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THE MARIANNA MCJIMSEY AWARD

Professional Niche Differentiation: Understanding Dai (Traditional Midwife) Survival in Rural Rajasthan

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Prescribing medicine, providing contraception, delivering babies – although we may turn to physicians, rural Rajasthani women turn to Barefoot Doctors out of necessity. Such care is available courtesy of the Barefoot College, a pioneering NGO that transforms the skills of the illiterate poor into local infrastructure. Barefoot Doctors are innovative because of their origins as dais (traditional midwives); once abundant across South Asia, dais are mostly extinct due to government/NGO interventions emphasizing “modernity”, like the Accredited Social Health Activist program. Why, then, have dais survived as Barefoot Doctors when they are extinct elsewhere? Ecological niche differentiation refers to when competing species successfully coexist; one species adapts to fulfill another role. Using over fifty interviews with stakeholders, I explain the persistence of Barefoot Doctors as health resources using “professional niche differentiation”. Barefoot Doctors exemplify how health infrastructure can be sustainable in resource-poor settings when created according to local needs and ideologies.

Keywords: dai; Barefoot Doctor; midwifery; rural healthcare development; reproductive care

Introduction

Bhanwari-devi was illiterate, spoke a mix of Hindi and Marwari that I could barely understand, and, by North Indian standards, was quite old (she didn't remember her age and didn't particularly care to). And yet today I was to accompany her, the village *dai* (traditional midwife) and now “barefoot doctor”, on her daily rounds along the dusty streets of Kadampura Village. Making visits to pregnant women and veteran mothers alike, I watched Bhanwari-devi's heavy metal *karas*, the famous bracelets and anklets of rural Rajasthan, glimmer as she ambled along with the aid of her wooden staff. As we sought the house of her first patient, I wondered to myself how seriously Bhanwari-devi's medical services could be taken. After all, Bhanwari-devi had never been to school and had no opportunity to learn about the biology underlying reproduction or even basic germ theory. In terms of clinical significance, could she offer more than midwives' tales?

Dais, or traditional midwives, have been a major part of the rural birthing experience for as long as local people can remember. Mostly illiterate, dais have relied not on formal training, but on their decades of experiences as women—daughters, sisters, and most importantly, mothers and mothers-in-law—to serve as midwives for the women of their villages. Although dais like Bhanwari-devi were once common throughout South Asia, in much of rural India, the dai profession is dying due to a healthcare development movement that stresses the importance of “modernizing” infrastructure (Das 2015, 54–56; Ghoshal 2014). Discourse on medical effectiveness, safety, and evidence-based practice is a key driver of NGO and government attitudes on the position of dais; according to anthropologist Sara Price, such programs attempt to “re-train” dais, termed “Traditional Birth Attendants” by the government, in favor of formally trained or “Skilled Birth Attendants” (Price 2014, 519–522). Government interventions in rural areas of Rajasthan, India—the site of my fieldwork—are responsible for distancing dais from their traditional occupational roles and replacing them instead with ASHAs (Accredited Social Health Activists) and ANMs (Auxiliary Nurse Midwives) (Ashtekar 2008, 25). These government-affiliated health workers also have rural roots and are stationed at the village-level, with similar geographic access to local patients

as dais (Shyam et al. 2015, 71–72). As a result, the emotional cost-benefit for local women seeking reproductive healthcare is complicated; although they can benefit more quickly from government programs that provide free/low-cost medical care through ASHAs and ANMs (Mavalankar and Vora 2008, 9–12), rural mothers are robbed of their closest advocates and caregivers—the dais, who are arguably the most intimately connected with a village's social networks. The Janani Suraksha Yojana (JSY) government scheme has also contributed to the growing obsolescence of dais by financially incentivizing rural women to give birth in hospitals instead of at home under the care of a dai. JSY's intention is to remove the birthing experience from an “unskilled” and “dangerous” setting to one that should guarantee improved health outcomes (Gupta et al. 2011, 6–10). Although a dai is allowed to accompany the laboring woman to the closest hospital, many times, that moral support is replaced with the ASHA's, who receive payment from the government for performing this task. The dai can accompany the woman at her own expense or stay behind in the village. This movement towards a “modern” healthcare system not only creates a hegemony in which healthcare models built on formal credentials undermine local health infrastructure centered on practical and cultural experience, but also relegates dais to a passive role during the birthing experience and risks the extinction of an already marginalized profession (Ghoshal 2016, 27).

