MOMENTUM

Country and Global Leadership

Learning Brief

FORMATIVE ASSESSMENT ON INTRAPARTUM NUTRITION IN GHANA AND NEPAL

Practices, barriers, and opportunities to strengthen adherence to World Health Organization recommendation on intrapartum oral intake

BACKGROUND

Study Question

What is the current practice on intrapartum nutrition at public facilities in Ghana and Nepal, and how can adherence to the WHO recommendation on intrapartum nutrition be supported and/or strengthened?

Respectful maternal care (RMC) has been gaining momentum in recent years, as the concepts of dignity, privacy, confidentiality, freedom from harm and mistreatment, and informed choice and support during labor and childbirth become more globally accepted.[i] Intrapartum care, including nutrition, has become part of the broader RMC framework; in 2018, the World Health Organization (WHO) released the guidelines, *WHO Recommendations: Intrapartum care for a positive childbirth experience*.[ii] The guidelines recommend the oral intake of fluid and food during labor for low-risk women, which is based on limited global evidence showing that the restriction of oral fluid and food has no benefit on important clinical outcomes, including the use of labor augmentation, and that women's wishes to drink or eat during labor should be respected. Furthermore, hydration helps to shorten labor and make it more efficient, while energy (via food intake) provides much-needed fuel to muscles. While efforts to assess RMC in low- and middle-income countries (LMICs) is well documented,[iii,iv,v,vi] there is a paucity of evidence on the adherence to the WHO recommendation on intrapartum oral intake, particularly in LMIC settings. MOMENTUM Country and Global Leadership aimed to address this gap in the evidence through two formative assessments in public health facilities in Greater Accra, Ghana, and Nepal, and to understand the current practices, barriers, and opportunities to strengthen adherence to the WHO recommendation on intrapartum oral intake.

In recent years, both Ghana and Nepal have seen improvements in key maternal indicators. In Ghana, institutional deliveries improved from 57% in 2008[vii] to 86% in 2022.[viii] During the same period, the rate of live births delivered by a skilled provider increased from 59% to 88%.[ix] The capital region of Greater Accra, Ghana, has even higher rates: in 2017, 92% of women delivered in a health facility.[x] In Nepal, institutional deliveries increased from 35% in 2011[xi] to 79% in 2022,[xii] while the percent of live births delivered by a skilled provider increased from 43% to 80% in the same period. With these improvements, both settings presented opportunities to assess the current practices related to the WHO recommendation for intrapartum oral intake among low-risk women.

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METHODS

MOMENTUM sought to understand the current practice on intrapartum oral intake of food and fluid and adherence to the WHO recommendation at public facilities in Greater Accra, Ghana, and Nepal through two mixed-method, formative assessments. In both settings, the study design included: a desk review of national, provincial/district, and facility guidelines and protocols; key informant interviews with facility quality improvement (QI) staff and maternity care providers; a knowledge, attitudes, and practices (KAP) survey with maternity care providers; and participant surveys with inpatient postpartum women who had a natural delivery (i.e., vaginal delivery without use of pain relief medication) and their support members (i.e., relatives and/or friends). MOMENTUM hired third-party consultants in each country to collect data and, in collaboration with the study team, analyze findings.

In Ghana, the study applied a multi-stage sampling approach with probability and non-probability methods to select study sites and participants in Greater Accra. In the first stage, MOMENTUM and Ghana Health Service (GHS) purposively selected five public hospitals (four secondary and one tertiary) using inclusion criteria such as facility level, geography (e.g., urban/peri-urban), monthly client volume, and discharge practices. In the second stage, researchers applied purposive, systematic, and snowball sampling methods to select facility-level QI staff (n=11) and maternity providers (n=12), inpatient postpartum women (n=56), and their support members (n=44). Researchers collected all data in the hospitals, with interviews and surveys administered in English and Twi and translated and transcribed to English for analysis.

In Nepal, the study applied a similar multi-stage sampling approach with purposive and non-probability methods to select study sites and participants. In the first stage, MOMENTUM and Nepal's Ministry of Health Family Welfare Division (FWD) purposively selected one secondary hospital from each of the seven provinces and one tertiary hospital in Kathmandu. Researchers applied purposive, systematic, and snowball sampling methods to select facility-level QI staff (n=26) and maternity providers (n=26), inpatient postpartum women (n=118), and their support members (n=92). Researchers collected all data in the hospitals, with interviews and surveys administered in Nepali and translated and transcribed to English for analysis.

