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Original Research Article

Indigenous Child Care Beliefs and Practices in the Niger Delta Region of Nigeria: Implications for Health Care

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ABSTRACT

Traditional beliefs, attitudes and practices dominate the care of the newborn and child in most countries. Some common traditional practices, especially female genital mutilation, are harmful. However there are other subtle indigenous practices which are inimical to children's health but rarely reported. Aim of study was to describe the indigenous practices of child care in some Niger Delta communities of Nigeria and highlight their health implications. Three hundred and seven mothers/guardians of children 0 to 5 years were purposively selected from 10 rural communities in Cross River and Bayelsa states. Mixed methods, focus group discussion, in-depth interview and observation, were used to collect data on child care beliefs and practices, and these were grouped into five categories; "*immediate care of the newborn*", "*routine and general care*", "*child protection/prevention of illness*", "*treatment of illness*", and "*delayed milestones*". Indigenous childcare practices were similar across cultures in this region. Some of these, like the use of unsterilized instruments to cut the umbilical cord and application of cow dung or ash to the cord stump have negative effects on child health and development. We conclude that some beliefs and customs valued for child care by indigenous communities are harmful to health while other practices, like exclusive breastfeeding for 6 months and skin-to-skin contact of mother and baby, are beneficial and should be encouraged. Results call for community health action and incorporation of findings into health education and health action. This would ensure improved child care and the reduction of under-five morbidity/mortality in Nigeria.

Key words: Child care, Indigenous beliefs, indigenous practices, Niger Delta region.

INTRODUCTION

Children are considered important in every society and early childhood is a very critical period of development. Therefore certain practices are put in place with the aim of providing appropriate child care practices for child survival, growth, development and wellbeing. Culture plays a very important role in child care and child rearing, so in many indigenous societies cultural values, beliefs, and norms shape child care attitudes and practices. Nigeria is one of the top 15 countries in the world for infant and under-five mortality. [1, 2] Most of these deaths occur in rural areas, are largely

preventable, and occur mostly in babies born at home. To achieve the MDG-4 there is need to reduce this mortality rate by considering every practice, both traditional and orthodox that may put the child at risk, and addressing all possible issues that relate to neonatal and child survival. A significant number of deliveries in the Niger Delta region (especially in the rural, remote and underserved communities) take place outside the health care facilities and are mostly conducted by the elderly women in the family or by traditional birth attendants (TBAs). In such communities folk remedies are usually utilized at home for sick children before seeking medical attention, sometimes when it is too late to save the children.

Many people, especially in rural communities, are still involved in indigenous (traditional) child rearing and child care practices. These practices vary with culture and some of them may affect the health and development of the child negatively, in the short or long run. Several studies [3, 4] have shown that some traditional neonatal care practices may put the child at risk by causing infections, anaemia, hypothermia and hypoglycaemia thereby increasing the risk of morbidity and mortality. In developing countries like Nigeria, traditional attitudes and practices dominate newborn and child care. Some of these practices for example female genital mutilation are obviously harmful and contribute significantly to childhood morbidity and mortality and are still practised despite community health education. Others on the other hand are more subtle but are inimical to children's health by either endangering health or hindering health-seeking behaviours for children's illnesses or resulting in mismanagement of children's sicknesses at home. However policy makers seem to underscore the importance of socio-cultural beliefs and practices in child care. Yet the challenge of newborn survival is unlikely to be addressed successfully by focus on orthodox practices and programmes alone. Failure to achieve cultural understanding when planning health interventions may contribute to failure of implementation. Policies therefore need to consider wide scale community engagement, education and modification of culture-related child care strategies in order to reduce neonatal, infant and child mortality. Studies on indigenous practices of child care in Nigeria are few and health planners seem to believe that all traditional/cultural practices are detrimental to health and so do not consider them when planning health interventions.

