Impact of the COVID-19 pandemic on diets, nutrition services and nutrition practices in Botswana

September 2022
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Key findings

Results of a remote survey in 2021 revealed that the COVID-19 pandemic led to changes in the diets of infants, children, adolescents, and pregnant and lactating women in Botswana.

10% of caregivers reported that their child aged under two years was breastfed less frequently due to the COVID-19 pandemic.

69% of caregivers reported that their child consumed less variety of foods due to the COVID-19 pandemic.

Some positive changes in diets were reported due to the COVID-19 pandemic, including reduced consumption of unhealthy foods and drinks and increased consumption of vegetables.

Many respondents reported that reduced household income, and increased food prices, led to changes in the types of foods purchased during the COVID-19 pandemic.

57% of caregivers reported that they ate less during the pandemic to enable their children to eat.

A high level of moderate or severe food insecurity was reported in this sample during the COVID-19 pandemic according to the Food Insecurity Experience Scale (58% of caregivers of children < 2 years, 56% of caregivers of children aged 2-18 years, and 50% of PLW).

Most health workers reported that nutrition services continued uninterrupted during the COVID-19 pandemic, except maternal micronutrient supplementation which 30% of health workers reported was temporarily discontinued.

A high proportion of children (50%) received free school meals during the COVID-19 pandemic.
Background

The first case of COVID-19 was detected in Botswana on 30th March 2020, after which it spread to all regions of the country. By July 2022, 2,752 confirmed COVID-19 deaths had been reported.\(^1\) According to the COVID-19 INFORM risk scale, Botswana is classified as a high COVID-19 risk country (score 5.3\(^2\)). While the direct impact of COVID-19 on child nutrition status is not yet fully understood, there is understanding of the secondary impacts of the COVID-19 pandemic globally including reduced household incomes, disruption to food systems and reduced uptake of nutrition and health services.

Botswana was one of six countries included in research undertaken by UNICEF’s Eastern and Southern Africa Regional Office (ESARO) in 2021 to understand the impacts of the COVID-19 pandemic on diets, nutrition services and nutrition practices in the region. The research was undertaken in two parts: the first phase involved a desk review of all available literature across the ESAR, with a detailed report produced.\(^3\) The second phase involved primary data collection in six countries in the region using telephone and internet-based surveys, the overall objective of which was to identify changes since the COVID-19 pandemic began in child, adolescent and women’s nutrition practices, food security and nutrition services. Results of the second phase for Botswana are presented here.

Methodology

Primary data were collected in Botswana in October and November 2021. Target groups included caregivers of children aged 0-23 months and 2 to 18 years; adolescents aged 10 to 18 years; pregnant and lactating women (PLW) and women who recently gave birth;\(^4\) and health workers. Surveys were designed and administered using Computer Assisted Telephone Interviewing (CATI) - a standard form of surveying participants during phone calls with answers recorded on a computer - and U-Report (using the RapidPro platform) – an internet-based platform designed to support online surveys. Surveys and polls were tailored to each respondent group, with standardized indicator modules integrated where possible. Respondents were reached through lists provided by UNICEF that matched the target group criteria.

Findings

Sample characteristics

Sample characteristics from the CATI surveys and U-Report surveys are described in Table 1. The sample size was calculated based on estimations of prevalence of each key nutritional indicator per respondent group. In total, 2,000 respondents were required per country. For indicators with unknown prevalence, the calculation was based on a prevalence of 50% that gives the biggest sample size required.

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1. https://covid19.who.int/region/afro/country/bw
2. The total score is 10, of which a score of 6.5 or more is considered very high, 5 or more high, 3.5 or higher medium, 2 or higher low, and below that very low.
4. Women who gave birth within 20 months prior to the survey.
The largest proportion of respondents via CATI were caregivers of children under 2 years (52%) and adolescents (88%) via U-Report. Most CATI respondents were female (88%) while most U-report respondents were male (56%).

Table 1: Characteristics of CATI and U-Report respondents from Botswana

<table>
<thead>
<tr>
<th>Survey type</th>
<th>Sample</th>
<th>Gender % (n)</th>
<th>Groups % (n)</th>
<th>Total planned sample size</th>
<th>Total actual sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total actual sample size</td>
<td>Male</td>
<td>Female</td>
<td>Unknown</td>
<td>Caregivers of children aged 0-2</td>
</tr>
<tr>
<td>CATI</td>
<td>2,218</td>
<td>2,102</td>
<td>12%</td>
<td>88%</td>
<td>N/A</td>
</tr>
<tr>
<td>U-REPORT</td>
<td>2,218</td>
<td>9,412</td>
<td>33%</td>
<td>63%</td>
<td>3%</td>
</tr>
</tbody>
</table>

*Adolescents aged 15-18 years **Adolescents aged 10-18 years.

