

Traditional practices in newborn and infant care: a public health issue

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Abstract. During the postnatal period, mothers are destabilized by the imbalances that accompany this phase of their children's lives. The search for solutions leads them to substitute newborns medical care interventions with traditional home-based practices, which are characterized by their dangers for the health of young children. This issue prompts our interests to explore traditional practices within Moroccan context, particularly in rural and urban areas of the Eastern Moroccan region. The study is based on a quantitative approach and involves 422 mothers of children under the age of one. Using an online questionnaire, the study identifies the main factors influencing the adoption of traditional care by Moroccan mothers. The observations show a high prevalence of traditional dietary (63.5%) and body care practices (56.9%), with specific trends and notable differences between rural (89.5) and urban (70.0%) areas, as well as social, cultural and economic factors contributing to the persistence of these practices among Moroccan mothers. The results report a significant association between the practice of dietary care and place of residence ($p < 0.001$), level of education ($p = 0.030$), professional occupation ($p = 0.004$) and access to healthcare facilities ($p = 0.022$) and a significant association also between body care and place of residence ($p < 0.001$), level of education ($p = 0.003$), professional occupation ($p < 0.001$) and access to healthcare facilities ($p = 0.047$). The results suggest that these traditional practices, which are still maintained due to deeply rooted ancestral cultural beliefs and limited access to modern healthcare in some areas, require the implementation of a health policy based on effective intervention strategies to achieve the sustainable development goals in Morocco. **Keywords :** Traditional care, Newborn, infant, Cultural care, Body care, Nutritional care, Morocco.

1 Introduction

The vulnerability of the first month of life is well confirmed by the occurrences of 38 % of child deaths in Tunisia, for example [1]. Other researchers reports the fragility of children in the first year of life which is the most sensitive phase during which mothers are most disturbed by their newborns' illnesses, and where traditional care practices are most often given to a child [2]. In low-income African societies, the practice of initially turning to traditional healthcare is still common. These services are an effective way to prevent and manage diseases at all ages for groups who sometimes do not have access to the most essential modern medical care. While some practices appear to benefit a child's development, others may pose certain risks to newborns and can occasionally be detrimental to their health, potentially increasing neonatal morbidity and mortality [3]. Although modern medicine exists alongside with these practices, they remain deeply rooted in tradition and are passed down from generation to generation, covering dietary aspects such as infusions and Tahnik, as well as physical practices like swaddling and massage [4]. These practices are often justified by cultural and religious beliefs, perceptions of well-being for the child, and sociocultural representations of illness [5]. However, certain practices may have adverse health consequences for children despite their popularity, such as the use of kohl to decorate babies' eyes or ward off the evil eye. Although common, this practice is associated with a risk of lead poisoning [6]. Excessive consumption of carbohydrates also exposes young children to obesity and leads them to avoid breastfeeding [7, 8]. As a result, giving dates to suck on to newborns is one of the most inappropriate eating habits. Other practices expose children to injuries, infections, and death, either immediate or delayed [9]. Traditional newborn care practices vary around the world. In Benin, for instance, newborns are often treated with inappropriate products and substances that are inappropriate for care umbilical cord, notably the frequent use of toothpaste [10]. In Zambia, traditional newborn

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care practices involve the application of substances like charcoal, earth powder, engine oil, or manure [11]. Women from East, South, and Southeast Asia still practice a wide range of traditional practices for newborns after childbirth, such as massage, diets, and behavioral and social taboos [12, 13]. In Jordan, a metal coin is placed on newborn's umbilicus to prevent umbilical hernia [14]. However, public health literature highlights that in North Africa and the Middle East, such practices are influenced by socio-economic, cultural, and religious factors [15, 16]. In the Moroccan context, traditional care practices for newborns and infants are also widespread, particularly in rural and disadvantaged communities, and represent a significant public health challenge [17]. Recognizing the limited research exploring home-based neonatal care in the Moroccan context, the use of traditional care practices to treat Moroccan children forms a fundamental line of thought for understanding such a health issue. The motivations behind these practices generate a complex problem. In this regard, it seemed that a study analyzing the factors related to these traditional practices would help understand why Moroccan families substitute modern neonatal care with traditional generics. From this perspective, the aim of this research is to identify the most common cultural traditional care practices and analyze the determinants related to their adoption, in order to understand how various factors may influence their adoption in the eastern part of Morocco. This context is further explored through a field survey of mothers living in the eight eastern provinces of the country.