This study documents the indigenous practices related to child care in the Niger Delta communities and addresses their health implications. The paper highlights practices that are not commonly considered by health caregivers and planners but which may be harmful and which should be considered for community education and action. Data elicited will provide an understanding of common indigenous child rearing practices existing in the region; and will assist childhood programme planners to model interventions taking into consideration the traditional care behaviours of the society and adapt them for the improvement of child health. Findings will also equip care providers with knowledge of different traditional child care practices which are beneficial and ensure incorporation of these into community education to enhance culturally competent care. The purpose of the study was to explore and describe the indigenous (traditional) child care practices in rural communities of Niger Delta region of Nigeria and highlight the health implications of such practices.

MATERIALS AND METHODS

Design: This mixed methods (qualitative and quantitative) study lasting six months

was carried out in 10 rural communities in two states (Cross River and Bayelsa) in the Niger Delta region of Nigeria using focused ethnographic approach. Qualitative methods elicited beliefs and practices on child care while observation of some women in their homes during child care confirmed reports obtained during focus group discussion (FGD) and in-depth interview (IDI).

Sample and sampling technique: Multi-stage cluster sampling method was used to purposively select 307 participants (230 mothers/grandmothers and guardians of children 0-5 years, and 77 traditional birth attendants) in the selected communities. Ethical clearance for the study was obtained from the University of Calabar and permission from Southern Ijaw and Akpabuyo Local Government Councils. Participants gave informed consent and participated willingly.

Data collection: Data on indigenous beliefs and practices on child care were collected using focus group discussion and in-depth interview. There were thirteen focus groups (with membership of between 7 and 9). Each session lasted approximately 35 minutes and was recorded on audiotapes and field notes. The interview schedule was translated into Efik and Ijaw languages and re-translated into English. Re-translations gave a reliability coefficient of 0.71 (Efik) and 0.68 (Ijaw). The interview was carried out using local languages and pidgin English (simplified English) and in respondents' homes (which gave the opportunity to observe child care practices first hand). A check list was developed to record the observations.

Data analysis: Data from FGD and in-depth interview were manually checked for completeness, transcribed, coded and analyzed using Braun and Clarke (2006) thematic analysis [5] and NVivo 9.0. Rigor was confirmed through prolonged engagement with participants, member-checking, validation of data by informants, triangulation of data sources (interview, FGD and observation) and translation & re-translation of instrument.

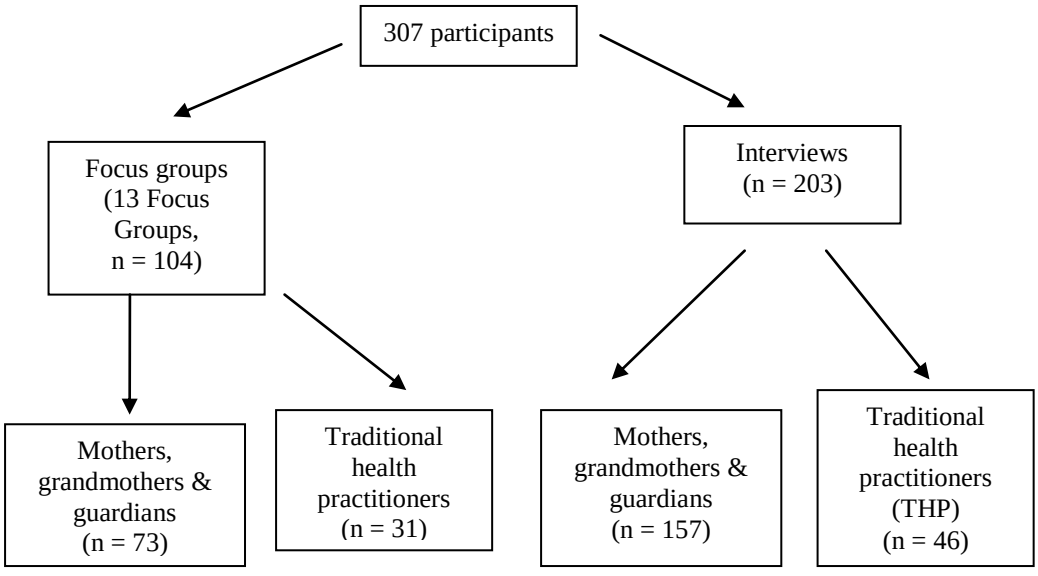

Figure 1 Participants and method of data collection

RESULTS

Table 1: Socio-demographic characteristics of participants in both groups (N = 307)