Nutrition practices and behaviour

Children under two years: Ten percent of caregivers reported via the CATI survey that their child under two years was breastfed less frequently due to COVID-19. Thirty five percent of caregivers reported that their child aged 6-23 months reduced consumption of one or more food groups due to COVID-19 (mean 1.6 food groups out of 11). The vast majority of caregivers reported that their child’s consumption of different food groups remained unchanged. Healthy food groups most frequently reported to be consumed less in Botswana by infants aged 6-23 months were commercially fortified baby foods (23%), dairy products (20%), cereals, roots and tubers (17%), and meat and poultry (17%). Many caregivers reported that unhealthy foods were also consumed less (sugary foods 17% and savoury and fried snacks 15%). The foods most frequently reported to be consumed more by children aged 6-23 months due to COVID-19 were cereals, roots and tubers (23%), dairy products (21%), and vitamin A rich fruit and vegetables (17%).
69% of caregivers reported that their child consumed less variety of foods due to the COVID-19 pandemic.
Many respondents reported that reduced household income, and increased food prices, led to changes in the types of foods purchased during the COVID-19 pandemic.
**Children and adolescents aged 2-18 years:** A much higher level of change was reported in diets in this age group. Sixty-nine percent of caregivers of children aged 2-18 years and adolescents aged 15-18 years reported reduced consumption of one or more food groups due to COVID-19 (mean 4.8 out of 13 food groups). Healthy food groups most frequently reported to be consumed less were oils and fats (44%); meat and poultry (42%); rice, bread, cereals, and tubers (41%) and dairy products (40%). Many respondents also reported reduced consumption of unhealthy food groups (savory and friend snacks 39% and sugary foods 37%) as well as sugary drinks (36%). The foods most frequently reported to be consumed more by children aged 2-18 years due to COVID-19 were dark green leafy vegetables (16%), other vegetables (12%) and vitamin A rich fruits and vegetables (12%).

**Figure 2:** Proportion of caregivers of children 2-18 years (and adolescents 15-18 years) in Botswana reporting changes in consumption by food group (CATI U19 survey)

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Increased COVID-19</th>
<th>Decreased COVID-19</th>
<th>Changed other</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dark green leafy vegetables</td>
<td>16%</td>
<td>27%</td>
<td>4%</td>
<td>53%</td>
</tr>
<tr>
<td>Other vegetables</td>
<td>12%</td>
<td>34%</td>
<td>1%</td>
<td>50%</td>
</tr>
<tr>
<td>Vitamin A rich fruits and vegetables</td>
<td>12%</td>
<td>35%</td>
<td>6%</td>
<td>47%</td>
</tr>
<tr>
<td>Other fruits</td>
<td>11%</td>
<td>39%</td>
<td>1%</td>
<td>45%</td>
</tr>
<tr>
<td>Beans and pulses</td>
<td>10%</td>
<td>32%</td>
<td>7%</td>
<td>51%</td>
</tr>
<tr>
<td>Rice, bread, cereals, tubers</td>
<td>8%</td>
<td>41%</td>
<td>7%</td>
<td>44%</td>
</tr>
<tr>
<td>Dairy products</td>
<td>8%</td>
<td>40%</td>
<td>3%</td>
<td>46%</td>
</tr>
<tr>
<td>Eggs</td>
<td>8%</td>
<td>39%</td>
<td>4%</td>
<td>50%</td>
</tr>
<tr>
<td>Meat and poultry</td>
<td>7%</td>
<td>42%</td>
<td>6%</td>
<td>45%</td>
</tr>
<tr>
<td>Nuts and seeds</td>
<td>6%</td>
<td>35%</td>
<td>5%</td>
<td>54%</td>
</tr>
<tr>
<td>Oils and fats</td>
<td>6%</td>
<td>44%</td>
<td>3%</td>
<td>44%</td>
</tr>
<tr>
<td>Organ meat</td>
<td>6%</td>
<td>38%</td>
<td>4%</td>
<td>52%</td>
</tr>
<tr>
<td>Fish and seafood</td>
<td>4%</td>
<td>37%</td>
<td>5%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Of the caregivers of children who responded via U-Report, 69% reported that their child consumed a less variety of food, 33% of respondents reported that their child consumed less meals, 46% reported that their child consumed smaller portions, 31% reported that their child skipped meals, and 23% reported that their child snacked less because of COVID-19. Food groups most frequently reported to be consumed less due to COVID-19 by adolescents self-reporting via U-Report were meat (36%), dairy products (34%) and staple foods (30%) and the food group most likely to be consumed more was vegetables (40%).

**Pregnant and lactating women and women who recently gave birth:** Sixty-five percent of PLW and women who recently gave birth reported via CATI reduced consumption of one or more food groups due to COVID-19 (mean 3.7 food groups out of 13). Healthy food groups most frequently reported to be consumed less by PLW and recent mothers were fish and seafood (34%); eggs (34%); oils and fats (31%); organ meat (31%); and meat and poultry (31%). Many respondents also reported reduced consumption of unhealthy food groups (sugary foods 40% and savoury and fried snacks 33%) as well as sugary drinks (30%). Foods most frequently reported to be consumed more were dark green leafy vegetables (28%), vitamin A rich fruits and vegetables (25%), and other fruits (24%).
**Figure 3:** Proportion of pregnant and lactating women in Botswana reporting changes in consumption by food group (CATI MQ survey)

### Food insecurity

**Food access:** The most frequently reported reason for reduced consumption of foods by PLW and mothers who recently gave birth was diminished purchasing power. Substituting expensive items (such as meat) for cheaper items was commonly reported. Caregivers reported via U-Report that the most common reason for changes in food consumption patterns during COVID-19 were financial, either due to the family having no money (55%) or the high cost of food (33%). Fifty seven percent of caregivers reported that they ate less during the pandemic to enable their children to eat. Sixty percent of PLWs reported that their household income had decreased since before the pandemic.

