

The UNESCO Highland Peoples Surveys: Tracing Inequalities in Health Care Access and Provision in Northern Thailand

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ABSTRACT

Thailand's public health system is lauded globally for its broad access and coverage. However, significant gaps in health outcomes persist for diverse highland Indigenous and ethnic minority communities that have historically resided along the country's northern and northwestern border region. Yet, Thailand's census data do not tabulate ethnicity, and therefore preclude assessments of health barriers and progress among ethnic minority groups anywhere in the country. Moreover, state surveys of highlanders, often undertaken for surveillance purposes in the mid-to-late 20th century, never included measures of health, educational attainment, wealth, or other indices of inequality. Beginning in 2005, UNESCO undertook a sequential, mixed-methodological research program in the highlands to assess progress and barriers in citizenship acquisition and inequalities related thereto. In the Highland Peoples Survey (HPS) I, more than 60,000 people in nearly 200 villages in 3 provinces were surveyed, and in the HPS II, more than 70,000 people representing 18 ethnic groups in over 300 villages in 5 provinces were surveyed. In addition to providing a detailed overview of the unique utility of the UNESCO Highland Peoples Surveys for ascertaining complex dynamics of ethnicity, legal status, wealth, and health care availability for highlanders, this article presents a broad exploration of health access detected in the 2010 survey, and thus provides a baseline of health inequalities among highlanders from which future comparative analyses may be drawn.

Keywords: *Indigenous health, Ethnic minority health, Legal Status, Wealth, Health Disparities, Thailand*

Introduction

Thailand's public health system is lauded globally for its broad access and coverage. However, for Indigenous and ethnic minority communities who have historically resided in the country's north and northwest border regions, significant gaps persist in health outcomes, health services availability, and health care access. Many studies indicate that highlanders suffer from poor health outcomes [1-4], reduced or poor access to public health information and services [5, 6], and generally low quality of care in highland clinics [e.g., [6-9]], but small sample sizes preclude comparisons between highlanders and Thais, or between highlander groups themselves. In addition, long-standing state policies of neglect, discrimination, and exclusion of highlanders, particularly from Thai

citizenship, are likely contributing to both continuing and new forms of health inequalities associated with legal status [10-16]. Indeed, even though the state officially extends health care to non-citizens, statelessness is associated with migration and education inequalities, which can therefore structure intergenerational inequalities that may contribute to poor health outcomes at individual and household levels, in particular [17]. Furthermore, concerns regarding geographical proximity to health care services, and quality of care in health facilities--including discriminatory attitudes toward highlanders--persist [18], potentially exacerbating unequal outcomes both within- and between- communities.

Each of these studies points to potentially significant challenges to Thailand's progress in health

care provision. However, no large-scale assessment of the extent of barriers to and progress in health care provision and access for highlanders exists because Thailand's census data do not tabulate ethnicity or legal status. Moreover, state surveys of highlanders, often undertaken for surveillance purposes in the mid-to-late 20th century, have not included measures of health, educational attainment, wealth, or other indices of inequality. To this end, tracing the extent of health care inequities in the highlands is critically needed.

The UNESCO Highland Peoples' Surveys (HPS I and II) are the only village censuses of highland communities designed to collect a wide range of information about ethnicity, legal status, household assets and land, access to education, and basic health services access and availability, as well as inequalities related thereto. The governing methodology of the UNESCO highland project dictated that surveys be developed based upon rounds of intensive ethnographic research. Carried out in partnership with the Royal Thai Government's Bureau of Social Development and Human Security (BSD) first in 2005-2006, the initial wave of the UNESCO HPS covered over 60,000 people in 192 villages in Mae Hong Son, Chiang Mai and Chiang Rai provinces.^{1/} Questionnaires focused primarily on individual-level data, which could be aggregated to understand patterns at household and village levels. Findings from the first round of the survey, coupled with follow-up interviews and more rounds of ethnographic engagement, revealed that significant patterns of inequality in access to education and health services were emerging along lines of legal status and ethnicity in border communities [18-20]. At the same time, however, measures of legal status were not sufficiently elaborated, and gaps in information regarding village- and household-level context precluded robust analysis of barriers to citizenship, schooling, and health care. Therefore, in 2010, UNESCO and the BSD embarked on a larger study of statelessness, which covered 71,000 people representing 18 ethno-linguistic groups across 292 villages along the international border in Chiang Rai, Chiang Mai, Mae Hong Son, Tak and Kanchanaburi provinces. To account for the diverse contexts in which individuals attempt to acquire recognition of citizenship, the HPS II also included village and household modules, as well as modules for village schools and the teachers who staff them. In the sections that follow, we provide a detailed overview of the methodologies that informed these surveys and an analysis of health inequities detected in the HPS II related to ethnicity, legal status and geographical factors.

Overview of UNESCO highland people's surveys Sampling frames

For the HPS I (2006), border villages in Chiang Mai, Chiang Rai, and Mae Hong Son provinces were selected by the BSD as part of the agency's semi-regular assessment of well-being in highlander communities. Of its official roster of 3,881 "hill tribe" villages located across 20 provinces (see [21]) the state limited the study to border communities in the three northernmost provinces where highlanders constitute the largest proportion of the total population. In the HPS II (2010), the roster was extended to border villages in Tak and Kanchanaburi provinces as well. The BSD's definition of "border village" is any community where villagers reside or farm within 20 kilometers from the international border. For security purposes, only villages located outside of military zones were included to ensure the safety of both BSD staff and village residents. Finally, by a purposive survey of the border, rather than a random sample of all highland villages, ensured the inclusion of numerically very small groups like Mlabri and H'tin, who would have been excluded in a random sample of the same size.