Characteristics	Participants involved in Focus Group Discussion (N = 104)	Participants involved in in-depth interview (N = 203)	Total No.	%
Age (in years):				
Below 25	17	28	45	14.7
25 – 35	29	48	77	25.1
35 – 45	41	59	100	32.6
45 – 65	10	43	53	17.3
Above 65	7	25	32	10.4
Occupation				
Farming	26	51	77	25.1
Fishing	16	31	47	15.3
Trading	20	57	77	25.1
Traditional health practitioner (THP)	31	46	77	25.1
Civil servant				
Parity	11	18	29	9.4
1 – 2	13	27	40	13.1
3 – 5	69	104	173	56.4
More than 5	22	72	94	30.6
Educational status				
No formal education	25	49	74	24.1
Primary	47	96	143	46.6
Secondary	27	45	72	23.5
Tertiary	5	13	18	5.9
Type of care giving				
Mother/grandmother	52	115	167	54.4
Guardian	21	42	63	20.5
Traditional Health Practitioner	31	46	77	25.1
Ethnicity				
Efik	32	70	102	33.2
Ibibio/Annang	21	39	60	19.5
Ijaw	36	76	112	36.5
Others	15	18	33	10.7

Table 2: Common themes and sub-themes

Themes	Sub-themes
Immediate care of the newborn	Cord care Mother-baby bonding Breast feeding
Routine and general care	Infant feeding Baby bathing and massage Excessive crying of baby
Child protection/prevention of illness	
Treatment of illness	
Delayed milestones	

Socio-demographic data: The socio-demographic characteristics of participants are shown on Table 1. Participants were mostly mothers and grandmothers, mostly of Ijaw and Efik ethnic groups; predominantly farmers, traders and traditional health practitioners, 56.4% had between 3 and 5 children each and highest education obtained was primary education in 46.6% participants.

Indigenous practices: Some indigenous childrearing practices believed to be protective and preservative were similar across cultures in this region, for example, use of herbal remedies (oral, bath, enema, instillation); tying of charms and amulets (made from dried chicken sacrum, cowry, black string, beads etc.) around the neck, waist, wrist and ankle; use of various oils and ointments for body massage; application of palm kernel oil and Shea butter ointment mixed with native garlic on the anterior fontanelle; and making of incisions on the skin of the forehead, side of face, middle of chest, back of waist etc. Incisions were either smeared with gun powder or burnt herbs to seal them. The beliefs and reasons for these practices were also similar in the communities and between ethnic groups, for example, to "ward off malevolent spirits and the evil eye"; to "protect baby from witchcraft/sorcery and from untimely death, misfortune, bad luck" etc. Another common child care practice in the region was the traditional massage of the baby with various substances (various oils, sieved ash and sieved "native chalk" or "calabash chalk" etc.) from the third day

after birth till 9 months, but especially within the first 6 months. None of the cultures gave the baby a name during pregnancy because names are often given based on the circumstances of birth. The traditional naming of the baby between the second and the eighth day after birth involved some indigenous rituals.

Themes for traditional practices: Five themes and six sub-themes were identified and results are presented accordingly. The 5 themes were *"immediate care of the newborn"* (with cord care, mother-baby bonding and breast feeding as sub-themes); *"routine and general care"* (sub-themes: infant feeding, baby bath/baby massage, and excessive crting of the baby); *"child protection/prevention of illness"*; *"treatment of illnesses"* and *"care during delayed milestones"*. (See Table 2).

Immediate care of the newborn: Those from the riverine areas stated that they "throw the newborn into the river... to get them used to water and be able to swim early in life". When asked if the baby would not drown the typical response was "No he used to swim in the womb, moreover someone brings him out (of the water) in a short while" (61 year-old grandmother). Failure to cry at birth was also handled in a traditional manner; "If a baby fails to cry at birth, he is given "ogogoro" (native gin) to stimulate him" (65 year-old TBA).