**Food Insecurity Experience Scale (FIES):** According to the Food Insecurity Experience Scale (FIES), severe household food insecurity was experienced by 28% of caregivers of children under two years, 25% of caregivers of children aged 2-18 years, and 20% of PLW and mothers who recently gave birth. Severe or moderate household food insecurity was experienced by 58% of caregivers of children under two years, 56% of caregivers of children aged 2-18 years, and 50% of PLW and mothers who recently gave birth. According to the child FIES, 12% of adolescents aged 15-18 years reported many food insecurity experiences and 29% very many food insecurity experiences.

**Social protection:** School meals are an important form of social protection that serve to protect child diets. In Botswana, 50% of adolescents aged 15-18 years reported receiving free school meals during the COVID-19 pandemic, while 23% attended school but did not receive free school meals and 26% did not attend school because schools were closed. Results indicate a high level of access to this form of social protection in Botswana.

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5 Using the four point scale of: no food insecurity experiences, some food insecurity experiences, many food insecurity experiences and very many food insecurity experiences.
Some positive changes in diets were reported due to the COVID-19 pandemic, including reduced consumption of unhealthy foods and drinks and increased consumption of vegetables.
Nutrition services

User experiences: Four percent of caregivers of children under two years of age and 11% of caregivers of children aged 2-18 years reported having a sick child during the past year and not seeking treatment. Of these, 25% did not seek treatment due to risk of COVID-19, 20% due to lack of money, 15% due to movement restrictions and 10% due to health facilities being unavailable or closed. Six percent of pregnant women did not attend an ANC visit due to risk of COVID-19, 12% of pregnant women reduced their intake of iron and folic acid supplementation due to lack of supplements and 19% of women who recently gave birth changed their birth plans due to COVID-19.

Health worker perceptions: Some health workers reported disruption to the delivery of maternal micronutrient supplementation (MMS) (32%), nutrition counselling (10%), iron and folic acid (IFA) supplementation for adolescent girls (9%), and vitamin A supplementation (9%) during the COVID-19 pandemic. There was very little reported disruption in the delivery of micronutrient powder (MNP) distribution, wasting screening and severe wasting treatment services.

Health workers reported that nutrition programmes were adapted to enable delivery in the COVID-19 context. Adaptations included the use of radio, TV and other media to deliver nutrition messages (50%), physical distancing (in delivery of nutrition counselling, vitamin A supplementation, wasting screening and wasting treatment) and use of alternative delivery platforms in the community (for nutrition counselling, vitamin A supplementation and wasting screening). Health workers reported that some services had not yet restarted including distribution of MNPs (30%), IFA supplementation (30%), Vitamin A supplementation (22%) and MMS (21%).

Discussion and conclusions

Results indicate that the COVID-19 pandemic had a negative impact on the diets of children, adolescents and women in Botswana in terms of reduced variety of foods consumed and reduced consumption of some healthy food groups. There is evidence that the pandemic led to reduced frequency of breastfeeding for some mothers. Results also suggest some positive impacts of the pandemic on diets in terms of reduced consumption of unhealthy drinks and snacks high in sugar, salt and fat, and increased consumption for some of micronutrient-rich vegetables. Dietary changes were reported most frequently in children over two years of age and pregnant and lactating women.

Dietary changes were driven by changes in foods purchased, with expensive items being swapped for cheaper items due to reduced household incomes and increased food prices. A high level of food insecurity was reported in this sample across all age groups, although a lower level than the average reported across the region. A high proportion of children were reported to have received free school meals during the pandemic in Botswana (50%) and most nutrition services continued uninterrupted except maternal micronutrient supplementation which appears to have been disrupted to some extent. This suggests that, while the COVID-19 did have a negative impact on incomes, household food security and diets, systems continued to function in Botswana and may have buffered negative impacts to some extent.

The negative impact of COVID-19 on diets is likely to affect progress against child nutrition targets in Botswana for years to come. Resources are urgently needed to re-expand and prioritise efforts to prevent stunting and micronutrient deficiencies by protecting breastfeeding, delivering micronutrient supplementation at scale, and increasing access to diverse, healthy diets for children, adolescents and pregnant and lactating women. Remote survey methods proved useful for collecting information on caregiver, adolescent and health worker perceptions and experiences in Botswana at a time when movement restrictions prevented household surveys. The utility of their wider use to complement household survey data should be explored.