The empirical data collected links the use of traditional practices by women in the Oriental region of Morocco to treat their children with their parity, place of residence, level of education, professional profile, access to healthcare facilities, and the community sources that influence them. The results provide a basis for raising awareness among the populations concerned and promoting safe alternatives and also complement the existing literature on early childhood health practices in developing countries.

2 Methods

2.1 Study setting

The study was conducted among women living in the eight provinces of the Oriental region of Morocco, namely Oujda-Angad, Berkane, Driouch, Figuig, Guercif, Jerada, Nador, and Taourirt, in order to obtain a comprehensive overview of traditional healthcare practices, to understand behaviors surrounding this type of care, and to assess their prevalence in Moroccan communities.

2.2 Study type

The study is cross-sectional, using a quantitative approach. Data was collected during August and September 2022.

2.3 Target population and sample

The study involved 422 mothers of newborns and infants under one year of age recruited in the eastern region of Morocco. According to the literature, this is the period when traditional care is most commonly used for children. However, any mother meeting these criteria but not living in one of the provinces in the studied area is excluded. Our study covers eight provinces in the eastern region. Which suggests a stratified sampling by province. This guarantees a balanced representation of the different geographical areas, thus reducing the bias associated with territorial disparities.

The sample size is justified by Cochran's formula, which is often used in epidemiology [$n = Z^2 * p * (1-p) / d^2$]. This gives us a sample of $n = 384.16$ with reference to a total population of 110.097 women of childbearing are declared by the Moroccan High Commissariat for Planning. However, we added an additional 10% to compensate for potential non-responses or incomplete data, bringing the total to 422, which represents 0.38% of women of childbearing age of the region.

2.4 Data collection

The data is collected using a standard digital questionnaire (written in Arabic) and administered online (Google Forms) to mothers targeted at the health centres. In addition, a pretest of the tool was conducted on a small population with similar characteristics to the study population. The data collection instrument included closed-ended questions about dietary and bodily care practices commonly known in the Eastern region of Morocco. The two dependent variables were the use of traditional dietary care and the use of traditional bodily care, with two response options: Yes and No (with further details on the types of practices). Independent variables included several factors that could be linked to these practices, namely social, geographical, demographic, and economic characteristics (parity, place of residence, level of education, occupation, income, and access to modern healthcare facilities); the purposes of these practices (religious, therapeutic, and aesthetic); and the sources influencing mothers in adopting traditional care (mother/mother-in-law, husband, neighbor/friend, oneself).

2.5 Data processing and analysis

Data were analyzed statistically using SPSS 21.0 to measure the frequency of traditional practices and to compare differences between variables, using a Pearson's chi-squared test. Statistical significance was set at $p < 0.05$.

Univariate and bivariate analyses were conducted to explore the relationships between the adoption of traditional dietary and bodily care and the identified factors.

2.6 Ethical considerations

Ethical principles in research were considered in our study through the respect for confidentiality and the right to withdraw from the study. Participants gave informed consent and were made aware of the scope and purpose of the research, as well as the anonymity of the processing of their responses. Furthermore, no questions touched upon their intimacy or private life. Permissions to access information were also obtained from the regional health authority.

3 Results

3.1 Characteristics of the studied population

The collected data covers both rural and urban areas, providing a diverse sample that allowed us to observe regional variations and to compare practices between the two areas. The majority of mothers live in towns (75.1%), multiparous mothers constitute 50.2% of the sample and educated mothers 90.8% for whom the level of education varied between primary and university. Most of the participants have no professional activity (64.7%) and more than half had no source of income (59.2%). In addition, the vast majority, 94.8% announces having difficulty accessing healthcare facilities (table 1).