Cord care: Participants reported that they use hair thread or palm frond or slice of sharp bamboo stick to cut the umbilical cord. Reasons for this are expressed as "We don't use razor blade to cut the cord because it makes the cord take longer to separate". (59 year-old TBA). Another woman said "using razor (blade) makes the umbilicus to protrude after healing" (68 year-old grandmother). Several substances were applied to the umbilical cord both before and after the cord falls off, like engine oil or palm oil, sieved wood ash, heated herbs, breast milk (especially colostrum). At birth majority (except for one ethnic group) reported they rub the cord with coarse table salt to "prevent it from smelling bad later". While some participants said they clean the cord stump daily with warm saline water, none traditionally used methylated spirit or any other disinfectant to clean the cord, unless they had the baby in the hospital. When the cord stump heals some mothers say they apply a coin and tie it in place to prevent protrusion of the umbilicus.

Mother-baby bonding: Rooming-in was reportedly practised in the communities. "The new mother and her baby are put into seclusion until the umbilical cord drops". "This is to keep the baby warm", "make baby used to the mother's body scent" and "to protect the baby from evil spirits".

Breast feeding: In the three ethnic groups, the colostrum was discarded and the baby fed with plain water or glucose water. "We don't give the "yellow milk" (colostrum) to the baby, we give the baby water for the first 3 days. But once the baby starts breastfeeding we don't give anything else except herbal medications when necessary" (27 year-old mother). Another mother said "it is not as if the yellow milk is not given to the baby, but for the first 2 or 3 days the breast milk does not flow. By the time it flows on the fourth or fifth day it is stale so we express it out and throw it away" (35-year-old mother). Quite a number of mothers and grandmothers did not agree with exclusive breastfeeding and argued that the baby needs water, and a lot of it, because of the hot weather. "Shortly after giving the baby breast milk you can notice the baby's lips being dry. So we have to give the baby some water. I have always nursed my children and grand children that way" (70 year-old grandmother).

Routine and general care:

Baby bathing and Massage: Daily hygiene care of the baby includes massage "Baby bathing procedure is actually a ritual that combines massage, limb

stretching and body moulding before bathing with warm water. We place the baby on our laps (thighs) to bathe, not in the basin, so that we can massage the baby during the process" (62 year-old grandmother). "This is my second baby. I massage him whenever I am bathing him. I press his neck, arms and spine, and throw him up and shake him sometimes so that he does not grow up having fears" (28 year-old mother). In another culture the massage is done after a warm bath. "We usually massage after giving the child a warm bath. The heat of the water relaxes the muscles so that massage is not too uncomfortable for the baby" (54 year-old TBA). Substances used for massage were diverse. "I massage my baby with coconut oil or Shea butter to make her supple and feminine if a girl or have well developed muscles if a boy" (31 year-old mother). "Massage is good, it relaxes the baby. We call it Angor-Lor in Ijaw language and we use different substances. It makes the baby look rounded and healthy, not thin and ugly. People don't like carrying thin, dry-looking babies" (58 year-old grandmother). "For young babies we use sieved warm wood ash or clay (native chalk) or oil mixed with herbs to massage but when the baby is older we sometimes use hot sea sand and ground sea shells to smoothen and "polish" the baby's skin. These coarse materials get rid of rashes and other skin blemishes" (47 year-old TBA). "To prevent the newborn from catching cold, I use herbs and spices mixed in coconut oil or palm kernel oil to massage him" (26 year-old mother). During observation of one baby bathing cum massage session it was observed that the massage is very painful and harsh with a lot of pinching and kneading the skin. Reasons for massage include, "to give energy", "to smoothen the skin", "relieve abdominal colic" and "to relieve stress" especially during teething.

Infant feeding: As regards infant feeding, mothers said that children don't like new food and have to be force-fed. "At 6 months we begin to give baby soft solid food and if child refuses to eat we force-feed him and in extreme cases we give herbal concoctions to stimulate appetite" (38 year-old mother). In one such forced feeding session, it was observed that the baby was put across the mother's knee and the "pap" (liquid corn cereal) was poured into the cupped hand of the mother and poured into the throat of the crying child. At times the baby seemed to choke on the food. "We have different child feeding patterns after weaning; we give boys more protein to develop muscle but give girls more carbohydrates to make them 'plump' (rounded) and feminine. For the girl child, beauty is in the weight" (67 year-old grandmother)