In both HPS rounds, Chiang Mai, Chiang Rai, and Mae Hong Son provinces, every household that opted to participate was interviewed. Village participation rates varied between 94% and 99%, because 1) villagers collectively elected to participate during community meetings about human subjects concerns (see below), and 2) villagers understood the critical need to understand barriers to legal status, in particular. Households that did not provide data were largely unavailable due to extended travel or work outside of the community and could not be reached. In Tak and Kanchanaburi provinces (HPS II, only) 25% of households were randomly selected for interviews, although participation rates of selected households were similarly high. Indeed, in all villages for which detailed reports exist, BSD staff had to decline to interview at least one household that had not been selected (for more details, see [22]).

Data collection: validity, reliability, and ethics

Due to the scope, detail, and focus of both HPS instruments, ensuring robust and ethical data collection efforts among the vast and extremely diverse highland population on sensitive topics requires implementation by a uniquely capable government partner known to villagers. For this reason, the Bureau of Social Development and Human Security (BSD)^{2/} was the implementing agency for both HPS rounds. As the state agency mandated with accounting for and distributing various welfare and disability payments, the BSD carried out a general survey of village needs in 1997, and then partnered with UNESCO for HPS I and HPS II.

^{1/} The HPS initiatives were part of the UNESCO Highland Birth and Citizenship Registration Promotion Project, undertaken by the regional UNESCO HIV/AIDS and Trafficking Program, and first piloted in 2001.

Like all government bureaucracies, the BSD is organized hierarchically, with primary authority housed in provincial offices and a central Bangkok office. However, staff in district offices are generally hired from communities located within the office's jurisdiction. As such, implementing staff of the HPS spoke at least one of the main languages spoken by local communities in addition to Central Thai and Kam Muang (Northern Thai), a language that is widely spoken and understood by villagers in the area [22]. After pilot-testing the survey instrument in Thai, Northern Thai, Akha, Lahu, Lisu, and Hmong, all BSD staff were provided training on research procedures in a two-day workshop, which covered multiple practice sessions, ethics protocols, issues of multilingual translation, security and confidentiality concerns, and instrument protection.

Regarding on-site research permissions and ethics protocols, each research team hosted at least one village-wide meeting to explain the purpose of the survey, to encourage villagers to ask questions and voice concerns, and to ensure that villagers understood their rights to not participate. Prior to initiating each survey, respondents were informed again of their rights to refuse to answer any question, or to withdraw from the survey at any time. To signify consent, villagers provided a fingerprint, followed by that of the surveyor, which is common practice in the region.

In partnership with village leaders, survey staff determined appropriate schedules for household interviews, as timing of residence and availability vary across and within families and communities by farming season and primary livelihood. Some village surveys were therefore completed over the course of several days in a single visit, whereas in other communities, staff interviewed households over the course of several visits. Regardless of timing, the vast majority of interviews were undertaken in the evening, after the workday had ended. Because village electrification was highly varied, interviews were done by candlelight in more than 30 villages (approximately 5,000 households). UNESCO and BSD officers monitored enumerators in the field in each province, provided support, and checked instruments regularly to ensure data accuracy. On the basis of common requests for clarification, a second handbook was developed for on-site data verification to be implemented prior to leaving field-sites (see [23] for further information).

Data entry process, data quality and confidentiality

For data entry and data cleaning, Data Entry Program, Microsoft Access, and SPSS were used. All data entry processes were closely supervised and directed by lead researchers and statisticians. To undertake data entry and coding, 20 workstations were assigned at ABAC Poll, and three stations were used for data verification. To ensure data security, only trained, authorized staff with verified passcodes could access the office and workstations. After all data were entered and checked, the data were de-identified and survey instruments were shredded. Currently, data are stored in Excel, SPSS, SASS, STATA, and R formats in a cloud that is accessible to authorized persons via multiple authentication.

Measuring inequalities in the highland context

The HPS II constitutes a more refined instrument than the HPS I for measuring health access and outcomes, as well as for assessing these outcomes in relation to legal status and household wealth. Therefore, we limit the following description of measures and definitions to the HPS II. When available, we note comparative possibilities with the HPS I. Although the following overview does not constitute a complete review of all variables generated in the HPS II, we outline in detail those variables pertinent to health outcomes and health care access, as well as the complex, interrelated factors that are driving inequalities within and between highlander communities.

Health care access and availability

HPS health measures focused on aspects of healthcare availability, access, use, and attitudes that could be reliably measured in a population-based survey of its size and scope. Of particular interest was how well the Thai government's rural primary health care delivery system reached highland villages and the extent to which access or use varied by province, ethnic group, and legal status. Thus, questions focused on relative access to, and quality of, local primary healthcare at the village and household level based on the existing rural public health care infrastructure. At the time of the HPS II data collection, rural villages were expected to have road access to a nearby sub-district health center staffed with a trained health practitioner (doctor or nurse). Health practitioners based at sub-district health centers--later converted to Subdistrict Health Promoting Hospitals--typically trained village health volunteers (VHVs) from each registered village in community-based preventive health care, e.g., regular at-home visits, diabetes and hypertension screenings, and education on disease prevention [23-24]. cover more background on the historical development of Thailand's rural primary health care system, yet the HPS remains the only

²The Royal Thai Government only began to formalize policy toward highlanders in 1959 with the formation of the Hill Tribe Committee; however, it was not until the establishment of the Tribal Research Center (later, Institute) in 1964 that there was a Thai institution dedicated to research in the highlands (11). The Hill Tribe Committee became the Hill Tribe Development and Welfare Programme of the Department of Public Welfare, which, after many years, was amalgamated with other welfare programs as the Bureau of Social Development and Human Security (BSD) under the Department of Social Development and Welfare of the Ministry of Social Development and Human Security.

survey to extensively measure coverage in the border highland region of northern and northwestern Thailand.