Table 1. Distribution of mothers according to their sociodemographic characteristics

	Variables	Count	Percentage
Parity	Primiparous	210	49.8 %
	Multiparous	212	50.2 %
Place of residence	Rural	105	24.9 %
	Urban	317	75.1 %
Mother's level of education	Illiterate	39	9.2 %
	Educated	383	90.8 %
Mother's occupation	Without professional activity	273	64.7 %
	With professional activity	149	35.3 %
Mother's own income	No income	250	59.2 %
	With income	172	40.8 %
Access to health facilities	Easy	22	94.8 %
	Difficult	400	5.2 %

3.2 Traditional care practices

3.2.1 Prevalence of traditional care practices by mothers in the Oriental region of Morocco

Traditional holistic care generally includes both dietary and body care practices administered to children at home by mothers and their families. Regarding the use of holistic traditional care, 74.9% of the population in the studied region uses both dietary and bodily care simultaneously. A significant number of mothers use dietary care (63.5%), and more than half (56.9%) use body care to treat their children. A majority of mothers from rural areas (89.5%) reported practicing holistic traditional care compared to those residing in urban areas (70.0%). Regarding the parity of users, 70.0% of primiparous mothers reported using these practices compared to 79.7% of multiparous mothers. These practices were more common among uneducated mothers (92.3%) compared to educated mothers (73.1%), and also among non-working mothers (81.0%) compared to working mothers (63.8%) (table 2).

Table 2. Association between mothers' characteristics and the practice of traditional holistic care in the eastern region of Morocco

Variables	Holistic care practitioner	Non-practitioner	n	P-value
Mother's parity			422	p = 0,021
Primiparous	70.0 % (147)	30.0 % (63)	210	
Multiparous	79.7 % (169)	20.3 % (43)	212	
Place of residence			422	p < 0,001
Rural	89.5 % (94)	10.5 % (11)	105	
Urban	70.0 % (222)	30.0 % (95)	317	
Educational level			422	p = 0,008
Illiterate	92.3 % (36)	7.7 % (3)	39	
Educated	73.1 % (280)	26.9 % (103)	383	
Professional activity			422	p < 0,001
Without professional activity	81.0 % (221)	19.0 % (52)	273	
With professional activity	63.8 % (95)	36.2 % (54)	149	

3.2.2 Factors associated with the practice of traditional holistic care

A significant association was observed between the practice of holistic traditional care (dietary and bodily), maternal parity ($p = 0.021$), place of residence ($p < 0.001$), education level ($p = 0.008$), and occupational status ($p < 0.001$) (table 2).

3.3 Traditional nutritional care of newborns and infants

3.3.1 Practice of traditional dietary care and prevalence of its use by mothers in the eastern region of Morocco

Regarding traditional dietary care for children, it is practiced by 60.5% of primiparous women versus 66.5% of multiparous women, and by 61.9% of educated women compared to 79.5% of uneducated mothers. The use of traditional dietary care is also observed in 68.5% of mothers without professional activity and in 54.4% of those with an activity. Concerning the availability of modern care, 86.4% of mothers with limited access to healthcare facilities report using this care (table 3).

The main practices of dietary care concern the use of medicinal plants. These mainly involved the ingestion of infusions of Vervain (46.9%), Anise (18.5%), Cumin (32.5%), Fennel (20.4%), Fenugreek (17.3%), Honey (20.6%), but also Tahnik (45.7%), which is done by chewing dates and applying them to the newborn's palate. This type of traditional dietary care is widely practiced in rural areas (78.1%), but also in urban areas (58.7%).

3.3.2 Factors associated with the practice of traditional dietary care

Regarding the analysis by type of traditional care, we found a significant association between the practice of dietary care and place of residence ($p < 0.001$), education level ($p = 0.030$), professional occupation ($p = 0.004$), and access to healthcare facilities ($p = 0.022$). However, there was no statistically significant association between mothers' use of dietary care and their parity ($p = 0.198$) (table 3).