MOMENTUM obtained ethical approval from the Johns Hopkins University Institutional Review Board in the United States and locally through the GHS Ethics Review Committee and the Nepal Health Research Council and facility-level Institutional Review Committees, where appropriate. All study participants provided written, informed consent in English, Twi, or Nepali prior to the start of data collection. All personal identifiers were replaced with codes during the analysis process to maintain privacy and confidentiality.

There were several limitations to both studies. In both settings, purposive sampling of facilities and health workers, along with their relatively small sample sizes, prevents representation of findings within a larger population. As MOMENTUM cannot know if the surveyed women received care from the surveyed providers, it is impossible to directly compare provider-reported and women-reported results. Additionally, the local ministries of health in the two settings engaged differently with researchers, making study design specifics and results ownership different in each setting.

FINDINGS

GHANA

In Greater Accra, Ghana, study findings showed that maternity providers generally do not practice the WHO recommendation on intrapartum oral intake of fluid and food for low-risk women. They inconsistently counseled low-risk intrapartum women on oral intake, frequently limiting available options, and often did not ask women their preferences for drinking or eating during labor.

A review of national and facility-level policies, guidelines, and protocols showed no guidance for the oral intake of fluid and food during the intrapartum period. While some resources included guidance on monitoring fluid intake as part of clinical management, none of the documents reviewed included the WHO recommendation on oral fluid intake as a matter of making the woman's experience more comfortable, and none discussed oral food intake at all. Interviews with QI staff and maternity providers confirmed this absence, with none of the 23 health workers mentioning an awareness of the WHO recommendation or its presence in guidelines or job aids at their facilities.

Maternity providers demonstrated mixed knowledge about the WHO recommendation and some of the clinical evidence supporting it. More providers correctly identified that the WHO recommends oral fluid intake for low-risk women (8 of 12) than food intake (4 of 12). They expressed confusion about whether restricting oral intake has any clinical benefit, with 7 of 12 (for fluid) and 5 of 12 (for food) correctly identifying it does not. While most providers correctly identified that restricting fluid (10 of 12) or food (9 of 12) does not help to prevent the need for Cesarean section, many nonetheless expressed during interviews concerns about the risks of aspiration or delaying treatment if a complication develops and the woman requires surgery. In general, most maternity providers voiced an interest in having guidance on the WHO recommendation so they could provide better quality care, and they generally understood the benefits of hydration and food for strength in preparation for the active stage of labor.

From the KAP surveys, most providers reported that they "almost always" or "often" counsel low-risk, intrapartum women on drinking fluids (11 of 12), while many reported similarly about counseling on eating foods (8 of 12). However, interviews unveiled more nuance to these practices, with many providers expressing bias towards water and other clear fluids and lighter foods, despite the WHO recommendation placing no restrictions or preferences for specific foods and drinks. In these instances, providers pointed to the dynamic and often unpredictable conditions of labor and advocated for the restriction of heavy foods out of an abundance of caution.

Providers reported mixed practices pertaining to letting women freely drink any fluid or eating any food during her labor, if she prefers, with half (6 of 12) stating they "almost always" or "often" do for drinking any fluid, and slightly more than half (7 of 12) stating so for eating any food. Yet when asked who makes any final decision about what or whether a woman drinks or eats during her labor, many providers stated they, as medical professionals, make it rather than the woman. This suggests interviewed providers view this decision as a clinical one, and not one about the woman's personal choice.

TABLE 1: COUNSELING STATUS EFFECT ON ORAL INTAKE PRACTICE AND INQUIRY TO WOMEN'S PREFERENCE (N=56)

Indicator/Measure	Freq.	Prop.	Diff.	Significance Level
Woman counseled on fluid intake and drank	27/30	90%	36%	P=0.0026
Woman not counseled on fluid intake and drank	14/26	54%		
Woman counseled on food intake and ate	13/24	54%	35%	P=0.0067
Woman not counseled on food intake and ate	6/32	19%		
Woman counseled on fluid intake and asked her preference for drinking	23/30	77%	77%	P=0.0001
Woman not counseled on fluid intake but asked her preference for drinking	0/26	0%		
Woman counseled on food intake and asked her preference for eating	15/24	63%	44%	P=0.0009
Woman not counseled on food intake but asked her preference for eating	6/32	19%		