Questions focused on accessibility of primary healthcare services included multiple measures of availability of care through a local VHV and distance to the nearest health care center, as reported by the village representative: (1) health care center in village; (2) time in minutes by motorcycle to nearest health care center; (3) presence of trained VHV; and (4) village road accessibility during rainy season. Among villages with a health care center and/or VHV, village representatives also reported whether each provided the following health services: vaccines, pre and postnatal care, family planning information and birth control, treatment for diarrhea, medicine distribution, and HIV/AIDS information. Additional questions were included to measure use of health services at different public health care facilities: (1) In the past year, when a family member was sick, they sought treatment at a government health clinic (yes/no); and (2) In the past year, when a family member was sick, they sought treatment at a government district hospital (yes/no). Finally, attitudes and concerns related to health care services and medical treatment were also measured, including eligibility for health care insurance coverage. Household representatives were asked about their greatest concern or worry when seeking medical treatment. Possible responses included: (1) Worried about high payment costs or time; (2) Do not have health insurance; and (3) Worried cannot communicate with staff. Finally, medical debt, an additional indicator of health service barriers and potential deterrence from obtaining continued services, was measured separately in the household module in relation to debt and household wealth. Ethnographic research, which informed the construction of both HPS I and II, indicated that families of mixed or no legal status can incur sizable debt to pay for medical bills (Ahlquist, fieldnotes). Jointly with legal status and the other social and structural determinants highlighted above, these measures cover multiple steps widely recognized as critical for delivering quality health care and eliminating related inequities, including service access, insurance coverage, and informed choice among patients [24].

Ethnicity

Ethnicity in mainland Southeast Asia, particularly in the highlands, is both dynamic and complex. It has been shown to be categorical, contextual, and even situational (e.g. [25-28]). This fluidity -- and the frequent conflation of ethnic categories with categories of nationality -- pose a key challenge for studying legal status in the highlands, as highlanders understand that national belonging is tied to claims to the ethnocentric Thai state. In pilot testing the survey, upwards of 5% of respondents in each ethnic subgroup asserted that they were Thai when asked. Conceptions of ethnic

categories (ethnicity) -- as understood by highlanders, as well as by the Thai State at any point in time -- are foundational for understanding all dynamics in the highlands and the structures of highland-lowland relations, and are vital in regard to health outcomes.

Given the challenges of reliably measuring ethnicity in the highland context, the HPS II incorporates a number of variables from which an ethnicity index was constructed. First and foremost, respondents could independently report each family member's ethnicity in the household roster, and these data could be checked against household level variables of 'primary language spoken at home,' 'secondary language spoken at home,' and similar variables at the village level. The overlap between these categories is nearly 1:1 for every ethnic group and could be reconciled by cleaning and cross-checking missing data. However, H'tin, Mlabri, Tongsu, Burmese, and Mon categories varied considerably by individual reporting and language spoken at home. Nearly twice the number of Burmese and Mon people live in households where their language is not spoken than those that do (analysis not shown). Inversely, far fewer people identify as H'tin, Mlabri and Tongsu than those who speak it as a primary language. After reconciling missing data across these subgroups and variables, Figure 1 represents the ethnic distribution of the HPS II. Because of the extraordinary diversity of the sample, only Lahu, Karen, Akha, Hmong, Lisu, and Mien groups are included in the analyses of ethnicity and health outcomes that follow. Ethnic Thais who reside in the highlands are also included to provide a useful comparison group against which highlanders are compared.

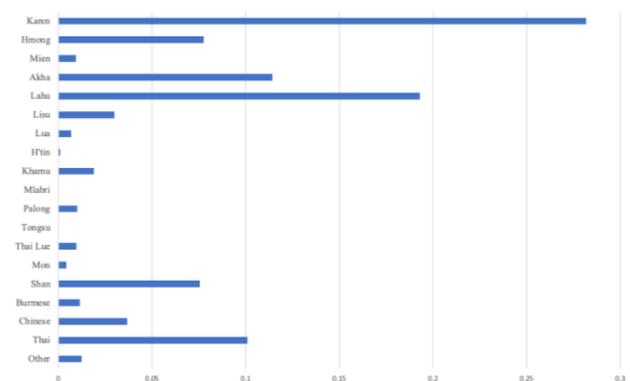


Figure 1 Ethnic distribution of UNESCO HPS II sample

Legal status

Over the past thirty years, legal status has become a critically important and complicated issue for highlanders. Over the course of the early 20th century, as the Thai state increasingly registered its lowland populations, highlanders were variously excluded from this process, often despite documented residence in the

country for centuries [11, 13, 17, 18, 29-32]. Without citizenship, highlanders are considered ‘aliens,’ (*khon dtangtao*), and are regularly denied the basic rights and protections afforded to Thai citizens; And, as a consequence, they are especially vulnerable to socio-economic insecurity, exploitation, and deprivations in access to health, education, and other public services.

A growing literature is examining how legal status is shaping health outcomes in diverse contexts around the world. However, most of this literature derives from research among immigrant communities, and particularly those residing in the Global North. Yet, as the case of highlanders in Thailand reveals, states can deprive non-immigrant populations of recognition of citizenship as well. Indeed, egregious cases of deprivation of status and denationalization among non-immigrant communities persist globally [33], yet the very reasons for these dispossessions (e.g., ethnic and religious discrimination, resource grabbing, etc.) constitute barriers to conducting surveys of affected groups in safe and ethical ways. In other words, states that ‘erase’ populations by refusing to recognize their status and/or residence are often unwilling to permit large population surveys that make legible both the erased population and the reasons for their dispossession. Indeed, the first major Thai national census in 1956 did not even include highland areas [13]. Concerned with security, Thai state conducted several (often incomplete and inaccurate) censuses of highlanders between 1969 and 1999, with the express purpose of registering them as non-citizen ‘aliens’, thus refusing recognition of their claims to citizenship. And yet as a part of this politics of exclusion, the Thai state never conducted systematic surveys of the highland population that could reveal why and how statelessness persisted among highlanders. While there was certainly recognition of the complexity of the legal status of highland people before the start of the millennium, it was not until the UNESCO HPS I was initiated in 2005 that there was a systematic attempt to measure the scale, extent, and impact of the problem.