Table 3. Association between mothers' characteristics and the practice of traditional dietary care in the eastern region of Morocco (N= 422)

Variables	Dietary care practitioner	Dietary care non-practitioner	n	p-value
Mother's parity			422	$p = 0.198$
Primiparous	60.5 % (127)	39.5 % (83)	210	
Multiparous	66.5 % (141)	33.5 % (71)	212	
Place of residence			422	$P < 0.001$
Rural	78.1 % (82)	21.9 % (23)	105	
Urban	58.7 % (186)	41.3 % (131)	317	
Education level			422	$p = 0.030$
Illiterate	79.5 % (31)	20.5 % (8)	39	
Educated	61.9 % (237)	38.1 % (146)	383	
Professional activity			422	$p = 0.004$
Without professional activity	68.5 % (187)	31.5 % (86)	273	
With professional activity	54.4 % (81)	45.6 % (68)	149	
Access to care facilities			422	$p = 0.022$
Limited access	86.4% (19)	13.6% (3)	22	
Easy access	62.3% (249)	37.8% (151)	400	

3.4 Body care for newborns and infants

3.4.1 Practice of traditional body care and prevalence of their use by mothers in eastern region of Morocco

Body care mainly includes traditional massage (82.0%), swaddling (84.0%), and the practice of scarification, although the latter is less frequent but present in our sample (2.85%). This type of care is mainly performed on the navel (19.7%), the eyes (31.3%), or on other various parts of the child's body (arms, legs, torso and face) (37.7%). Body care is performed by applying Henna (53.8%), Kohl (52.9%), Cade oil (74.2%), Olive oil (15.4%), or breast milk (32.1%).

Regarding the parity of mothers, 52.9% of primiparous mothers and 60.8% of multiparous mothers practice these cares. Practicing mothers who reside in rural areas represent 82.9% and those residing in urban areas constitute 48.3%. This use is also revealed among 79.5% of uneducated women versus 54.6% among educated ones, also among 65.6% of mothers not occupying any professional activity and among 40.9% of those who work. Regarding access to medical care facilities, it was judged easy by 55.8% but limited by 77.3% of user mothers (table 4).

3.4.2 Factors associated with the practice of traditional body care

We identified through the analysis of the practice of the second type of traditional care a significant association between body care and place of residence ($p < 0.001$), level of education ($p = 0.003$), professional occupation ($p < 0.001$), and access to healthcare facilities ($p = 0.047$). However, there was no statistically significant association between the use of body care and maternal parity ($p = 0.097$) (table 4).

Table 4. Association between mothers' characteristics and the practice of traditional body care in the eastern region of Morocco (N= 422)

Variables	body care practitioner	Dietary care non-practitioner	n	p-value
Mother's parity			422	$p = 0,097$
Primiparous	52.9 % (111)	47.1 % (99)	210	
Multiparous	60.8 % (129)	39.2 % (83)	212	
Place of residence			422	$P < 0,001$
Rural	82.9 % (87)	17.1 % (18)	105	
Urban	48.3 % (153)	51.7 % (164)	317	
Education level			422	$p = 0,003$
Illiterate	79.5 % (31)	20.5 % (8)	39	
Educated	54.6 % (209)	45.4 % (174)	383	
Professional activity			422	$P < 0,001$
Without professional activity	65.6 % (179)	34.4 % (94)	273	
With professional activity	40.9 % (61)	59.1 % (88)	149	
Access to care facilities			422	$p = 0,047$
Limited access	77.3 % (17)	22.7 % (5)	22	
Easy access	55.8 % (223)	44.3 % (177)	400	

3.5 Dimension of influences on mothers for the use of traditional dietary and body care practices

3.5.1 Source of influence

The Chi-square analysis revealed that two of the four sources of influence encouraging mothers to provide traditional care to their children were significantly associated with traditional dietary practices (influence of the mother-in-law/mother: $p < 0.001$; influence of the neighbor/friend: $p = 0.032$) and with body care practices (influence of the mother-in-law/mother: $p < 0.001$; influence of the neighbor/friend: $p = 0.006$). The influence of the husband and of the mother herself showed no significant association with these practices (table 5).