Inpatient postpartum women shared their perspectives, too. Among 56 surveyed women, 30 and 24 received counseling on oral fluid and food intake, respectively, and 23 and 21 were asked their preference for drinking or eating respectively. Ultimately, 41 women drank and 19 women ate during their labor. As Table 1 shows, this study found two sets of statistically-significant, association relationships about provider counseling on intrapartum oral intake: 1) that it increased the likelihood that the laboring woman would drink or eat (*p*-value 0.0026 and 0.0067, respectively), and 2) that it increased the likelihood that the provider would also ask the woman her preference for drinking or eating during labor (*p*-value 0.0001 and 0.0009, respectively).

Women reported that when their maternity provider counseled them on oral fluid and food intake options, they often gave preference to specific types, while omitting or dissuading against others. Of the women who received counseling on fluid intake, most reported water (25 of 30) as permissible, followed by tea (15 of 30), and sugary fluids like juice or soda (13 of 30). Very few (3 of 30) reported they were told any or all fluids are permissible—guidance consistent with the WHO recommendation. Interviews with providers reinforced this: several midwives mentioned they prefer their clients to drink clear fluids like water. With respect to counseling on food options, most women (17 of 24) were told fruits are permissible, followed by vegetables and porridge (15 of 24 each), and soup (13 of 24). Very few women (4 of 24) said they were told any or all foods are permissible—guidance consistent with the WHO recommendation. Providers confirmed this during interviews, with several claiming they dissuade women from consuming heavier foods and meals.

Maternity providers reported either "almost always" or "often" (11 of 12) counseling support members on options for bringing fluids to the laboring woman, while fewer (8 of 12) did so on options for bringing food. However, during their interviews, providers placed qualifiers on the types of fluids and foods support members could bring, and when the laboring woman could have them. Only half the providers (6 of 12) reported that support members could bring drinks or food at any time/day to the woman. Approximately two-thirds of support members brought drinks (28 of 44) and food (30 of 44), and nearly all reported the availability of drinks and food options in close proximity to the health facility.

NEPAL

In Nepal, study findings showed maternity providers generally do not practice the WHO recommendation on intrapartum oral intake of fluids and food for low-risk women. They inconsistently counseled low-risk intrapartum women on oral intake, doing so more for fluid than food, and often limited options for each. Providers rarely asked women their preference for drinking or eating during labor and articulated mixed practices on permitting a woman under their care to freely drink or eat during labor if she prefers.

The desk review found that, of the six national policy documents reviewed, only one makes any reference to intrapartum oral intake. This document, the *National Medical Standard for Maternal and Newborn Care*, released in 2020, provides the basis of operating procedures for maternal and newborn service delivery in Nepal and recommends that all laboring women be encouraged to eat and drink. However, these recommendations come from a clinical perspective (rather than one centering on respect for the woman's wishes), framing the guidance in terms of monitoring levels of lethargy during labor and supporting nutritious intake as part of managing complications in childbirth. Interviews with QI staff and maternity providers validated the absence of the WHO recommendation in key policy documents: none of the health workers stated an awareness of any specific guidance for oral intake of fluid and food during labor.

Maternity providers demonstrated mixed knowledge about concepts pertaining to the WHO recommendation and the clinical evidence supporting it, and there were notable differences between their knowledge on oral fluid and food intake. Two-thirds of the surveyed providers (18 of 26) correctly identified the WHO recommends oral fluid intake, while only half (13 of 26) knew the organization recommends oral food intake. Almost all providers (24 of 26) correctly identified that restricting oral fluid intake has no beneficial effects on clinical outcomes, and two-thirds (18 of 26) did so for oral food intake. Many providers (20 of 26) understood that restricting fluid intake during labor does not help to prevent the need for Cesarean section, but fewer (16 of 26) knew restricting food intake during labor also does not prevent the need for Cesarean section.