In addition to barriers to conducting studies of legal status among marginalized populations, legal status itself is a highly complex and dynamic phenomenon, making it extremely difficult to measure. To produce a survey instrument that can reliably measure legal status, a robust assessment of nationality laws and bureaucratic procedures for adjudicating status is required, as is a thorough analysis of how communities understand laws and navigate these procedures. In the Thai context, the Thai ID card (*baht bprachaachon*) should be issued to every citizen at the age of 15 and to all persons over 15 who naturalize. Citizenship is predicated on 1) biological birth to at least one parent with Thai citizenship; and/or 2) proven birth on Thai soil before February 26, 1992; and/or 3) registered residence (at least 10 years) in a registered household in Thailand. Marriage and adoption are also

pathways for naturalization with varied and changing requirements. Denationalization in Thailand is extremely rare, but has occurred in the highland context when people are accused of ‘cheating’ to receive recognition [31]. Therefore, citizen status at any given moment cannot be assumed as indefinitely fixed.

Non-citizen status in the highlands of Thailand is extremely complex as well. From the 1960s forward, the state issued more than 20 different non-citizen IDs, which have been of various size, color, and material. Each ID ostensibly references a particular category of non-citizen (e.g. “refugee,” “alien,” “migrant worker”) to whom particular rights and restrictions apply. The “hill tribe” coin and IDs confer non-citizen resident status to Lua, Karen, Lahu, Hmong, Akha, Khamu, Lisu, and H’tin people, with particular rights to apply for nationality. Yet, because the Thai state never fully understood or accessed highlander communities, and because highlander communities often misunderstood and distrusted state registration processes [29], it is not unusual for highlanders to be in possession of multiple ID cards, and for permanent residents to be registered as migrant workers. Therefore, non-citizen IDs should not be conflated with an essential ineligibility for Thai citizenship. Rather, these IDs reference the state’s varied, flawed, and incomplete attempts to assert knowledge of and power over highlanders. At the same time, they operate in a ‘real’ political economy of access and restriction, and therefore serve as a reliable index of what rights and privileges non-citizen ID holders and their children can and cannot claim at any given moment.

In addition to considering, one’s status at the moment of the survey, the HPS II accounts for household composition^{3/}, biological parentage, and birth registration status, as these factors directly inform one’s eligibility for citizenship. The HPS II also accounts for ancillary factors related to citizenship status, such as application history, challenges to citizenship applications, DNA testing, and educational attainment. Ultimately, as previous analysis of the HPS II has shown [17], 23% of individuals over 15 who lacked a Thai ID card at the time of the HPS II were nevertheless Thai citizens by law according to residence, birth, and/or parentage. Moreover, when awaiting resolution to their applications, both stateless and citizen highlanders had been subjected to wait times that far exceeded those designated in government policy.

In sum, while ID card possession is an imperfect indicator of one’s claims to a particular legal status, it nonetheless provides a reliable index of how its possessor experiences their assigned legal status in everyday life. Therefore, in the broad analyses of health outcomes that follow, those who are non-citizens (0) were compared against citizens (1). Individuals coded as citizens were confirmed as being

in possession of a citizen ID card, whereas those coded as non-citizens refer to people either in possession of a form of “alien” documentation or with no identification whatsoever.

Household wealth

Highlanders are widely regarded by Thais and foreign development organizations as universally impoverished. However, significant wealth disparities exist both between and within highland communities [34,16], and can inform health disparities in a variety of ways. Measuring wealth in highland communities is challenging, in part because conventional measures of wealth, such as salaries and land ownership, are of little use, as incomes tend to be generated through agriculture, informal wage labor, and irregular remittances. Furthermore, while de facto systems of land tenure operate within communities, and while access to land is often highly unequal, the state’s ongoing refusal to grant legal land title to highlanders complicates questions around land ownership and access [35-37]^{4/}. As such, the HPS sought to assess wealth disparities through a portfolio of assets, including, but not limited to, house/roof material, debt, land access, remittances, household assets (e.g. motorbikes, computers, mobile phones), and agriculture-related assets (e.g. livestock, farming equipment). The draft portfolio of assets was initially generated by drawing on the Demographic Health Surveys (<https://dhsprogram.com/>), which are conducted in agrarian communities around the world. The portfolio of assets was then tested, edited, and elaborated in the highland context through months of ethnographic engagement in highland communities.

³Household: In 2006, households were listed, and rosters generated according to the definition used by the Ministry of Interior in its household registration system (TR14/TR13). The household, in this case, consists of a place where more than 2 people, who might be children/relatives, who have a blood relationship together or people who are husband and wife according to legal and practical definition, live together (Translated from interview with Jirayut Banyajai, 2010). This definition was used to generate a household roster in UNESCO HPS I (2006) and in 2010, every willing and available household was selected for re-interview in Chiang Mai, Chiang Rai and Mae Hong Son.

For the second wave of the UNESCO Highland Peoples’ Survey, a wider definition of the household was delineated for the purposes of examining disjunctures and inequities in legal status adjudication and statelessness eradication. This definition is as follows: 1) Every person who has lived in this house for longer than 1 month in the past 5 years (since 2005) including now-deceased persons; 2) Every person listed in the household registration or household survey document regardless of usual place of residence (see 2006 definition); and, 3) Children of head of household or interviewee who are younger than 18 years of age regardless of usual place of residence.

⁴In recent years, the state has taken some tentative overtures toward assigning community land rights to highland communities, though to date no such program has been implemented. As of August 2021, the state continues to dangle the possibility of community land title for at least some highland communities, though it remains unclear whether or to what extent a community land title policy might be implemented. See [36] for a discussion of community land titling in the highlands.

The wealth variable deployed in this paper derives from a principal components analysis (PCA), which identifies several base variables that reliably predict possession of 48 household and farming assets. PCA reveals that, at the time of the survey, possession and number of household assets could be predicted accurately by: 1) the roof material of the home, whether thatch, metal, or tile, and 2) possession of a satellite dish or lack thereof. The wealth index generated through PCA revealed wealth inequalities clustering in quartiles, with the poorest living predominantly under roofs made of thatch—materials that cannot safely accommodate the operation of electronics. The wealthiest villagers have tile roofs, which can accommodate electronics and a satellite dish, luxury items that signify access to discretionary funds (see 16 for details).