Table 5. Association between sources of influence on the mother and the practice of traditional dietary care and body care in the eastern region of Morocco (N= 422)

Source of influence	Dietary care practice	%	p-value	Body care practice	%	p-value
The mother-in-law/mother		71.7 %	$P < 0.001$		69.2 %	$P < 0.001$
The neighbour/friend		76.9 %	$p = 0.032$		74.1 %	$p = 0.006$
The husband		70.8 %	$p = 0.044$		60.0 %	$p = 0.720$
The woman herself		58.0 %	$p = 0.296$		53.2 %	$p = 0.530$

3.5.2 Objectives of traditional healthcare practices

The analysis of the goals for which mothers' resort to these practices reports a significant association between dietary care and the medicinal purpose of treatment ($p = 0.002$) and the religious purpose ($p < 0.001$). And also, a significant association between body care and the religious purpose ($p < 0.001$), the medicinal purpose of treatment, and the aesthetic purpose ($p < 0.001$) (table 6).

Table 6. Association between mothers' expected outcomes and the practice of traditional dietary care and body care in the Oriental region of Morocco (N= 422)

	Dietary care practice		Body care practice	
	%	p-value	%	p-value
Religious purpose	6.4 %	P<0.001	46.3 %	P<0.001
Medicinal treatment purpose	64.2 %	p= 0.002	68.3 %	P<0.001
Aesthetic purpose	-	-	13.8 %	P<0.001

4 Discussion

The study aimed to determine the prevalence and factors associated with the practice of traditional care by mothers in the eastern region of Morocco. Results indicated that 74.9% of mothers resorted to these practices to care for their children. Factors such as place of residence, level of education, occupation, and access to medical healthcare facilities were associated with the practice of traditional home care for newborns and infants under one year of age, suggesting their direct relationship with the persistence of traditional care in the Moroccan context. On this point, our results are in line with the reality of families in Togo who use traditional preparations to treat anemic children under the age of 5, a country where traditional remedies are used as the first therapeutic approach in the care pathway. Our results also align with those obtained in sub-Saharan Africa and western Kenya [16, 18], where the use of traditional medicine remains common due to the same socioeconomic and cultural factors.

The prevalence of traditional dietary care in our study is significantly higher in rural areas, where mothers often turn to medicinal plants due to their popularity, availability, and low cost. Our results indicate that traditional dietary care provides a response to unmet needs of modern healthcare, due to limited access to healthcare facilities. A finding consistent with what was found by Fantaye et al [19] in a meta-analysis on African women's preferences for traditional care, and for whom adapted healthcare is inaccessible, leading women to seek cultural practices to their postpartum health concerns. This reliance on traditional practices could reflect a continuity of ancestral knowledge, often seen as complementary or superior to medical treatments. Body practices such as massage and swaddling are present in both areas, although the technique and frequency vary slightly between urban and rural areas of Morocco. These bodily care practices are also influenced by the place of residence. The trends observed in our research are consistent with other studies conducted in West Africa, which report a high prevalence of traditional bodily care, particularly in rural areas [20].

When analyzing the economic status of mothers, our findings indicate that involvement in income-generating activities is linked to the use of traditional care practices. Specifically, unemployed mothers were more likely to rely on traditional dietary and bodily care practices. In this sense, it has been widely acknowledged that when women have limited incomes, they turn to traditional methods for treatment, preferring them to modern healthcare services, which are considered costly [19]. Our findings are further corroborated by those reported for Syrian and Turkish communities [2]. Thus, several assumptions can be put forward. The differences may be related either to the absence of a personal income, and consequently a certain financial dependence of the mother preventing her from seeking public or private health services, or to the lack of constructive interactions with other women in a professional environment, who could advise mothers to use conventional medicine rather than traditional treatments. We believe that the first assumption applies to the reality of our studied context, given that Moroccan mothers are still strongly influenced by older women in their families.

Motherhood is a phase in a woman's life that requires knowledge and skills to properly care for a newborn. Ignorance of complications could be blamed for resorting to invasive practices on a vulnerable child. Indeed, illiteracy contributes to an increase in the use of traditional medicine, which is culturally and socially rooted in Moroccan families, despite the concurrent use of modern medicine. Some mothers rely on modern medicine for diagnosis, but often prefer to use traditional medicine to treat their children.

