

Analysis of Factors Associated with the Abandonment of Nutritional Recovery among Parents of Severely Malnourished Children Aged 6 to 59 Months in the Health District of Titao, Burkina Faso

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How to cite this paper: Gansore, A., Ngangue, P., Ly, B.A., N'Tcha, L.K., Mbang Massom, D., Kiki, G.M., Seu, J., Bationo, N., Nana, N.G. and Koueta, F. (2024) Analysis of Factors Associated with the Abandonment of Nutritional Recovery among Parents of Severely Malnourished Children aged 6 to 59 Months in the Health District of Titao, Burkina Faso. *Open Journal of Nursing*, 14, 477-490.

<https://doi.org/10.4236/ojn.2024.149033>

Received: April 9, 2024

Accepted: September 21, 2024

Published: September 24, 2024

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Abstract

Introduction: In Burkina Faso, undernutrition is a public health problem associated with more than 40% of infant and child mortality. Undernutrition management is complex, and there is often a risk of treatment abandonment. Studies on this topic have not explored the influence of environmental and therapeutic factors on parental compliance. This study proposes an analysis of factors influencing the abandonment of nutritional recovery by parents of malnourished children aged 6 to 59 months in ambulatory care. **Methods:** This was a descriptive and exploratory qualitative study. Data collection took place in February 2020. Data were collected from seventeen (17) participants via in-depth interviews (IDI) and direct observation. The IDIs were transcribed verbatim and thematically analyzed using Nvivo software. **Results:** The results revealed that factors related to the physical environment, such as geographical inaccessibility, pastoral occupation, displacement at auriferous sites, and insecurity, are important causes of nutritional recovery abandonment. They also prove that factors related to the social environment, such as lack of family and social support, feelings of shame, stigmatization, occupation of the mother, and social events, lead to this abandonment. In addition,

therapeutic factors such as interruptions of supplies of Ready to Use Therapeutic Food (RUTF), feeling of improvement or worsening of the state of health, recourse to traditional medicine, and ignorance of undernutrition are also associated with this issue. **Conclusion:** This study highlighted barriers to the abandonment of nutritional recovery among parents of severely malnourished children aged 6 to 59 months in the health district of Titao, Burkina Faso. It is more important to consider these different factors when evaluating care protocols so that policies to reduce child undernutrition can considerably impact the targets.

Keywords

Nutritional Recovery, Severe Acute Malnutrition, Environmental Factors, Therapeutic Factors, Abandonment, Burkina Faso

1. Introduction

Undernutrition is a global affliction impeding developmental progress, with ethically unacceptable ramifications [1] [2]. It affects diverse age cohorts universally, with a predominant impact observed among children under five (Fontaine *et al.*, 2023; Natisha, 2020). Over the past decade, global incidents of undernutrition have persisted, albeit gradually, exhibiting substantial regional disparities. Notably, Asia and Africa endure as the epicentres of childhood wasting, with sub-Saharan Africa housing a quarter of undernourished children under five [3] [4].

In Burkina Faso, situated in West Africa, undernutrition contributes nearly 40% of infant mortality [5]. Furthermore, the spectre of wasting persists, heightening susceptibility to morbidity and mortality among affected children, thereby thwarting their physical development [6]. The prevalence of global acute undernutrition declined from 10.4% in 2015 to 8.4% in 2018 [7] [8], although this trajectory varied regionally. In locales such as the North Region, the SMART survey unveiled an 11.2% prevalence of acute malnutrition [8] [9]. This region's burgeoning instances of nutritional monitoring abandonment exacerbate this disconcerting scenario [10]. Rates of nutritional monitoring abandonment in the Titao health district were recorded at 18.2%, 8% at the regional level, and 8.4% nationally [11]. In response to these findings and to redress this predicament, Burkina Faso has, for nearly a decade, accorded primacy to nutrition within its public health agenda. This has facilitated the revision and endorsement of a novel national protocol for managing severe acute undernutrition through outpatient care at the community level [12]. Despite concerted endeavors to mitigate this issue, particularly concerning abandonment cases, the prevailing trend in the nutritional status of children aged 6 to 59 months remains disquieting. This study endeavors to scrutinize the factors influencing parental discontinuation of nutritional rehabilitation for malnourished children aged 6 to 59 months receiving outpatient care in the Titao health district.