If baby cries excessively: Excessive crying of the baby was attributed to a cause that requires traditional attention. "When a baby cries too much it may be a sign of discomfort, or because the baby is seeing frightening things. Different practices were engaged in. "I cuddle him, stroke him softly and gently rock him back and forth on my laps and throw him up in the air, and that makes him to stop crying" (26 year-old mother). "Hmm the baby may be seeing ghosts and evil spirits so we arrange for "separation rituals and 'feast' (65 year-old grandmother). The description of this ritual involves cooking rice (the native way with palm oil) and providing biscuits, soft drinks, groundnuts, and fruits and inviting other children less than 5 years of age to eat with fingers from a common tray. After the meal every child rubs the baby's body with their unwashed fingers and hands and the baby is left without bath till the following day.

Protection of child/ prevention of illness: Participants reported that they use various methods to protect children from health problems and sicknesses. These include traditional incisions, use of charms and amulets made from different substances with incantations made over them; and the

use of leaves, roots and bark of certain herbs which are prepared as concoctions or burnt in the room where the child sleeps. These are meant to ward off sorcery and evil spirits that cause illness. "To prevent my child from falling ill, I give him herbal juice to drink and also rub his body with palm kernel oil" (30 year-old mother) "I give her (child) cold herbal enema every two weeks" (47 year-old mother). "As you can see I have tied some charms and amulets around his waist, arms and legs to protect him from the "evil eye" and prevent sickness. This is what my mother told me to do" (25 year-old mother). Another common practice was making of skin incisions and applying gun powder to it to "ward off evil spirits".

"My third child used to become ill very often so I took him to the traditional healer who made incisions on his skin to let out bad blood, and then he put gun powder and herbs in the wounds" (31 year-old mother). This scarification practice seemed to be common among many ethnic groups.

Table 3: Common Indigenous practices with possible harmful health implications

Practice area	Always or sometimes practiced	Beliefs & Reasons for practice	Health implications
Cord care	**Immediate care:**		
	Cutting the cord with hair thread or "palm frond"	To narrow the cut end ("mouth") of the cord	These materials are usually not sterilized and may cause neonatal tetanus and infection
	Application of hot herbs on the cord stump	For fast healing without bad odour	Application of herbs to fresh cord may cause irritation
	Application of sieved ash or native chalk (clay)	To dry out the cord so that it doesn't smell	Application of unsterile ash or clay on cord stump may cause cord infection, possible septicaemia & neonatal tetanus
	Application of engine oil (motor oil) or palm oil	To lubricate the cord stump so it is not too dry and painful	Engine (motor) oil contains metallic additives and hydrocarbons. Absorption may cause toxicity, irritation & rashes
Circumcision	**Female circumcision**	To prevent the girl child from being wayward later	Female circumcision is harmful to health and psychology of the girl child
	Bleeding		
	Use of herbs e.g. (fresh goldenseal, plantain leaf; Geranium, etc. to stop bleeding	Herbs are used to enhance clotting and stop excessive bleeding	Baby's skin is tender, use of herbs on broken baby skin may cause irritation & corrosion of the area with subsequent infection
	Use of cold ash to stop bleeding	Ash used to stop bleeding	Use of unsterile ash may cause infection especially neonatal tetanus
	Use of cotton leaf & cannabis to reduce pain	Cannabis & cotton leaf reduce pain	Cannabis is reported in literature as an effective pain killer
Care during illness	**Diarrhoea**		
	Starving child of food for duration of the diarrhoea	To "rest the stomach"	May worsen the diarrhoea- malnutrition cycle in the child
	Melting "native chalk" in water and giving sips to child	To harden the stools and stop diarrhoea	Koalin and calcium carbonate in native chalk have anti-diarrhoeal action, some native chalk may contain lead and arsenic
	Convulsion		
	Instillation of palm kernel oil and herbal juice into eyes	To prevent the child from "seeing demons"	Palm kernel oil may cause eye irritation & affect vision
	Placing feet of child near fire during convulsions ("foot roasting")	To keep the feet warm	Convulsion is mostly caused by fever, "foot roasting" further increases body temperature and may prolong convulsions
	Jaundice		
	Instillation of herbal juice into eyes	"To reduce the discoloration"	Herbs may cause eye irritation
	Teething problems		
	Give tea made from fresh cannabis to baby to drink	To "settle the baby and prevent the child being irritable"	Literature reveals therapeutic use of cannabis for adults but not for babies. When juiced fresh, cannabis contains ineffective alkaloids & is safer. Once heated (participants say they boil the leaves), cannabis may have psychotropic effects on the child
Other practices	Making **skin incisions** (scarification) & rubbing gun powder (black powder) or burnt plantain leaves in the marks	To "mark the baby as sacred", for protection, "to scare away evil spirits" and prevent illness	Gun powder contains sulphur, charcoal & potassium nitrate. Literature reveals that it sterilises wounds, however it may cause allergy in sensitive individuals resulting in headache