Our findings indicate that uneducated women are more likely to seek traditional care than educated women. The results we have obtained are in agreement with the analysis of the Turkish context, where the level of education of mothers is associated with traditional practices [2]. However, although it is concrete that a woman's level of education, through her education on reproductive health, may be associated with generic cultural care practices, this link remains debatable according to empirical work. Indeed, Osman et al [21] did not find a correlation between the mother's level of education and traditional care in the Egyptian context. Kesterton and Cleland [22] also concluded that in India, both educated and uneducated women are part of a community that uses cultural practices without any distinction between these two categories. This finding prompts us to consider other associated determinants that may lead mothers to opt for such practices, particularly those related to the family and social environment in which they live.

When exploring the delicate links between the use of traditional care for children and the influences exerted on mothers to lead them to this use, two main factors deserve to be examined. Firstly, there is the effect of the

family environment, secondly, there is the question of the religious and spiritual references that frame the behaviors of Muslim mothers in Morocco.

Certain practices observed, such as Tahnik and the application of plant decoctions and infusions, do not seem specific to the Moroccan context. On the contrary, they are universally employed [5, 11, 19, 20]. While the ritual stays consistent, the specific methods and products used in postnatal care vary based on family prescriptions within the community.

Given that the postnatal period is a phase in which a new mother seeks comfort and support from her entourage to care for her child, the present analysis shows that the support of elders in Moroccan families predisposes new mothers to adopt these practices, as they often express a dependence on the advice of elders. In our study, the mother-in-law and mother, as well as the neighbor and friend, are the eldest women most responsible for decisions regarding traditional neonatal care and they are the main advisors to the woman. Our conclusions are not unexpected. The prevalence of this influence does not seem different from that found by Kane [23] through a multicentric study in Benin, Burkina Faso, Mali, Mauritania and Togo, where a large majority of mothers consider the advice of elders as a reliable and proven source that can even take the form of a hierarchical authority or 'intrafamily power relations'. Similarly, this was consistent with the results of Kuşlu et al [2] and Arisoy et al [24] who showed that Turkish mothers turn to their elders to solve the health problems of their newborns. A finding that is accentuated in Mali, revealing that it is the elders of the family who define cultural practices [25]. Although influential people vary, the prevalence of family influence remains confirmed. In the Asian context, an ethnographic study of Chinese mothers living in Switzerland reveals that parents impose on new mothers the obligation to adhere to the postpartum practices dictated by their culture [26]. On the other hand, the observational study in southern Mali conducted by Ahouangonou [10] confirmed that young mothers receive care instructions much more from older multiparous women, cousins and their aunts.

Indeed, the social influence within local Moroccan communities reinforces the persistence of these practices, despite modern medical knowledge, since traditionally a woman who has just given birth in Morocco is surrounded by the oldest women in her family throughout the postnatal period.

Religious beliefs, spiritual protection, and aesthetic ideals are additional factors influencing Moroccan mothers' choices regarding traditional postnatal care. The Tahnik, for example, being associated with ancient religious customs among adherents of the Muslim religion, is widely spread in Moroccan communities. Religion is also linked to traditional care by Abebe et al [27] in a community-based cross-sectional study in Ethiopia, where it plays an important role in maintaining these practices.

Attachment to traditional care is also linked to beliefs in spiritual protection and a substitution for modern care offered by health facilities, which are considered ineffective by mothers and their elders. However, while some practices such as the use of medicinal plants, natural oils, and gentle massage may have beneficial effects, other practices like scarification done with non-sterile equipment and the application of toxic products such as Kohl, which contains lead, present important risks to the health of infants, as confirmed by the World Health Organization [6, 15]. Therefore, the use of products posing a health risk as cade oil and toxic plants requires increased vigilance due to the potential risks of immediate or delayed morbidity and mortality in children.

Unlike previous research that was limited to qualitative observations of the Moroccan context, our study integrates a rigorous quantitative analysis, supported by statistical tests, to better understand the links between social, economic, and demographic variables and traditional practices. Given that Moroccan society is characterized by its cultural, traditional, and dialectical diversity, there is a wealth of knowledge in terms of substituting medical care. Therefore, understanding to what extent these practices are used in Moroccan society, and for what reasons, is crucial for public health programs.