2. Methods

2.1. Study Design

This was a descriptive and exploratory qualitative study. Treatment abandonment is defined as the failure to start or complete medically indicated curative therapy, frequently causing treatment failure for pediatric patients in low- and middle-income countries (LMICs) with chronic conditions [13].

2.2. Participants and Recruitment

Utilizing purposive sampling techniques with maximum variation, we enrolled parents of severely malnourished children aged 6 to 59 months who had engaged with the malnutrition management program within the preceding three years, exhibited a lapse in treatment attendance not exceeding three consecutive visits, and consciously consented to engage in our research endeavor. The recruited parents provided informed consent and willingly partook in the study. A total of 17 mothers of malnourished children underwent interviews. Recruitment ceased upon reaching data saturation.

2.3. Data Collection

Data collection was conducted in February 2020, employing in-depth interviews and direct observation. An interview guide was meticulously crafted through comprehensive literature synthesis on undernutrition, facilitating structured exchanges with participants and ensuring focused discourse alignment with the study's theme (see **Appendix**). The semi-structured interview format afforded control over interactions, aiding in discourse maintenance. Concurrently, direct observation enabled the capture of nonverbal cues and session absences. These techniques synergistically facilitated data triangulation, enhancing the study's comprehensiveness and reliability.

2.4. Data Analysis

All recorded interviews were transcribed verbatim, ensuring fidelity to the original audio content. The transcriptions were subsequently cross-referenced with the audio recordings to validate transcription accuracy. A thorough examination of the transcribed data involved multiple readings, complemented by integration with notes extracted from the logbook and observation grid. A thematic analysis employing the Braun and Clarke methodology [14] was conducted utilizing Nvivo software (QSR International, version 12). Initially, verbatim transcripts were transferred to the computer software for coding purposes. In the subsequent phase, all verbatim transcripts were systematically coded based on emergent themes and categories derived from the dataset.

Further refinement occurred in step three, whereby codes were aggregated into subthemes to accentuate meaningful information units. Synthesis was then performed, delineating commonalities and distinctions across themes. Step four involved meticulous review and potential refinement of identified themes,

amalgamation or segregation of themes as warranted. Novel themes were introduced as dictated by analytical requisites. In step five, definitive naming and retention of each theme ensued, marking the conclusion of thematic identification. Lastly, step six encompassed the presentation of thematic analysis results, incorporating pertinent verbatim excerpts from the data corpus to elucidate findings and interpretations. The scientific rigor of the study adhered to established criteria encompassing credibility, reliability, confirmability, and transferability.

3. Results

3.1. Participants Sociodemographic Characteristics

We conducted seventeen in-depth interviews (IDIs) with mothers accompanying malnourished children for nutritional monitoring at the health center. All participants were female. They predominantly exhibit low levels of formal education, reside in expansive polygamous households, and at considerable distances from healthcare facilities catering to their children's needs. These women oversee extensive familial responsibilities wherein the nutritional status of their malnourished children constitutes but one facet of their concerns (see **Table 1**).

3.2. Factors Influencing the Abandonment of Nutritional Recovery

The main factors are individual (parents' knowledge of undernutrition), environmental (physical, social and political) and therapeutic.

3.2.1. Participants' Knowledge of Undernutrition

Most participants exhibited a significant deficit in knowledge regarding undernutrition. As a prevailing trend, undernutrition persists as largely unrecognized among the participants. Evidencing this, a mother articulated, "I do not know what malnutrition is [...]" (PED 6). Similarly, another participant contributed, "Undernutrition: it is when the child has diarrhea and is unable to eat" (PED 10). Parents frequently demonstrated a lack of awareness regarding malnutrition, viewing nutritional monitoring merely as a procedural obligation. A participant's statement exemplifies this sentiment: "I do not know what malnutrition is, but I took my child to the health center for follow-up [...]" (PED 13).

3.2.2. Physical Environment Factors

These factors included the influence of seasonality and parents' mobility and displacement.