Table 4: Indigenous practices with beneficial or uncertain effects

Practice area	Always or sometimes practised	Reasons for practice	Health implications
Immediate Care of the newborn	***If not crying immediately:*** Splash local alcohol (distillate of palm wine) on baby's face and body and put a little into mouth of baby	To stimulate the baby to cry	Sprinkling cold alcohol on the baby's skin may cause cold in the newborn
	After bathing the baby: Keep the baby lying close to mother (rooming-in)	To keep baby warm and to "get used to mother's body scent" which makes baby " contented", and "to protect the baby"	Rooming-in practice is beneficial to both mother and baby
Umbilical cord cares	***Immediate care*** Application of table salt to cord stump (always)	To make it dry and fall off easily without smelling	Use of salt on the fresh cord stump is useful to prevent & treat umbilical granuloma.
	Later care Instillation of breast milk (colostrums) to base of cord	To clean the cord and cause separation without leaving a piece	Colostrum contains antibodies and may cause shorter time of cord separation
Breastfeeding /weaning	Exclusive breastfeeding for 6 months	To provide baby with maximum nutrient and protection	Positive health effects
Other practices	Traditional massage of baby muscles, limbs and spine with different oils, ash or native clay	To make baby strong, keep warm and healthy and make skin supple To reduce abdominal colic and aid bowel movement	Massaging has been found in literature to promote warmth, improve mood, enhance sleep patterns, aid digestion, improve circulation. Although massage is beneficial some neonates may have allergy to some of the oils used
	Giving sips of water of tender coconut to the child with diarrhoea	To provide energy	Coconut water has been documented as readily available electrolyte solution in diarrhoeal treatment
	Inserting a coin in navel and tying it in place if child has protruding umbilicus	To push in the protruding umbilicus	Health implication of this not known
	Tying cowry shell or dried chicken sacrum, or enchanted beads around baby's neck, wrist, waist & ankle	To prevent & treat painful urination and to ward off evil spirits, mishap, witchcraft, untimely death & prevent sickness	Health implication of this not known
	Applying fresh palm wine and tender coconut water on the skin in measles	To prevent/treat itching and aid healing of the rashes	Palm wine contains yeast which helps in reducing itching and skin healing. Tender coconut water soothes irritated skin

Treatment of illnesses: Practices during illness include herbal baths, enema and drink; instillation of herbal juice and oils into the eyes to prevent convulsion, incantations, ritual incisions, sacrifices, therapeutic massage, "traditional feasts" and heat treatment depending on the illness and the belief concerning its causation. Herbal treatment was found to be very common in all the communities. Herbal mixtures of all types (infusion, decoction, juices etc.) were commonly used in the treatment of ailments. Commonly used herbs include yarrow, hibiscus leaves and flower, white sage, cotton leaf, cannabis, goldenseal, plantain leaf; geranium, liverwort, marigold, mistletoe, avocado leaves, cayenne, yellow tassel flower etc. The general opinion was that "herbs are free medicine from God; are freely available and can be used for any illness, as long as you know what to use, how to use it and what to use it for" (65 year-old grandmother). If a child has teething problems and is fretful and irritable, a practice found in several communities was the giving of tea made from fresh cannabis leaves and flowers to the child.