Geographical variation

Theoretically, universal health care in Thailand is equally available to all, regardless of place of residence. However, access in Thailand can vary by geographical distance between a place of residence and a local health center, district hospital, and provincial hospital. In the case of the highlands, village administrative structure can advantage or disadvantage residents. For example, “central” villages (muubaa lak) are more likely to have schools and local health centers than their “satellite” villages (muubaa boriwan). Distance in travel times varies between villages, and can be affected by seasonal weather variation, as those villages located along unpaved roads or even paved roads affected by flooding can become impassable during the rainy season. Finally, even when certain facilities are accessible, the availability of services within facilities can vary considerably. With these factors in mind, analyses of health care access and health outcomes in the highlands must not only consider individual factors of legal status, ethnicity, and household wealth, but also geographical access to and availability of services.

Results

In the brief analyses that follow, we examine a range of health care access and availability outcomes according to legal status, ethnicity, household wealth, and geographical location. We initiate the results section with legal status as it is directly tied to health benefits and eligibility. Descriptive data provided herein trace a general baseline of inequalities in health care in the highland context and signal several ways that these inequalities are likely accruing to citizens, relatively privileged ethnic groups, wealthier households, and communities that are located proximal to health facilities that offer a range of care services.

Legal status

While only 74% of individual household respondents held Thai ID cards at the time of the survey, legal status issues are more pervasive at the household level. Sixty-three percent of households are comprised entirely of Thai citizens, whereas 16% are households of mixed status, and another 21% are households in which all members lack citizenship. Crosstabs and chi-square analyses that follow indicate significant inequalities in household legal status and those of health care access outcomes.

Table 1 focuses on barriers to health care by legal status of household members. The first section indicates respondents' greatest concerns about seeking health care services. A significantly higher percentage of non-citizen households (40.8%) rated lack of health insurance as their greatest concern than did households where all members possessed citizenship (4.3%), with mixed-status households (16.7%) falling in-between. Citizen (65.8%), non-citizen (44.8%), and mixed-status (58.9%) households all indicated cost – including both time and money – as their greatest concern. “Costs,” in this case, may include not only the cost of healthcare services, which are higher for the uninsured, but also the costs of transportation, medications, etc. Importantly, measuring concern about cost does not necessarily equate with actual costs.

Table 1. Barriers to health care by legal status of household members

	Citizen	Stateless	Mixed	Chi2
Greatest concern when seeking health care	n=7,439	n=2,666	n=1,965	2.2e***
No health care insurance	4.3%	40.8%	16.2%	
Cost; Financial and Time	65.8%	44.8%	58.9%	
Communication concern	11.0%	6.7%	9.3%	
Fear of arrest	1.3%	1.8%	0.9%	
Fear of discrimination	3.4%	1.4%	2.4%	
In past year when family member was ill, they sought care at:	n=9,552	n=3,106	n=3,106	
Private clinic or Hospital	16.7%	7.9%	12.5%	155.39***
Provincial Hospital	6.7%	11.2%	16.0%	55.21**
District Hospital	83.6%	69.9%	80.1%	276.91***
Local clinic (Public)	79.2%	82.3%	82.3%	27.29***
Household has medical debt	n=5,221	n=763	n=1,128	16.89***
	61%	87%	8.9%	

The second section of Table 1 elaborates on inequalities in access to healthcare services. While all households were able to access local public clinics at similarly high rates (roughly 80% across all legal statuses), citizen households were accessing facilities with a wide range of health care services --district hospitals (83.6%), provincial hospitals (16.7%), and private clinics (16.7%)--at greater rates than were stateless households (69.9%, 11.2%, and 7.9%, respectively). As would be expected, mixed-status households fell in-between. The final section of Table 1 shows that more non-citizen (8.7%) and mixed-status (8.9%) households carry medical debt than do citizen households (6.1%). Note that only households with outstanding loans responded to this question, so the

number of respondents, especially among non-citizen respondents for whom credit is difficult to obtain (37), is far smaller than for the prior questions.

Ethnicity

HPS II data point to significant variations in health care experiences and access by ethnicity. Again, an intensive analysis of each group's particular experiences lies beyond the purview of this article, but drawing from Table 2, it is critical to point out that ethnic Thais enjoy lower medical debt and greater access to robust health facilities than do members of all highlander groups. Specifically, ethnic Thai households residing in highland border villages reported higher rates of access to private clinics and hospitals (28.8%) and provincial hospitals (22.9%) than did members of all highlander groups for whom access to private facilities ranged from 7%-26% and to provincial hospitals from 6% to 25%.

It's important to consider how ethnicity is associated with accessibility factors, not only at the household-level, but at the village level as well. As Table 3 indicates, village health care center availability and service provision vary considerably by village's predominant ethnic group, yet availability of VHCC never exceeded 35% for any one group. For example, 33.6% of predominantly Karen villages had a functional health care center, yet only 19.4% of these facilities offered all basic services. These proportions are similar for highland villages that are predominantly Thai (25.0% and 18.8%, respectively), Hmong (35% and 10% respectively), and Akha (24.1% and 3.4%, respectively), but were significantly lower for villages with predominantly people of Lahu ethnicity. Only two of 52 villages that were predominantly Lahu had health care centers, both of which offered all basic services. Ninety-three and ninety percent of villages of predominantly Akha and Lahu people, respectively, had village health volunteers (VHV). Yet, only 3.4% and 2.0%, respectively, had VHV trained in all basic services. Thai and Karen villages had a higher percentage of villages with village health volunteers who offer all basic services (50% and 27.2% respectively). In sum, data point to wide variation in health care access and availability by ethnicity, and suggest that significant needs persist in health care provision at the local level for all communities across the highlands.