Influence of Seasonality

The geographical accessibility of healthcare facilities remains a prominent concern within specific regions of Burkina Faso. This is notably evident in the Titao district, where participants consistently highlight challenges accessing local health centers, particularly during winter. During the rainy period, reaching the health facilities becomes arduous due to the absence of passable roads. Consequently, insights from interviews underscore the significant role of rainwater-induced barriers as a primary deterrent to engaging in nutritional recovery efforts. One

respondent elucidated, “During the winter season, when rainfall occurs, I cannot avail myself of medical services for my child. Moreover, in heavy precipitation, water barriers further obstruct my access to the healthcare center” (PED 2).

Mobility or displacement of parents

The proximity of health facilities to residential areas is a pivotal factor in ensuring the optimal provision of childcare services. Given the variable distances between participants’ homes and the designated health center responsible for nutritional surveillance, individuals exert maximum effort to reach the facility, relying solely on available means of transportation. The predominant mode of travel entails foot travel for most, notwithstanding the distance of 5 kilometres separating Golonga from the health center. One participant attests: “I routinely traverse the distance on foot, occasionally securing a bicycle through negotiation with others. The journey to the health center spans 5 kilometres. However, managing multiple concurrent responsibilities renders the endeavor challenging” (Participant ID: PED 2).

Similar sentiments are echoed by another caregiver hailing from Zomnanga, facing a 10-kilometre journey: “I typically undertake the journey accompanied by a female companion to mitigate the burden of solitary travel, traversing the distance solely by foot” (Participant ID: PED 7).

According to participant feedback, despite concerted efforts to avail themselves of health center services to sustain adequate nutritional support to their offspring, a notable apprehension regarding travel logistics arises, mainly attributable to geographical distance. This sentiment is exemplified by a participant domiciled in Zomnanga (10 km), who articulated, “I am employed within an exceedingly remote mining locale, thereby impeding my regular attendance for the procurement of children’s sustenance during the arid season” (PED 6). Similarly, another caregiver residing in Songtaba (15 km) accentuated that geographical remoteness significantly hampers the consistent and uninterrupted oversight of malnourished children’s nutritional regimen. They lamented, “The absence of a bicycle renders me unable to honor scheduled appointments; notwithstanding my endeavors to secure alternative means of conveyance from fellow spouses, my attempts have proven futile. Consequently, failure to attend today entails prolonged absence since the initial appointment” (PED 3).

3.2.3. Social Environment Factors

These factors included family life, community life and security.

Factors related to family life

A child’s developmental trajectory is intricately linked to the quality of the familial environment, which is pivotal in nurturing growth and facilitating recovery from childhood illness. Diligent attention to the child’s needs is paramount in ensuring effective recovery; however, fulfilling familial obligations is essential for optimal support.

A deficiency in familial support emerges as a significant impediment, particularly evident in cases of nutritional recuperation abandonment, where one or both

parents may be unavailable or inadequately engaged in the child's care. This was articulated by one participant who lamented the lack of assistance in managing the child's follow-up appointments and expressed feelings of isolation in their caregiving role.

Furthermore, the absence of parental support exacerbates the challenges faced by children, as evidenced by instances where children reliant on extended family members or caregivers experience difficulties in accessing necessary medical care and monitoring.

The pervasive sense of shame experienced by some parents of malnourished children adds another layer of complexity to the situation, hindering their ability to seek help and support.

This sentiment was echoed by a parent who expressed shame and humiliation regarding their child's condition, compounded by the perceived judgment of other family members.

Moreover, the phenomenon of stigmatization further exacerbates the challenges faced by malnourished children and their caregivers, leading to feelings of isolation and inadequacy.

Lastly, competing commitments, such as agricultural work or other familial responsibilities, often hinder consistent monitoring and nutritional recovery efforts, underscoring the multifaceted nature of the challenges faced by families in providing adequate support for their children's health and development.

Factors related to community life

Community life encompasses the attitudes, values, and societal norms that characterize a given society. In this context, the environment in which parents reside, particularly during periods of illness, can significantly influence the upbringing and development of their offspring. Several communal factors have been identified as impeding the effective nutritional monitoring of malnourished children, as articulated by select participants.