Dais affiliated with Barefoot College, an NGO based in rural Rajasthan, however, have been remarkably well-integrated into the NGO's health program and are even referred to as “barefoot doctors” by administrators. Pioneered in the early 1970s by Bunker Roy, the Barefoot College builds on existing village interests to equip communities with low literacy and formal education rates with the technical skills needed to create infrastructure that improves access to clean water, reliable energy, equitable education, and healthcare (Roy and Harrigan 2008, 67–69). Commended internationally for its model of sustainable development and for the emphasis the NGO places on village members identifying the projects they'd like to bring to fruition, the Barefoot College has allowed me to observe firsthand the work of “barefoot” pathologists, pharmacists, dentists, and doctors—all of whom are illiterate.

With the NGO's assistance, I conducted fieldwork and ethnographic interviews with over fifty dais, Barefoot College administrators, government health personnel, and local families in six weeks following my sophomore year of college to investigate what made the "barefoot model" so innovative and successful in its incorporation of dais, not only with regards to dai survival, but also in terms of local healthcare quality.

To understand the survival of dais in this region and examine their professional trajectory, I have constructed an analytical framework based on the ecological concept of niche differentiation. In its most simplistic form, when there are competing species in an environment, one of two outcomes may result: either one species will out-compete the other and cause its eventual end, or both species can adapt by specializing their roles in the environment. This latter path ultimately allows both groups to co-exist, preventing one species from dominating the other (Hardin 1960, 1292–1293). In my case study of Barefoot College-affiliated dais in rural Rajasthan, I draw on this framework to investigate why local dais have survived despite government interventions that distance them from their occupational domain, and how successfully dais have navigated the process of professional niche differentiation to increase local health outcomes. This case study is an important example of how large-scale development programs can promote effective and culturally appropriate health infrastructure in resource-poor settings, and ultimately improve reproductive health outcomes.

Background

In Rajasthan, one of India's 29 states, the maternal mortality rate is alarmingly high, with 254 deaths per 1 million live births. As a standard for comparison, the same rate is 4–20 deaths per 1 million live births for developed nations (Himani and Nautiyal 2010). Birthing is a laborious process for all parties involved and is an especially integral part of efforts to reduce maternal and infant mortalities. Many women I interviewed reported becoming first-time mothers in their teens, often by seventeen or eighteen, consistent with recent Rajasthan data suggesting that a third of rural women first become pregnant between ages fifteen and nineteen ("Annual Health Survey Bulletin" 2011–2012). It is important to note that this is a much later attainment of motherhood than would have been reported several decades prior to the

success of Barefoot College's and other government initiatives targeting education and maternal care; older generations of women I spoke with reported first pregnancies by ages fourteen and fifteen, although these were often unsuccessful. The rise of literacy in rural Rajasthan, though still a challenge, has likely also contributed to the delay in pregnancies; the female effective literacy rate in Rajasthan, at 54.5%, lags behind its national counterpart at 65.5%, but is still a significant increase from the dismal rate of 43.1% ten years prior ("State of Literacy 2011 Census" 2011). Reproductive health issues in the area for women largely surround pregnancy and the post-pregnancy period, but also include anemia, menstrual problems, and white vaginal discharge suggestive of Reproductive Tract Infections (RTIs) (Desai and Patel 2011, 48–49).

The interplay of social determinants such as socioeconomic status and gender, among others, greatly influences both the access to and use of reproductive care (Sanneving et al. 2013). In rural areas, communities have historically attempted to address the resource-poor nature of their settings by creating functional health infrastructure of their own founded on a primary caregiver: the dai. Discourse around dais and their role in enabling motherhood in rural Indian communities frames dais as "traditional birth attendants" (TBAs), but this term is less accurate and arguably less empowering than "midwife" due to its implication of a passive role; in reality, dais serve in equal parts as affectionate grandmothers and gynecologists. For decades, they have served as midwives in the very thick of the rural birthing experience (Jeffrey and Jeffrey 1999).