"If a child falls sick often, we arrange for a traditional "feast" with his/her age mates. When the child has convulsions, we place the feet of the child near fire (called "feet roasting") and instil oil or herbs into the eyes "(55 year-old TBA). A 30 year-old mother said, "Since I don't know what herbs to use I rub my baby's skin with palm kernel oil and also put (instil) some in the eyes, when he has fever to prevent convulsion. If he has

convulsion I also do the same thing". Another common practice in illness was the practice of starving the child who has diarrhoea. Reasons given for this were to "rest the stomach" and prevent further stooling. "If there is nothing in the stomach there will be nothing to pass out, so we do not give food to the child until the diarrhoea stops" (43 year-old mother). It the child has measles, fresh or fermented palm wine was applied on the skin to soothe itching and enhance skin healing.

Delayed milestones: For delayed milestones like delayed sitting, crawling, and walking the practices were not unusual. However for delayed talking, participants reported that they "cut the tongue tie" and give the child herbs mixed in "hot drink" (native gin). For delayed walking "special broom" was used to beat the feet of the child twice a day. Some said they apply heated herbs on the feet to make them light so that the child can lift them up easily.

Table 3 shows common indigenous child care practices and their harmful implications; while Table 4 shows the indigenous child care practices that may have beneficial or uncertain effects.

DISCUSSION

Traditional child care practices existed in all the communities used for study. Another study in the Niger Delta region [3] also reported the practice of abdominal massage, administration of herbal concoctions, scarification marks and unsterile umbilical cord care in their case study. In terms of umbilical cord care, best practice involves keeping the cord stump clean and dry without applying anything since dry cord care causes faster separation. However a related study in the Niger Delta region of Nigeria [4] reported that although most women cleaned the baby's cord daily, some thereafter applied some potentially harmful substances like herbs and cold ash. Another study in North-Eastern Nigeria [6] found traditional cord care practices to include application of hot fermentation, use of rag and lantern, use of Vaseline, ash / charcoal, groundnut / palm, mangrove oil, powder and red sand. Both studies conclude that these practices are harmful, because the substances are often contaminated with bacteria and spores, thus increasing the risk of infection. The use of common salt on the cord is however said to be safe, cost-effective and beneficial as it prevents, treats and reduces umbilical granuloma. [7,8] The application of colostrum on the cord also reported in a study in Turkey [9] has been found to be beneficial because colostrum contains antibodies and has no adverse effects on the cord but rather causes faster cord separation. However the practice of placing and tying a large coin on the healed umbilical stump, found in this study, has not been reported in any literature.

Some indigenous child care practices identified in the current study tend to have negative effects on child health and development. These include the use of unsterilized instruments to cut the umbilical cord, application of unsterile substances and herbs to the cord stump; not giving the colostrum to neonates (believed to be “sour milk” or “stale milk”); instillation of herbal juice in the eyes (during jaundice and fever), starving the child of food during diarrhoea; “foot roasting” (putting the feet of a child with convulsions near the fire); and giving tea made from boiled fresh cannabis to babies with teething problems. Harmful traditional child care practices are not peculiar to only Africa Asia, and the Caribbean but exist even in Europe. The existence of harmful practices like salting of the newborn, restrictive swaddling and delayed feeding of the baby after birth are also reported in Turkey [10,11] Some practices however have beneficial implications, for example, exclusive breastfeeding for 6 months and breastfeeding for up to one year to one-

and-half years; baby massaging, rubbing of cooking salt on the umbilical cord stump; rubbing of palm wine on the skin of a child with measles etc. Palm wine contains yeast, Phosphorus and B Vitamins, especially Riboflavin and Nicotinic acid, and these may be beneficial for healing of skin blemishes. Some practices have no documented beneficial or adverse effects, for example, hanging enchanted beads, cowry shell, black string or dried chicken sacrum around child's neck, wrist, ankle or waist, as a means of protection and preservation. This was a common practice in all the settings studied, and was also reported in the Somali culture in Kenya [12] and in Tanzania. [13] Both the Kenyan and Tanzanian studies reported the use of different traditional methods to protect infants and children from illness, disease and mishaps. These include herbal remedies, wearing of enchanted bracelets and amulets, incisions made on the forehead and other parts of the body and smeared with burnt herbs to ward off the "evil eye," witchcraft/sorcery and infectious diseases. Some of these substances may be irritating like the gun powder found to be used in the current study.