Maternity providers reported their practices on counseling low-risk women on their options for drinking or eating and to what extent they permit the woman to freely decide on drinking and eating. All 26 surveyed providers reported they "almost always" or "often" counsel women on oral fluid options, and most (21 of 26) reported the same for oral food options. However, fewer providers reported they "almost always" or "often" allow women to drink (17 of 26) or eat (14 of 26) freely.

Among the 118 surveyed inpatient postpartum women, 112 and 66 received counseling by their provider during labor on fluid and food intake, respectively, while only 33 and 18 reported being asked by their provider their preference for drink and food, respectively. Ultimately, 108 women drank and 72 ate during their labor. Results presented in Table 2 show the relationships between provider counseling on oral intake on one hand, and 1) the oral intake practices among intrapartum women, and 2) providers asking women their preferences for drinking and eating on the other. This analysis shows that, when women are counseled on fluid and food intake by their provider, they are statistically more likely to drink or eat during labor (*p*-values 0.0096 and 0.0001, respectively). However, with respect to the second relationship, the findings are mixed: results show a strong association between provider counseling on food intake and whether the provider asks her preference for eating (*p*-value 0.0005), but they do not show a statistically-significant association between provider counseling on fluid intake and whether the provider asks her preference for drinking (*p*-value 0.2018).

TABLE 2: COUNSELING STATUS EFFECT ON ORAL INTAKE PRACTICE AND INQUIRY TO WOMEN'S PREFERENCE (N=118)

Indicator/Measure	Freq.	Prop.	Diff.	Significance Level
Woman counseled on fluid intake and drank	104/112	93%	33%	P=0.0096
Woman not counseled on fluid intake and drank	3/5	60%		
Woman counseled on food intake and ate	55/66	83%	48%	P<0.0001
Woman not counseled on food intake and ate	17/52	35%		
Woman counseled on fluid intake and asked her preference for drinking	28/112	25%	25%	P=0.2018
Woman not counseled on fluid intake but asked her preference for drinking	0/5	0%		
Woman counseled on food intake and asked her preference for eating	14/66	21%	21%	P=0.0005
Woman not counseled on food intake but asked her preference for eating	0/52	0%		

According to surveyed women, maternity providers counseled them on permissible fluids and foods during their labor. Most women (89 of 112) reported water as permissible, followed by tea (59 of 112), and carom seed soup (55 of 112). Very few (20 of 112) reported their provider counseled them to drink any or all types of fluids, guidance consistent with the WHO recommendation. With respect to counseling on food options, nearly half of the women (32 of 66) reported their provider said rice or lentil dal were permissible. Yet fewer than a third of women (21 of 66) reported being counseled on any or all foods being permissible. Provider interviews reinforced these findings, with some mentioning warm fluids and soups as preferrable to cold beverages and solid foods during a woman's labor.

Maternity providers (24 of 26) reported they "almost always" or "often" counsel support members (e.g., family) to bring drink options for laboring women to make her experience more comfortable, and many (20 of 26) reported they "almost always" or "often" did so for food options. Most support members brought fluids (88 of 92) and food (74 of 92). However, providers explained they sometimes have to counsel support members to do so, and that some cultural beliefs about withholding certain types of fluids (e.g., juice or water) can act as barriers they have to address. Providers also reported that there is adequate storage space in the maternity ward for procured food and fluids, and that water is almost always accessible for clients at the facility. Additionally, there are often vendors or a cafeteria available to family members and clients.

CROSS-CUTTING RECOMMENDATIONS

Based on the findings from these two studies, MOMENTUM makes the following cross-cutting recommendations to GHS and FWD:

- Revise national standards such as the *Safe Motherhood Protocol* (Ghana) and the *National Medical Standards for Maternal and Newborn Care* (Nepal) to incorporate the WHO recommendation, and flow guidance down to facility level
- Facility-level QI teams should monitor how providers counsel laboring women on options for oral fluid and food intake
- Support provider counseling of family and friends of laboring women to promote their active engagement, including the provision of drink and food of the woman's choice

Findings from both study settings show that important national- and facility-level guidelines and protocols do not include guidance on the WHO recommendation for intrapartum oral intake among low-risk women. Maternity providers articulated limited knowledge of the WHO recommendation and related clinical evidence, which may contribute to observed confusion about risks such as aspiration. However, they and QI staff in both study settings expressed interest in having clear guidance on the WHO recommendation available to improve the quality of care provided. MOMENTUM recommends the GHS and FWD revise national standards such as the *Safe Motherhood Protocol* (Ghana) and the *National Medical Standards for Maternal and Newborn Care* (Nepal) to incorporate the WHO recommendation, and to flow this guidance down through provider training materials and job aids at the facility level, as appropriate. It is important that any revised guidance frame the recommendation as a component of promoting a positive childbirth experience, thereby emphasizing the respect for the woman's wishes and preventing possible misunderstandings about whether certain restrictions should be applied.