The hierarchal and socioeconomic positions of dais vary across India; in many states, dais are low-caste older women, often *Dalits* (Untouchables) due to the "impure" nature of their work, which places them in close contact with bodily fluids and a general state of female bodily disgrace (Kirkham 2007). However, in Barefoot College-affiliated parts of rural Rajasthan, I found that dais receive respect and appreciation by virtue of the constant need for their services. As one dai succinctly stated, "Children will always [of course] be born" (*Bachche toh hamesha pedahi huinge*.) Likewise, rather than belonging exclusively to poorer, lower castes, Barefoot College-affiliated dais hail from a variety of social and economic positions, with many belonging to higher castes. Initiation into Barefoot College's program enables

local dais to become “barefoot doctors” and paid employees of the NGO, although they are still referred to as dais in their communities. Under Dr. Ram, the program’s medical director, and Dr. Vikram, another NGO physician who sometimes visits, dais participate in brief seminars on pregnancy, birth, and the post-delivery period.

A thorough examination of the current roles of dais also warrants investigation into how the presence of government personnel has impacted their occupational domain, and whether relationships between NGO and government health workers are collaborative or friction-prone. Almost 70% of India’s population lives in rural areas (“Rural Urban Population Distribution 2011 Census” 2011); already constrained by poverty, gender inequity, and limited educational and employment opportunities, rural Indians are also limited by inadequate access to healthcare. In general, India suffers from a shortage of formal doctors, and this lack of human capital is exacerbated in rural areas (Rao et al. 2011, 592–595). In response, the national government has established a system of Primary Health Centers (PHCs) (Malik 2009) to provide crucial health services to the public at free or minimal costs, although the success of this health infrastructure is infamously limited by worker absenteeism (Iyengar et al. 2009, 303).

Affiliated with each PHC are several Auxiliary Nurse Midwives (ANMs). Chosen through a rigorous application process after ensuring the appropriate age and gender (women 25 to 45 years in age), potential ANMs undergo medical training for two years before assuming posts in rural areas, where they operate ANM health subcenters (Mavalankar and Vora 2008, 2–4). Courtesy of the National Rural Health Mission’s expansion of the program, as a salaried worker the ANM is the primary provider of clinical services such as immunizations, drug administration, and sometimes even the delivery of babies in rural areas; her subcenter is the only nearby clinical setting for many villages. The ANM’s literacy is crucial to her record-keeping, enabling her to record births, deaths, diseases, and other significant life events that she relays to the overseeing government-affiliated physician at the nearest PHC (Anantraman et al. 2002).

Subordinate to the ANM is the ASHA (Accredited Social Health Activist). Recognizing the need for public health engagement at the village level, India’s National Health Mission launched its ASHA program to ensure that communities participate in public health initiatives when prompted by women from their own

villages (Nirupam and Dholakia 2011, 3–5). The ASHA is meant to serve as the first point of contact for local women and children, diligently connecting them with the ANM and other healthcare services. Although the ASHA's role parallels the dai's with regards to health outreach and education, her literacy and government networks enable her to connect patients more easily to the formal healthcare system. However, the local populace is sometimes skeptical of an ASHA's motivations since she is often a young woman whose pay is based on the volume of referrals she makes. In contrast, Barefoot College-affiliated dais are often well-integrated into their communities, and because they receive a comparatively meager salary, warrant little suspicion from local women. Since trust seems to play such a vital role in reproductive care for rural women, in the following sections I will explore the professional niche differentiation of dais with regard to how they are perceived by community stakeholders.

Interactions with Government Health Workers—Support or Competition?