The use of plants for indigenous herbal remedies is common all over the world. Studies have documented the use of the leaves, stem, bark, whole plant, flower, fruit/seed, latex, and root of plants for traditional mother and child care. Several species of plants have been reportedly used for several reasons in the care, prevention and treatment of illnesses in children in India [14, 15] and Nigeria. [16, 17] Studies in South Eastern Nigeria [16] and South Western Nigeria, [17] report the beneficial effect of herbs like goldenseal, bryophyllum, *Ocimum gratissimum* (scent leaves), neem, bitter kola, siam weed, *Vernonia amygdalina* (bitter leaf), Acasia, raffia palm, moringa, alligator pepper, Geranium, liverwort, marigold, lime, papaya etc. and their use in the treatment of diseases. These herbs are often used in combination and as juice (oral or as enema), decoction, paste, poultice, etc.

Traditional massage of the baby is another very common practice in the settings used for this study and is not limited to African societies alone. The time of initiating baby massage varied from the day after birth in some cultures to end of first week in others. A study in Bangladesh [18] reported the use of some natural oils and ointments in baby massage, either alone or in combination. However the authors opined that the use of certain oils on baby's skin may have detrimental cutaneous and systemic effects, depending on the composition of the oil and the sensitivity of the baby's skin. [18] Baby massage has recently received so much attention that certain organizations and child care experts actually advocate baby massage to enhance baby's wellbeing. [19, 20] Several benefits have been attributed to it including improvement of skin barrier function, prevention of infection, keeping the baby warm, making the skin smooth and supple and the bones strong, [19,20] and enhancing the expulsion of toxins and reducing bilirubin levels thus ameliorating neonatal jaundice. [21] However there are certain conditions in which massage may not be beneficial as reported in the case study of a neonate who developed recto-vaginal prolapse because of traditional abdominal massage given to the neonate because of constipation. [3]

The practice of discarding the colostrum, found in this study, is also reported in Nepal [22, 23] and Ethiopia. [24] Reasons given for discarding the colostrum include its colour and the belief that colostrum is "bad blood in the breast" and that it causes abdominal problems like colic and vomiting. This practice deprives the newborn of valuable nutrients and antibodies.

Indigenous methods of treatment of diseases are also reported in several studies. [25-27] In a study in Edo state (another state in the Niger Delta region of Nigeria) indigenous treatment of diarrhoea include the use of native chalk. [25] Although native chalk contains substances that have anti-diarrhoeal actions, it may also contain lead and arsenic (depending on where it is mined) and these may cause inflammation and oedema of the stomach lining [26] and are thus not beneficial for use in children. Studies in South Western Nigeria [17,27] report the indigenous methods used in the treatment of viral infections like measles, hepatitis, poliomyelitis, and chickenpox.

Implications of findings for health care of children: Socio-cultural beliefs and practices play a major role in healthcare. Indigenous practices are deeply rooted in the local culture and should be used as basis for health education and community health action. Clean cord care practices should be incorporated into health education and health action especially by traditional birth attendants, health care providers working in the community. Mothers and guardians should be taught that the use of traditional remedies should not stop them from seeking medical treatment for their sick children. Newborn, infants and children need to be protected in the community, where most of them are likely to be born, by creating interventions that consider the culture and traditions surrounding their birth and rearing practices. Results call for improved child care and prevention of morbidity/mortality in children under 5 in Nigeria. Health personnel working in the field of infant care should evaluate the traditional characteristics of behaviour in the locations where they work and put interventions in place to correct negative behaviours while encouraging beneficial ones.

CONCLUSION

Several common indigenous child care practices exist in the Niger Delta region of Nigeria. While some of these have the capacity to put the child at health risk and have negative effects on child health and development, others have no obvious ill effects. These practices have implications for health education by nurses involved in maternal and child care. Other practices however have positive outcomes and should be encouraged. The need for culturally-relevant and culturally-sensitive health education is recommended.

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