The sensation of shame and humiliation emerges as a notable impediment to the diligent oversight of nutritional rehabilitation. One participant, reflecting on their experiences, elucidates this sentiment: "The scrutiny from my neighbors regarding my child's precarious health status often confines me to seclusion within my quarters, as I endure feelings of humiliation..."

Furthermore, stigmatization emerges as a multifaceted catalyst for the abandonment of nutritional surveillance among parents of malnourished children. An exemplifying testimony elucidates this phenomenon: "The community attributes my child's illness to my purported negligence. Enduring ridicule and disparagement deeply affect my psyche and that of my child. I am disparagingly referred to as 'bignobdo maa', signifying the mother of the emaciated child, a label that profoundly wounds me..."

Additionally, social occurrences such as bereavement and the onset of illnesses among family members can detrimentally disrupt the continuity of care for malnourished children. As articulated by one participant: "I suspended treatment

attendance following the demise of my paternal uncle, engaging in a period of mourning that spanned four consecutive Thursdays. Nonetheless, I acknowledge the efficacy of the treatment regimen if adhered to diligently.”

Regional insecurity with unidentified gunmen

Insecurity has emerged as a significant contributing factor to abandoning nutritional recuperation efforts. Since 2015, Burkina Faso has grappled with a notably precarious security environment, with the Titao region no exception. This situation has had palpable repercussions on local healthcare provision and the efficacy of interventions aimed at childhood malnutrition.

One participant recounted their experience, stating, “[...] I used to attend regularly, but the healthcare personnel informed us of instances where unidentified armed individuals obstructed the passage along the route. Consequently, I ceased attending the sessions and instead resorted to providing homemade millet porridge for my child’s sustenance” (PED 13). Another participant echoed similar sentiments, articulating, “[...] the prevailing security situation installs fear within me, thereby dissuading me from embarking on solo journeys to access medical facilities” (PED 3). These narratives underscore the tangible impact of insecurity on healthcare-seeking behaviors, thereby impeding the continuity of nutritional rehabilitation initiatives within the region.

3.2.4. Therapeutic Factors

Outpatient treatment

As a strategy aimed at preventing relapse among malnourished children, outpatient treatment enables continuous monitoring of the patient’s health status and facilitates potential corrections to previously administered interventions. This approach entails community involvement, a pivotal aspect in overseeing nutritional rehabilitation. Discrepancies between the community and healthcare infrastructure can detrimentally impact the management of malnourished children, leading to unfavorable outcomes. The service organization failed to garner positive feedback from participants. A notable occurrence was the temporary disruption in the supply of ready-to-use therapeutic food (RUTF), as articulated by a participant: “I ceased attending because, at one point, the medical center ran out of milk, and I was not notified when it became available” (PED 4). Echoing this sentiment, another parent stated, “I discontinued visiting the health center for my child’s follow-up as I visited thrice consecutively only to find no milk available (PED 12).” These testimonies underscore how interruptions in care provisions compel parents to discontinue monitoring their children’s nutritional status.

Effects of treatment on the malnourished child

Following the administration of Ready-to-Use Therapeutic Food (RUTF), the impact on malnourished children may manifest either positively or negatively, influencing the decision of parents to either persist with or abandon nutritional rehabilitation efforts. Many parents find solace in witnessing tangible improvements in their children’s health status. Consequently, some may opt to prematurely cease nutritional interventions under the misconception that their child has

fully recuperated. A parent's testimony elucidates this phenomenon: "I ceased attending sessions because, at a certain point, as my child's condition notably ameliorated, I presumed his health had been completely restored."

Furthermore, diarrhea may ensue after RUTF administration, prompting parental discontinuation of follow-up care, as exemplified by a participant's account: "Upon consumption of the 'milk' for two consecutive days, my child frequently experiences diarrhea, discouraging further adherence." This observation is corroborated by another mother who recounts, "[...] my child developed diarrhea after ingesting the milk [...]."