Keeping in mind that in many regions of India, the rise of ASHAs and ANMs has helped to eliminate the dai profession (Sadgopal 2009, 25–59), I conducted field visits to examine the nature of interactions between the government and NGO healthcare–model providers. My first visit to the village of Hamda provided the clearest insight as to how some ASHAs perceived Barefoot College's dais:

Yes, the dai also does what we do. . . [when asked what the differences were between ASHAs and dais]. . . look sister, [the dai] is so old, until where will she walk? It's good that she has knowledge from Barefoot College. But I know how to read. So it's up to the [pregnant] girl—who knows? (*Haan, voh [dai-ma] bhi karte jo hum bhi karte hai. . . dekhiye bhen-a, voh tho boodhi hai, kahan chalegi vho? Sanstha se jaankari hai, achi baat hai. Lekin mujhe tho parne aata hai. Tho ladki ki marzi, kisko patha?*)

Twenty-four-year-old Mansi had been an ASHA for two years, and although their job descriptions overlapped, Mansi felt her literacy placed her above any competition with dais. To be fair, there were many villages I encountered which had either an

	Positive Perceptions	Negative Perceptions
Barefoot	Experts	Outdated
College's Dais	Affectionately termed "grandmothers" More "genuine" and less motivated by money (they are (under)paid through a monthly salary)	"Too old" for home visits/village rounds Not credible due to lack of formal medical knowledge/use of appropriate terminology, illiteracy
ASHAs	Formally trained by the government, thus credible Literate, good record-keepers Modern Younger, able to visit frequently	Selfish and conniving (volume- based payment by the government)

Table 1: Perceptions of local women regarding dais and ASHAs. Information was compiled through interviews with more than twenty patients.

ASHA or a dai, but not both—because the roles of both ASHAs and dais centered on health education and awareness-building, having both in a village was not perceived as necessary. However, dai and ASHA networks sometimes overlapped because both also served hamlets neighboring the villages under their domain. In these cases, whether a dai or ASHA was favored varied across localities, with women indicating their preferences based on the perceived expertise, soundness of education, and sincerity of both (**Table 1**). Expecting mothers were especially suspicious of ASHAs who “harassed” them about timely vaccinations, viewing them—and occasionally even vaccination programs—as money-making schemes: “She only wants money, why should we listen to her?” (*Usko tho sirf paise chahiye. Kyun sune?*)

Because an ASHA was only paid her monthly income of between 3,000–5,000 Indian rupees if she ensured that local women received vaccinations according to the provided schedule (**Table 2**), she had strong financial incentive to insist on ANM visits as frequently as possible. In contrast, Barefoot College's dais, who received a relatively paltry monthly salary of Rs. 600, struck many as more courteous and genuine.

Despite these reported conflicts, my interviews also included narratives that stressed collaboration and mutual respect between the government-health-worker

Time	Vaccination/Shot
Birth	BCG Hepatitis B Birth Dose Polio Dose 0
1.5 months	Penta Dose 1 Polio Dose 1
2.5 months	Penta Dose 2 Polio Dose 2
3.5 months	Penta and Polio Dose 3
9 months	Measles Dose 1 Vitamin A
1.5 years	DPT Booster Polio Booster Measles Dose 2 Vitamin A Dose 2
5 years	DPT Booster Dose 2 Polio Booster Dose 2 Vitamin A Booster
10 years	TT 1
16 years	TT 2

Table 2: Timeline of vaccinations performed by ANMs for infants at and post-birth. Information was compiled through interviews at the government-run Harmada Primary Health Centre.

system and Barefoot College's dai program. Although much of this paper focuses on NGO and government moves to distance dais from the birthing experience, surprisingly enough, the most obvious appreciation for dai expertise was from ANMs when dais were retained in the clinical setting. The following is a description of my visit to the Burjispura ANM subcenter immediately after a 21-year-old's successful delivery:

The ANM subcenter consists of a small waiting room, an office, and a medical room with one metal bed. The medical room has been converted to a delivery room and the new mother, Seema, lies resting away from the half-moon indentation in the bed meant for vaginal examinations and facilitating birth. She

looks exhausted, having given birth a mere five minutes ago, and the dai wipes down her face and gently covers her partially naked body while talking with me about her vitals. The dai checks the IV solution hanging on a nearby stand to ensure that it is still properly connected to Sita's arm, cleans the newborn, and brusquely begins washing the blood-stained mats in the room. Meanwhile, she reminds the ANM, who is standing next to me and explaining Sita's medical history, that it is time to check the newborn's weight and do a preliminary checkup of mother and baby to make sure they have survived birth in optimal health. The ANM thanks her for the reminder and pauses chatting with me to assist the dai. . . The birth is successful, with both mother and baby stable.

