, focusing specifically on involving the community to take ownership and increasing literacy to enhance confidence and understandings of cultivation and healthy eating. One alternative posited by the FAO is the Farmer Field School Model, which has been used in many low-and middle-income settings. These schools have mainly focused on empowering smallholders, their families and communities in rural settings (FAO, 2016), but the concept of taking ownership and making their own contributions to improving access to fruit and vegetables could be a way of engaging communities and increasing participation in the improvements of diets.

Improve food policies

The results in this study suggest that food choices are influenced by access to resources, knowledge, preferences and expectations. These influences determine the very extent to which mothers perceive themselves as having any choice of food at all. Some mothers said that the choice was already made for them because they were dependent on money and land accessibility, which suggests that poverty and marginalisation in their society are highly influential towards their diets. Structural factors like these point to the urgent need for governmental action to promote local food trade (Rimon, 2011), improve trade policies, and to join private and public efforts to improve the health of the people of South Tarawa (FAO, 2015). This is fundamental as it helps the individual process of health behaviour change, by making varied food available for people to choose.

Use children as agents of change

There is a need to identify opportunities to use children as agents of change. Mothers place high value in meeting the preferences of other family members than themselves, such as their children. Although mothers sometimes let their children eat what they liked because they do not have the will to deal with upset children, valuing children's opinions could in fact be a very useful tool if they are equipped with nutritional literacy. Save the Children Fiji has conducted successful interventions where children are encouraged to speak their views on healthy food preferences in their families (Save the Children Fiji, 2015). Other organisations, including ChildFund and UNICEF, support the concept of including children's views in policy-making. This could fit well into the current Kiribati context, as new school syllabi explicitly include nutrition in their Healthy Living and Health and Physical Education classes (Kiribati MoE, 2015; Kiribati MoE, 2016).

Conclusions

In light of the results of this report, the threat of the double burden of malnutrition and non-communicable diseases caused by poor nutrition is something that must be tackled internally and externally. Sustainable change cannot be made unless it is made in a participatory manner and with support from all levels of society. The results from qualitative data-collection show that mothers cannot make effective food choices if they solely receive more money or are solely provided with more information. They need to be given the capacity to make informed choices and provided with the resources to do so. It is also important to note that everyone should have the right to treat him or herself to a tasty meal, and there should be options to have a variety of both healthy and tasty food on a regular basis. In order to achieve sustainable change more agents in the society, children included, should be involved as agents of change.

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