Moreover, when parents perceive a protracted pace of recovery post-RUTF intervention, they may turn to traditional medicine, attributing the malaise to supernatural causes such as witchcraft or divine retribution. "Subsequently, my mother-in-law sought the aid of a traditional healer who advocated affixing cowries to the child's left hand, attributing the affliction to malevolent forces." Echoing this sentiment, another caregiver concurs: "[...] prompted by constant crying, I sought the services of a traditional healer in a remote village, where I resided for ten days. The prescribed remedy involved boiling tree bark for cleansing rituals, yielding no discernible improvement." The preceding observations underscore how the repercussions of RUTF administration during malnutrition treatment contribute to parental discontinuation of nutritional rehabilitation efforts for their children.

4. Discussion

This study aimed to analyze factors influencing the abandonment of nutritional recovery by parents of malnourished children aged 6 to 59 months in outpatient care in the health district of Titao, Burkina Faso. The main factors are individual (parents' knowledge of undernutrition), environmental (physical, social, and political), and therapeutic.

Most participants had little knowledge of undernutrition at the individual level, which remains unrecognized. A lack of knowledge about malnutrition and its consequences can influence how mothers feed their children and prevent them from recognizing the early signs of malnutrition, ultimately hindering them from taking appropriate action. Several studies have shown that nutrition education can improve maternal knowledge of stunting prevention and increase awareness of preventing stunting in toddlers. Providing nutrition education for maternal improvement minimizes stunting [15]-[17]. Additionally, ignorance of undernutrition could be due to taboos or confusion between undernutrition and certain illnesses. The persistence of taboos and erroneous beliefs about undernutrition thus becomes an obstacle to managing undernutrition [18]. Furthermore, a lack of communication about undernutrition and insufficient awareness of this disease can explain the abandonment of nutritional care [19].

The rainy season and its impact on roads pose a barrier to nutritional care because roads are typically degraded and impassable throughout the territory, particularly in this part of the Titao region. Consequently, access to health facilities

has become impossible, compelling parents of malnourished children to abandon treatment [12] [20]-[22].

Many parents of malnourished children in the Titao area are compelled to seek livelihoods at gold sites. Unfortunately, these relocation sites fall outside the Titao health coverage area. Often, these parents fail to plan to continue their children's treatment. These factors collectively contribute to the abandonment of nutritional recovery for children [23] [24].

Mothers' occupation, stigmatization, lack of parental involvement, and perceptions of the cured child are other factors contributing to the abandonment of nutritional care [23] [25] [26]. Agricultural activities during the rainy season hinder the continuity of nutritional care [12] [20] [21]. Most participants rely on agriculture for sustenance, prioritizing these activities over their children's nutritional monitoring appointments. Additionally, participation in certain social events, such as funerals or maternal or child illnesses, among other factors, also contributes to the abandonment of nutritional monitoring [18].

Most families in Titao are large and live in precarious conditions, often preventing the head of the family from assuming their responsibilities correctly [27]. Consequently, parents of malnourished children and the children themselves face stigmatization, mockery, and lack of support within the family [28] [29]. Knowing they cannot rely on solidarity, each parent must struggle for their family's well-being. The breakdown of the social fabric leads to family members isolating themselves to cope with their situation [28] [29]. The consequences of undernutrition stigmatization thus contribute to the abandonment of nutritional care [28]-[30].

The composition of participants' daily rations indicates a lack of food nutrients and vitamins. Consequently, Ready-to-Use Therapeutic Foods (RUTFs) become the primary source of healthy recovery. Therefore, interruptions in RUTF provision significantly impede nutritional recovery. However, participants reported that when they attended appointments, health workers informed them that the security situation prevented the health center from supplying RUTFs, leading to stockouts. This issue obstructs nutritional recovery and facilitates the abandonment of malnutrition treatment [31] [32].