A hierarchy favoring the ANM was evident in this instance—the dai, who earlier advised me to think of her as the ANM's assistant, deferred to the ANM's instructions—but also negotiable with regards to clinical expertise. Although the dai began to clean the new mother, baby, and birthing room, her role was more expansive than just handling the "pollution" surrounding birth; it also included opportunity for clinical input. The dai was not only entrusted with greater contact time with the patient, but collaborated with the ANM to provide care. This ANM was particularly appreciative of the dai's assistance in deliveries, attributing her clinical prowess to her years of experience. Although I didn't witness additional deliveries during my fieldwork, other ANMs and dais I interviewed expressed mutual appreciation for one another with regard to the birthing experience, especially in areas like Barawara, where access to larger health facilities is rare.

The birthing room is the major link between dais and their original purpose, and the first bond to be broken as healthcare "modernizes". Although "modern" healthcare distances dais from the birthing room, the survival of Barefoot College-affiliated dais is likely due to their productive collaboration with ANMs in even this clinical setting. Furthermore, that many women distrust ASHAs and favor dais indicates that government personnel simply cannot occupy the cultural niche fulfilled by Barefoot College-affiliated dais.

Dais as Health Educators

Bhanwari-devi taught me that there was more to a dai than delivering babies—birth was important, but so too were the prior months, especially with regards to preventative care. Walking through Kadampura Village with Bhanwari-devi, I learned that a dai's intensive care spanned almost a year; upon suspecting a pregnancy, women wait for about a month after their first missed period, and only then reach out to their mothers-in-law and local dais. From this point, Bhanwari-devi told me, it was crucial to prevent pregnancy complications by carefully advising proper diet and lifestyle adjustments, and of course, reminding women to be vaccinated in a timely manner. Our visit to Seema in her second trimester exemplified the dai's importance in educating local women—and not only with regard to maternal care, I learned.

Once we arrived at the house's entrance, Bhanwari-devi pried open the metal gate with the ease of someone long familiar with the home and pulled me inside, calling out to Seema and her mother-in-law. In Rajasthan, as in many parts of India, a typical household features an older couple, their adult sons and spouses, and grandchildren; social relations and kinship structure are built on patrilineally related groups in which male relatives dominate the decision-making process over their wives, as do mothers-in-law over their daughters-in-law (Dyson and Moore 1983). An older woman herself, the dai is additionally trusted when she cares for local women by visiting them in the comfort and privacy of their homes. Such familiarity not only enhances trust between dai and patient, but also allows the dai to engage with the woman's mother-in-law, the second most important stakeholder in such visits after the patient herself. Many women in rural Rajasthan labor daily in the fields out of necessity, even well into their pregnancy; the complications that arise in pregnancy, labor, or the post-delivery period stem from related factors that on the surface are avoidable. Fortunately, Bhanwari-devi was acutely aware of such concerns, and did well to counsel Seema and her mother-in-law on the importance of a good, thorough diet and relatively less-stressful lifestyle. While still playing the part of an affectionate, concerned grandmother, as a dai often

does, Bhanwari-devi's conversation grew more clinical in nature, as her training as a barefoot doctor enabled.

I asked Seema and her mother-in-law about *tikakarn*, or vaccinations; the government had subsidized and mandated a host of vaccines for each woman and her infant in order to reduce disease prevalence through the help of rural health workers (Datar et al. 2007). Although Bhanwari-devi could not read the vaccination schedule that was released by the government, she had ensured that Seema was up to date with her TT shots and at least aware that folic acid and iron tablets were available through the government. These were meant to combat the severe anemia in the region, and by extension prevent adverse outcomes for mother and/or baby (Gautam et al. 2008, 283). In general, the experiences differed from a typical doctor's check-up in the United States in terms of the actors, setting, and emphasis. Initial conversation patterns were circumlocutory and conducted at home to respect the privacy of the pregnant woman and her family, to prevent embarrassment, and to provide comfort. Gradually, talk became more specific and clinical, although appropriate medical knowledge was still communicated in ways that were accessible to the primary stakeholders: pregnant women.