Household wealth

Section 1 of Table 4 focuses on perceived barriers to accessing health care services by household wealth status. When it comes to households' greatest concerns when seeking health care services, 20.8% of the poorest quartile reported 'lack of health insurance' as their greatest concern, compared with only 11.3% of households in the wealthiest quartile. Across all wealth quartiles, the cost of care registered as the greatest

Table 2 Barriers to Health Access by Ethnicity

	Lahu	Karen	Akha	Hmong	Lisu	Mien	Thai	Chi2
Greatest concern when seeking health care	n=2,583	n=3,077	n=1,299	n=647	n=378	n=92	n=1,296	<i>1.8e+3***</i>
No health care insurance	10.6%	14.2%	14.6%	2.9%	34.4%	9.8%	4.2%	
Cost; Financial and Time	62.7%	55.9%	52.2%	79.9%	46.6%	82.6%	60.8%	
Communication concern	15.4%	11.9%	12.3%	4.2%	13.2%	2.2%	1.5%	
Fear of arrest	0.8%	0.9%	2.6%	2.5%	0.5%	0.0%	1.9%	
Fear of discrimination	2.8%	2.9%	3.9%	2.2%	0.5%	0.0%	2.2%	
In past year when family member was ill, they sought care at:	n=2,842	n=4,410	n=1,383	n=817	n=400	n=108	n=1,939	
Private clinic or Hospital	11.4%	7.1%	20.8%	11.9%	8.3%	26.9%	28.8%	<i>1.2e+3***</i>
Provincial Hospital	6.3%	13.4%	15.7%	25.8%	10.8%	12.9%	22.9%	<i>726.19***</i>
District Hospital	84.7%	73.9%	87.2%	88.3%	81.0%	87.9%	85.3%	<i>497.07***</i>
Local clinic (Public)	86.0%	76.2%	86.2%	82.7%	92.3%	87.0%	75.8%	<i>96.78***</i>
Household has medical debt	n=1,442	n=1,942	n=599	n=536	n=103	n=72	n=1,204	
	8.0%	4.5%	10.2%	5.2%	7.8%	13.9%	4.1%	<i>153.78***</i>

Table 3 Health care availability and access by primary ethnic group in village

	Lahu	Karen	Akha	Hmong	Lisu	Mien	Thai
No. Village Surveyed	129	20	2	29	52	5	32
% Accessible During Rainy Season	81.4%	90.0%	0.0%	92.3%	79.1%	50.0%	100.0%
Village has Health Volunteers	89.8%	100.0%	100.0%	93.1%	90.2%	80.0%	100.0%
If yes VHV: % Trained in All Basic Services	27.2%	26.3%	0.0%	3.4%	2.0%	0.0%	50.0%
Village has Health Care Center	33.6%	35.0%	0.0%	24.1%	3.9%	40.0%	25.0%
If VHCC: % Offering in All Basic Services	19.4%	10.0%	0.0%	3.4%	3.8%	0.0%	18.8%
If no HVCC: Ave minutes by motorcycle to closest VHCC	33	20	45	27	38	22	17
	49.3	11.7	21.2	18.1	29.4	7.6	17.5

Note: Members of Shan/Thai Yai, Chinese, Khamu, Burmese, Thai Lue, Lua, H'tin, and Palong groups also resided in villages represented in this analysis. 2.4 In order to be included as offering all basic services, the individual interviewed for the village surveyed had to confirm that the village health center or Village Health Volunteer provided all of the following services: (1) vaccines, (2) pre and post-natal care, (3) family planning (birth control), (4) treatment for diarrhea, (5) distribution of medicine, and (6) HIV/AIDS information. 3.5 Village Health Volunteers (appointed by district or provincial hospitals).

Table 4 Barriers to health care by wealth status of household

	Poorest	Q2	Q3	Wealthiest	Chi2
Greatest concern when seeking health care	n=3,461	n=2,789	n=3,253	n=3,253	<i>328.57***</i>
No health care insurance	20.8%	13.9%	10.2%	11.3%	
Cost; Financial and Time	56.0%	58.0%	65.4%	61.5%	
Communication concern	11.8%	9.1%	9.4%	8.4%	
Fear of arrest	1.7%	1.9%	0.6%	1.3%	
Fear of discrimination	2.3%	3.1%	3.3%	2.8%	
In past year when family member was ill, they sought care at:	n=4,112	n=3,696	n=4,036	n=3,164	
Private clinic or Hospital	18.9%	16.3%	34.2%	30.6%	<i>291.9***</i>
Provincial Hospital	17.6%	18.6%	38.9%	24.9%	<i>303.9***</i>
District Hospital	25.3%	24.3%	27.5%	21.1%	<i>112.9***</i>
Local clinic (Public)	27.4%	24.6%	26.9%	20.6%	<i>96.78***</i>
Household has medical debt	n=1,688	n=1,556	n=2,109	n=1,749	
	8.5%	6.5%	5.6%	6.7%	<i>13.12***</i>

Table 5 Village-level access to health care by province

	Chiang Rai	Chaeng Mai	Mae Hong Son	Tak	Kanchanaburi
No. Village Surveyed	n=65	n=63	n=57	n=89	n=31
% Accessible During Rainy Season	93.0%	87.3%	76.9%	80.7%	100%
Village has Health Volunteers	98.5%	87.1%	83.9%	87.6%	100%
If yes VHV: % Trained in All Basic Services	12.5%	11.7%	14.3%	35.6%	17.9%
Village has Health Care Center	24.6%	9.7%	24.6%	34.1%	45.2%
If VHCC: % Offering in All Basic Services	7.7%	4.8%	10.5%	21.3%	22.6%
If no HVCC: Ave minutes by motorcycle to closest VHCC	33	20	45	27	38
	<i>49.3 std</i>	<i>11.7 std</i>	<i>21.2 std</i>	<i>18.1 std</i>	<i>29.4 std</i>

concern. Combining the responses “no health insurance” and “cost: time and money” as cost-related concerns, over 70% of households across all wealth quartiles registered the cost of seeking health care services as their greatest concern.