Results from both Ghana and Nepal demonstrate the power provider counseling has on key behaviors related to the WHO recommendation for intrapartum oral intake. There is a strong association between provider counseling and the woman's action: women were more likely to drink or eat if her provider counseled her on her options for oral intake during labor. When examining the relationship between provider counseling and asking the woman her preference for drinking or eating, the evidence from Ghana shows a strong association. The evidence from Nepal on this relationship was also strong for oral food intake, but less so for oral fluid intake. This discrepancy may be explained in part due to the very small number of women who were not counseled on fluid intake, which yielded a small sample for statistical testing between variables. Despite these differences, evidence shows the importance provider counseling plays in influencing both the provider's and laboring woman's behavior. MOMENTUM recommends that facility-level QI teams monitor and strengthen the quality of provider counseling on intrapartum oral intake as part of efforts to improve women-centered care. This should include monitoring not only whether a provider counsels a woman on her options but also consider any bias a provider might introduce in terms of limiting the types of fluids and foods women should consider.

Furthermore, counseling a woman on her options for drinking or eating during labor presents an opportunity to actively involve her in her care decisions. In both Ghana and Nepal, maternity providers often said they as clinicians hold the final decision on whether and what a low-risk woman drinks or eats during labor. However, the WHO recommendation elevates the respect for the woman's wishes as its justification because the global evidence does not show any benefit on clinical outcomes for withholding fluid or food. Accordingly, MOMENTUM recommends GHS and FWD to strengthen provider training and QI processes to include guidance for involving women in their care by encouraging them to make their own decisions about drinking or eating during their labor.

Lastly, both sets of findings provide a window into the important roles support members and the facility environment play in ensuring low-risk laboring women have access to drink and food options of their choice. Maternity providers should counsel support members on options for bringing laboring women drink and food, and critically consider removing any limitations placed thereon. Providers may have to counsel support members on different options for drinks and food to address potential cultural barriers, as was found in Nepal. Promoting a hospital and surrounding environment where drinks and food are readily available is important for strengthening access for women and their families. GHS and FWD may also want to develop job aids that strengthen providers' counseling of support members on their role in helping to make the laboring woman's experience as comfortable as possible, including the provision of drink and food options of her choice.

CONCLUSION

To our knowledge, this is one of the first systematic investigations on the state of adherence to the WHO recommendation for intrapartum oral intake in LMIC settings. The findings have implications both within Ghana and Nepal, and more broadly at the global level. In 2023, GHS initiated its review of the national *Safe Motherhood Protocol* for update, which will be the first step to introducing the WHO recommendation on intrapartum oral intake. MOMENTUM has supported this effort through its role on the National Safe Motherhood Steering Committee and its dissemination of this formative assessment. With an updated protocol, GHS will disseminate guidance to district and subdistrict leadership and health care workers. In Nepal, MOMENTUM presented to FWD the findings from this assessment and made recommendations to update the *National Guideline on Antenatal to Postnatal Continuum of Care* and the *Nepal Safe Motherhood and Newborn Health Roadmap* to incorporate the WHO recommendation on intrapartum oral intake, as appropriate. More research across other LMIC settings is needed to grow the evidence pool on the states of adherence to the WHO recommendation to inform revisions to national clinical standards and guidelines where necessary.

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Acknowledgements

MOMENTUM Country and Global Leadership would like to thank all study participants, staff at participating facilities, MOMENTUM Ghana and Nepal staff, and GHS and FWD officials who made these studies possible.

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This brief is made possible by the generous support of the American people through the U.S. Agency for International Development (USAID) under the terms of the Cooperative Agreement #7200AA20CA00002, led by Jhpiego and partners. The contents are the responsibility of MOMENTUM Country and Global Leadership and do not necessarily reflect the views of USAID or the United States Government.