Interestingly, I learned that interactions with the dai often began well before pregnancy, with some as early as menarche (the first occurrence of menstruation), which marks the transition from "girl" to "woman". In many cases, the changing domestic and societal expectations accompanying such an evolution also mean less access to education, healthcare, and better livelihoods (Singh 2006, 10). In parts of Rajasthan, the use of old fabric as menstrual cloths is quite common—both due to the high cost of sanitary napkins and also strong cultural rules that mandate keeping any sign of menstruation private (Rajesh, Shobha, and Gupta 2012, 767–770). Rags used by some local women carry with them a high risk of infection, as they are difficult to clean given the scarcity of water and taboos that prevent women from drying their menstrual cloths outside "for the world to see" (Garg, Goyal, and Gupta 2012). In fact, during one of my site visits for Barefoot College, a woman even reported having used sewage water to clean her menstrual cloths—although

uncommon, her case was an obvious health disaster in the making. Fortunately, “The dai has achieved understanding [about the topic]. She tells both adolescent girls and grown women about sanitary napkin use”. (*Dai ko tho samaj aagayi hai. Voh toh kishori ladki aur mahila koh bathathi hai sanitary napkins ke bareme.*)

According to Barefoot College’s Dr. Ram, dais deserve significant credit for improving local menstrual practices, which are major contributors to reproductive infections in the region. Most pregnant women I interviewed had been consistently using pads, or if they had used menstrual cloths, cleaned them under the dai’s guidance. The improved health and social implications are obvious; the increased availability of and knowledge about pads (due to government subsidies and the NGO’s menstrual hygiene campaign) has also helped to ensure that girls experience fewer interruptions in their schooling, and women in their chores. Although other actors, such as teachers and ASHAs and ANMs, also perform outreach on menstruation, the dais have been most effective in engaging women involved with *kethi-badi* (field labor), whose rigorous work leaves them vulnerable to complicated reproductive issues and pregnancies. Poorer, illiterate, and more isolated, these women only adopted healthier behaviors upon the recommendation of dais. Kavita, a field laborer I interviewed, told me that when the dai had first taught her to use pads, she didn’t like how uncomfortable they were, but gradually accepted their importance. Sometimes, she told me, she used menstrual cloths because she couldn’t afford even the subsidized pads, but was careful to clean them with the rigor the dai had prescribed. My interview with Kavita and women like her reinforced my findings that dais succeed where ASHAs and ANMs cannot; as older women, dais are “more trustworthy” than their younger ASHA counterparts and therefore crucial to increasing health awareness.

Professional Niche Differentiation: Dais as Care Coordinators

Despite the positive impacts dais have on local women, many interviewees implied that, like elsewhere, dais would eventually become obsolete as a result of the Janani Suraksha Yojana (JSY) government scheme, which pays women to give birth

in hospitals instead of at home with a dai. Kusum, a health supervisor at one of Barefoot College's Field Centers, narrated how dai survival depended on the NGO: "I understand them, as if I'm their daughter. They are old, what will the poor things do? Yes, they do good work, but they also worry [about their jobs]. I reassure them—no worries." (*Mein unko samajthi hoon, unki beti ki thara. Voh budhe hai, kya karinge bichare? Voh kaam tho karthe hain lekin pareshaan bi hote hai. Mein samjhathi hoon, koi fikr nahin.*)

In Rajasthan, children and husbands are vital in old age. Because they are elderly, widows, and often do not have children who are close to them or financially successful enough to support them, dais are vulnerable members of society. Barefoot College provides dais with a small but stable income, and enables them to continue contributing to a village's socioeconomic networks. Dais depend on NGOs to continue their tradition of connecting women across generations, ultimately allowing them to foster a sub-community based on the experience of motherhood in rural Rajasthan. The role of dais as midwives was less contested in Kusum's Field Center, which is more isolated than many others. Although transportation to the nearest hospital is available through the Janani Suraksha Yojana scheme, the journey is arduous, and thus unattractive to women soon to undergo labor, Kusum pointed out. "The dai still has work to do. It's difficult to travel in these parts. How will [a woman] give birth? Here [not at the hospital]. These are health matters, and health work will always be present [referring to the continuing need of dais]." (*Dai ka kaam phir bhi hai. Yahan tho aana-jaana mushkil. Bacha paida karegi [mahila] kaise? Yahan pe. Voh toh health ka kaam hai or health tho hamesha rahega.*)

As the principal actors of their story, dais were cognizant of their evolving roles, and surprisingly satisfied with the development-modernity movement that had been undermining their presence during labor. As part of my work with Barefoot College, I compiled data on local health indicators and found that in the past five years alone, maternal and infant mortality rates had drastically fallen, likely due to the increased access to healthcare. Dais were unsurprised—they felt that their contribution lay in the extensive education and outreach they had done, a less hands-on process, but still very rewarding.