Section 2 of Table 4 shows that households in the wealthier quartiles were more likely than households in the poorer quartiles to seek health care at private clinics and provincial hospitals. Interestingly, households in the third quartile were the most likely to seek care at private clinics (34.2%), and by far the most

likely to seek care at provincial hospitals (38.9%). By comparison, 30.6% of households in the wealthiest quartile sought care at private clinics and 24.9% sought care at provincial hospitals. Among households in the poorest quartile, 18.9% sought care at private clinics, while 17.6% sought care at provincial hospitals. Finally, the poorest quartile of households (8.5%) carried more debt due to healthcare-related expenses than all other quartiles, and the third quartile (5.6%) carried the least healthcare-related debt.

Geography

Table 4 shows the availability and accessibility of village health volunteer services across all surveyed villages. Overall, the proportion of villages with health care centers (VHCC) was low for each province, with Kanchanaburi reporting the highest proportion (45.2% with VHCC) and Chiang Mai reporting the lowest (9.7% with VHCC). However, many of these health care centers provide only minimal services. When considering health care centers that provide all basic services, the proportion of villages does not exceed 22.6% (Kanchanaburi), with only 4.8% in Chiang Mai with comprehensive health services.

Accessibility is another factor in health care access. While Kanchanaburi has the highest proportion of villages with health care centers, the average distance from surveyed villages to a health care center by motorcycle is the longest (50 minutes), while the shortest average distance by motorcycle was in Chiang Mai (22 minutes). Most villages had roads accessible during the rainy season, although only 76.9% and 80% of the villages in Mae Hong Son and Tak provinces, respectively, had accessible roads during the rainy season. In this particular border zone, roads to and from some villages can become entirely inundated and rendered impassable for weeks at a time.

Village health volunteers (VHV) are a cornerstone of universal health care in Thailand [23]. The proportion of surveyed villages with VHVs was high - over 90% overall - with Tak province having the lowest percentage of villages with VHV (83.9%). However, the proportion of villages with VHV offering all basic services was only 20% overall, including only 11.7% and 12.5% in Chiang Mai and Chiang Rai provinces respectively.

Finally, general household-level data by province are also critical in understanding barriers to healthcare in the highlands of Thailand. Of the 15,552 households surveyed, 12,552 (80.3%) sought treatment for a family member in a government health clinic, with the lowest percentage in Kanchanaburi (70.4%) and Tak (73.0%) provinces. There was a similar trend with respect to seeking treatment at a government hospital, with households located in Mae Hong Son (70.6%) and Kanchanaburi (66.7%) reporting the lowest usage. Almost sixty percent of the households overall stated that their greatest concern when seeking medical treatment was high payment costs or time, with all provinces reporting over 60%, with the exception of Tak province (23.8% of households). A similar percentage of households in Tak province reported that their greatest concern/worry when seeking medical treatment was lack of health insurance (23.8% of households), but in this case, households in other provinces reported much lower worry of lack of health insurance (8.1% in Mae Hong Son province to 19.7% in Chiang Rai province). Only 9.8% of the households reported that their greatest concern/worry was

communication with staff. However, due to how this question was asked, it is important to consider how this does not mean that communication was not a highly prevalent concern. Communication was simply not considered as the greatest concern among many also facing financial concerns.

Discussion

Findings from this analysis of UNESCO HPS II data on inequalities in health care access and availability in the highlands affirm and extend conclusions from ethnographic research and smaller-scale surveys: despite Thailand's laudable push for universal health care and claims of universal reach, significant barriers to universal health care access and availability persist in highlander communities. The unprecedented scope of the study --across village borders and lines of ethnicity and legal status-- reveals novel and necessary findings as well. All highlanders are experiencing relatively low health care outcomes compared to ethnic Thais -- even ethnic Thais similarly situated, and significant inequalities in health care outcomes exist among and between highlanders that persist along the lines of ethnicity, legal status, and geographical distance/proximity.

With regard to ethnicity, a rigorous analysis on inequities in access between groups lies beyond the scope of this article. However, the scope of data in the HPS II sample of border villages provides incontrovertible evidence that ethnicity remains a salient factor in shaping life outcomes in the highlands. Future health research that includes highlanders in population samples, therefore, should account for ethnicity in examining outcomes among and between highlander villages and groups.

Additionally, and significantly, findings from the HPS II show that Thai ethnicity is a salient, non-neutral factor in shaping health outcomes as well. While ethnic Thai households may have reduced access to services due to their location in highland areas, these households nevertheless enjoy greater access to a range of health care services than do Hmong, Mien, Akha, Lahu, and Lisu households. Predominantly ethnic Thai villages are more likely than villages comprising primarily highlanders to have village clinics and trained health volunteers.

Findings from this analysis are not accompanied by extensive ethnographic or interview data explaining why statistical differences along ethnic lines exist. Therefore, it is critical to not conflate 'highland ethnicity' with 'barrier.' Such oversimplifications are misinformed and tragically common. They often result in policy interventions, even ones promoting ostensibly universal access, that ultimately exacerbate existing forms of structural marginalization among already vulnerable communities [5, 38, 39]. Differences in health care utilization between highland ethnic groups signal potential policy failures to make health care

accessible in multiple languages and culturally sensitive to particular health care beliefs and practices. This disproportionately affects non-Thai communities, particularly at health facilities at and within district boundaries.

As is often the case in contexts of protracted legal exclusion and statelessness around the world, legal status is tightly coupled with ethnicity, religion, race, and other supposed markers of national difference. In the case of Thailand, highlanders were variously excluded from citizenship for a range of reasons, including but not limited to general neglect and systemic discrimination. Although the state has been working to adjudicate citizenship and prevent statelessness in the highlands over the past two decades [11, 17, 18, 32], significant barriers to citizenship persist, and as findings from this analysis demonstrate, lack of Thai citizenship is significantly associated with reduced outcomes in health care access.