Moreover, although the issue of traditional care provided to Moroccan children has been the subject of some explorations, it remains a genuine public health concern and a major challenge for policymakers. The results of our study could then support health policies. Nevertheless, some interpretations must be taken with caution, given certain limitations of the study, particularly its cross-sectional nature, characterized by the short duration of the investigation, which did not allow for the follow-up of the phenomenon according to the dynamic variations of home care behaviors over time. Furthermore, although the sample is diverse, our results are specific to mothers of children under one year old and a specific region of the country; the conclusions only apply to this category and are not generalizable to all Moroccan women. Another limitation relates to the quantitative design of the study, other relevant data could have been studied with a mixed-methods design. Although our results provide a tangible basis for future explorations, it would be relevant to extend this study to other regions of Morocco through longitudinal research and mixed-methods investigations, using interviews, focus groups, or direct observation.

Let us recall that neonatal health is characterized by a complex intersection of epidemiological, economic, socio-cultural and religious factors. Traditional and popular practices surrounding pregnancy and childbirth are largely influenced by specific cultural norms and standards. In-depth documentation of these practices and a deeper understanding of their underlying mechanisms are essential for developing more effective interventions that respect the values of the population [3]. In several countries, notably Tunisia, neonatal mortality has fallen significantly over the last three decades thanks to socio-economic and cultural progress and the various initiatives

introduced by the government to raise awareness, provides support for the population and train health professionals [1]. In the light of these developments, we suggest some possible solutions that can contribute to limiting harmful practices in the Moroccan context and highlight the need to raise awareness among Moroccan communities about the risks of dangerous practices and to encourage dialogue between traditional practitioners and healthcare professionals. A collaboration that could allow for the preservation of beneficial practices while eliminating those that pose a risk. The involvement of healthcare professionals in raising awareness about risks can help promote safe and culturally adapted practices. This involvement can only be concrete through the integration of the notions of 'traditional and cultural care' and 'cultural diversity in health' into the basic training programs of doctors, nurses, and midwives. These professionals will play a preventive role at the early stages of prenatal consultations and during childbirth.

The results also suggest implications for public health policies. It is fundamental to integrate culturally adapted awareness campaigns that are formulated in an accessible language and disseminated through channels close to the community, such as primary care health centres, community associations, or even religious leaders and community agents.

We also propose the implementation of collaborative health programs by integrating traditional healers and community agents, such as religious leaders and elderly people into health programs, which could facilitate the acceptance of modern care. This collaborative approach, by including training on modern and safe medical practices would strengthen the consistency of messages addressed to mothers and reduce adherence to potentially hazardous care. In fact, certain practices, such as gentle massage and swaddling, could be adapted to be practiced safely under the guidance of healthcare professionals. Training local interveners on the benefits and limitations of these practices could promote better adherence to medically safe and harmless practices, all while respecting their cultural traditions. The attention should also be paid to the distance and cost of medical care in rural areas, which are major obstacles for many families. Improving access to modern care, for example, through mobile clinics, which could reduce dependence on traditional practices.

5 Conclusion

The study sheds new light on the traditional practices of newborn and infant care practices in the Oriental region of Morocco. The findings reveal the omnipresence and complexity of traditional care practices, which depend on cultural and socio-economic factors of Moroccan mothers and could determine the continuation of these practices. However, our study presents some limitations as it does not include province-specific data. The analysis was primarily focused on comparing rural and urban areas within the same region, based on the assumption that inter-provincial differences would be minimal. Additionally, due to the geographical distance of certain provinces and logistical constraints, the questionnaire was administered online rather than in person, which may have led to the underrepresentation of the rural population in our sample.

Finally, this phenomenon requires a deep understanding and general awareness of these factors. The analyses obtained open up avenues for further research and provide a solid basis for developing awareness-raising programs and interventions tailored to mothers, aiming to reduce the potential risks associated with these practices, while respecting socio-cultural realities.

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