To explain the survival of Barefoot College's dais despite occupational overlap with local ASHAs, I frame professional niche differentiation in the context of care

coordination. International recommendations increasingly emphasize the importance of care coordination in ensuring healthcare quality and access. In theory, a primary health worker should be able to recognize needs that are outside of her capacity to address, and refer patients to more knowledgeable personnel in succession until the concern is addressed (Gupta and Gupta 2008, 6–15). The primary actors in Barefoot College's referral system are dais, the first point of contact for local women. Since dais serve as health educators and as advocates, they are in an optimal position to make "referrals" to the nearest lab facility, ANM subcenter, or even government hospital, depending on the needs of their patients. The knowledge and power differential between local women and formally trained health personnel causes considerable confusion with regard to how successfully patient needs can be met; ideally, the dai serves as a medium between both, with enough medical knowledge to recognize when complications in either the mother or baby are outside of her expertise, and enough colloquial understanding to provide comfort to expecting mothers. As Gauri-devi, a local dai, put it, "When there's a breech presentation (the baby is upside-down) or the womb 'moves' . . . we don't handle these cases. We take them to the doctor". (*Jab breech hoti hai ya konk hilthi hai. . . nahi karte hai. Doctor ke paas lekejaate hain.*)

Dais also understand the importance of coordinating care in accordance with logistical issues; because they are illiterate, they cannot complete birth, vaccination, and illness records on behalf of patients. Surprisingly, the dai's referral system also includes ASHAs, who are required to be literate. Because their government post expands their networks and contacts, ASHAs can set in motion a payment model for mothers looking to benefit from the Janani Suraksha Yojana scheme. A dai, because of her affiliation with Barefoot College, though a highly respected NGO, does not belong to the same organizational hierarchy that enables her to effect economic change on behalf of her patients. Consequently, she makes it a point to connect local mothers with government health workers to ensure cash and security. This implies that although ASHAs are supposed to serve as the first line of available health resources, dais often precede them; with regard to professional niche differentiation, dais cannot be "outcompeted" because of their importance for effective referrals.

Conclusion

Previous literature has established that the demise of the dai profession in much of India is due to government interventions such as ASHAs, ANMs, and the Janani Suraksha Yojana scheme. Despite significant occupational overlap between dais and ASHAs, Barefoot College–affiliated dais have successfully differentiated their professional niches, enabling their survival. My interviews suggest that interactions between government health workers and Barefoot College–affiliated dais are actually collaborative, disproving the notion that dais compromise medical efficiency. Rather than despair over the loss of their role in the birthing room, dais regard their subsequent professional trajectory with ambivalence, and are content to increase positive health outcomes among local women in other ways. Because they are closely tied to the traditional history of their communities and occupy positions that warrant trust and respect within the socioeconomic networks of their villages, dais have been able to serve vital roles as health educators and care coordinators more successfully than ASHAs and ANMs, who simply cannot attain the same cultural significance. Ultimately, the partnership between government and the Barefoot College–affiliated health infrastructure, a product of professional niche differentiation, effectively links local mothers with appropriate healthcare. This case study carries important lessons for government and NGO agencies seeking to increase health outcomes in resource-poor settings. The “barefoot” model is innovative because its foundations are old; thus, large-scale programs can enhance reproductive care by realizing the immense clinical and cultural importance of dais to rural landscapes.

Competing Interests

The author has no competing interests to declare.

Author Information

Sharmeen Azher studies Biology and Anthropology at Union College and is also an MBA candidate at Clarkson University's Capital Region Campus. Passionate about disease and healthcare management in resource-poor settings, Sharmeen will start

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