Additionally, certain barriers related to the organization of the nutrition service, such as dysfunctions at the treatment level resulting in missed appointments, lack of child weighing during consultations, poor patient reception, inadequate ration distribution, long waiting times, and insufficient communication on treatment between staff and beneficiaries, contribute to parents abandoning their children's nutritional care [33]. The effect of therapy also justifies the abandonment of nutritional monitoring. RUTF often leads to treatment abandonment [34]. Some parents discontinue recovery when they notice improvements in their child's health, considering the child cured. Moreover, side effects of the product, such as vomiting and diarrhea, discourage some parents and lead to treatment abandonment [33]. Finally, some parents resort to traditional medicine when they observe no improvement in their child's health [35]. Not all children react similarly to RUTF; the child's body adapts. Therefore, impatient parents may prematurely

discontinue their children's nutritional monitoring [34]. Ultimately, the deteriorating security context in Titao contributes to parents abandoning their children's nutritional care monitoring. Parents fear travelling to health centers due to attacks by unidentified armed individuals.

Limitations

Like all qualitative research, our study had limitations: the researcher's subjectivity may have influenced the data analysis results. However, we adopted a neutral perspective throughout. Furthermore, the results of this study are transferable only to contexts like the environment in which the study was conducted. Although saturation was reached, insecurity limited the recruitment of participants.

5. Conclusions

Table 1. Participants' sociodemographic characteristics.

No.	Coded	Educational level	Marital status	Family size	Father occupation	Residence	Distance to CREN (km)
1	PED_1	uneducated	Polygamy	30	Gardener	Golonga	5
2	PED_2	Primary	Monogamy	24	Gardener	Golonga	5
3	PED_3	uneducated	Polygamy	50	Farmer	Songtaba	15
4	PED_4	uneducated	Monogamy	6	Farmer	Titao	< 1
5	PED_5	uneducated	Monogamy	19	Farmer	Pelaboukou	20
6	PED_6	uneducated	Polygamy	22	Farmer	Zomnanga	10
7	PED_7	uneducated	Polygamy	8	Farmer	Zomnanga	10
8	PED_8	uneducated	Polygamy	21	Farmer	Signonghin	5
9	PED_9	uneducated	Monogamy	18	Gardener	Titao	< 1
10	PED_10	uneducated	Polygamy	25	Farmer	Salkoudougo	10
11	PED_11	uneducated	Polygamy	30	Farmer	Titao	< 1
12	PED_12	uneducated	Polygamy	26	Farmer	Tansalga	5
13	PED_13	Literate/ Arabic	Monogamy	28	Gold panner	Tansalga	5
14	PED_14	uneducated	Monogamy	30	Farmer	Tansalga	5
15	PED_15	Primary	Polygamy	6	Farmer	Tansalga	5
16	PED_16	Primary	Monogamy	17	Farmer	Salkoudougo	10
17	PED_17	uneducated	Monogamy	17	Farmer	Titao	< 1

The present study sought to investigate the factors influencing the abandonment of nutritional rehabilitation efforts among parents of malnourished children aged 6 to 59 months receiving outpatient care within the Titao health district, Burkina Faso. A comprehensive analysis revealed many factors operating at the individual (parental understanding of undernutrition), environmental (physical, social, and political), and therapeutic levels that substantially impede nutritional rehabilitation's continuity and enduring success in malnourished children. Appreciating

and remedying these multifaceted influences is essential for formulating efficacious care strategies and policies to improve child undernutrition.

Ethical Approval and Consent to Participate

Ethical approval for this study was submitted to the Ethics Committee for Health Studies (CERS) of Burkina Faso. We obtained a favourable opinion from the CERS under deliberation N° 2020-01-013. The field surveys were effective after receiving authorization to investigate from the North Regional Health Department. Authorization was granted by the regional director (deliberation N° 2019-439/MS/RNRD/DRS of 05-27-2019).

Each participant in the study read the information note and the free and informed consent form. The participants were advised of their freedom to answer or not to all the questions and to withdraw at any time. Additionally, they were reassured of the anonymity and confidentiality of the information collected. To ensure anonymity, participants were individually coded through a code so that it was impossible to identify them. Throughout the data collection, we focused on each interview without distractions while respecting ethical values.

Availability of Data and Material

All the study data and the material used to collect them are available.

Acknowledgements

We sincerely thank all the health authorities of the North Region, the entire team of medical staff in the district of Titao and the parents of malnourished children who participated in the study. Additionally, we thank our supervisors and the team that collected and compiled the data.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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