As one example of the relationship between legal status and health care, non-citizen households are overwhelmingly more likely than citizen households to view a lack of health insurance as a barrier to accessing healthcare services--a finding that is unsurprising given that many non-citizens did not yet qualify for Thailand's universal coverage scheme at the beginning of 2010, when the HPS II data collection started. And, subsequent to the policy change extending coverage eligibility to stateless individuals--which came into effect later in 2010--barriers to health care likely still persist due to limited information availability, uneven access to government offices, eligibility being tied to stable residence, and other general lags in enrollment. While households across all legal status categories registered concerns about the costs associated with seeking health care, it is likely that stateless households have faced higher costs – both real (e.g. paying for healthcare without insurance) and relative (e.g. costs of care relative to household income) – associated with seeking health care services than do their citizen counterparts. Additionally, the HPS data show that relatively few non-citizen households reported fear of communication barriers (fear of arrest and discrimination are their greatest concerns); however, ethnographic research finds that these are significant concerns for many highlanders, especially those without citizenship, and that these concerns are amplified in cases where stateless people must travel beyond their home district [11, 16-18, 40, 41].

The HPS II found that in 2010 citizen households were far more likely than non-citizen households to seek care beyond their local clinic, at district and provincial hospitals, and private clinics which were typically farther away. Ethnographic observation suggests that concerns around and barriers to seeking health care are amplified for stateless households in cases where they must travel beyond their home district [11, 17]. For example, stateless people must gain

written permission from government officials to travel across internal borders, even for health care emergencies, a process that can be time consuming and unpredictable, and rife with possibilities for extortion by local officials. Traveling across borders without such permissions means risking arrest and even deportation [18, 17, 29]. What's more, the direct and indirect costs of care at district and provincial hospitals and private clinics can be far higher than at local health clinics. Even in cases where they are granted permission to travel, non-citizen still face significant barriers to accessing healthcare services at these facilities, including restrictions on services covered by public insurance.

Ethnographic observations in highland communities indicate that citizen and non-citizen households take on and carry debt in different ways because citizen households have greater access to credit, such as bank loans and government credit programs [35]. The HPS data show that non-citizen households with debt are more likely than citizens with debt to carry healthcare-related debt in particular. Importantly, ethnographic observation suggests that the HPS data may underestimate the healthcare-related debt burden of non-citizen households. Because they have less access to formal credit than do citizen households, non-citizen households often carry informal debts, such as loans from friends or relatives, and they may repay debts in non-monetary ways, such as through agricultural labor [35]. In other words, when direct and indirect healthcare-related expenses arise, non-citizen households may secure the needed funds through means other than formal loans.

When it comes to households' concerns about seeking healthcare services, legal status and wealth intersect, as households in the poorest quartile are far more likely than households in the wealthiest quartiles to be non-citizens [16]. As such, households in the poorest quartile were far more likely than households in the wealthier quartiles to report a lack of health insurance as their greatest concern when seeking healthcare services, and to carry debt for healthcare-related expenses. The intersection between legal status and wealth status also likely informs the disparity between the poorest quartile and the wealthier quartiles in terms of accessing healthcare services at district and provincial hospitals and private clinics. Although public health care insurance was extended to stateless individuals in Thailand amid the deployment of the HPS II, lack of awareness of eligibility, poor access to enrollment services, and lagged enrollment likely continue to contribute to ongoing worries over insurance coverage. Combined with restricted mobility and limited household resources, these barriers still contribute to the high burden of unmet care among non-citizen households.

Strengths and Limitations of the HPS Data

As noted above, the UNESCO HPS instruments were part of a larger, sequentially-designed mixed-methods research agenda that was informed by ethnographic accounts of social and cultural change in highlander communities. Therefore, UNESCO HPS data can be triangulated against findings from these studies and other studies in the highlands to provide novel and clear understandings of the extent of health inequities and other phenomena across ethnic and geographic lines. To this end, HPS data, while limited to border communities, are nevertheless generalizable when contextualized within a broader understanding of the dynamic highland context, and compared rigorously against ethnographic information from deeper studies in particular communities.

For instance, a contextual understanding of the highlands--acquired through interviews and extensive site visits--indicates that the picture of relatively low health access and persistent legal status barriers revealed in this analysis likely represents a more favorable picture of highlander health and legal status than would be detected in a randomized sample. While the Thai border has often been described as 'remote,' and 'dangerous,' in Thai and foreign scholarship and media alike, the geography of the border varies similarly to that of the mountainous interior of the country. In a few areas where the survey was conducted (in Mae Hong Son, in particular), road access was extremely limited. Yet, because infrastructure at border villages is key for "performing" the border in an internationally contested region [38], border villages are often more likely to have functioning health clinics and schools than highland villages located further from the border. For research purposes, the baseline data collected in the HPS are most useful when read against the rich bodies of ethnographic research that can contextualize and compare outcomes among particular highlander groups.

Conclusions

The United Nations Sustainable Development Goal 3 calls for universal health care, based on the principle that all individuals and communities should have access to quality, essential health services without suffering financial hardship. Thailand, which claims to provide health coverage to all households through its universal coverage scheme, is often held up as a success story among middle-income countries (see [40]). However, this claim of 100% coverage is not only difficult to evaluate, it is based on census data that do not tabulate ethnicity or citizenship. As the HPS data reveal, this blind spot in Thai census data conceals significant inequities in access to health care along the lines of ethnicity and citizenship, particularly in the northern highlands.

The UNESCO Highland Peoples Survey II offers a critically-needed baseline study of basic health access, availability, and outcomes among the extremely ethnolinguistically diverse population of Indigenous and ethnic minority highlanders in Thailand. In doing so, it comprises an example of how ethnographically-informed survey instruments can better assess health outcomes across a vast and extremely diverse population. As a cross-sectional study of a purposively selected large-scale population, the reliability and validity of HPS data can be measured best in relation to what is known from intensive ethnographic studies and smaller-scale studies. Indeed, the HPS II extends and affirms much of what is known either observationally or via in-depth studies among particular ethnic groups in the highlands. These findings, triangulated with other qualitative and ethnographic methodologies, constitute a testament to the reliability and strength of the HPS overall. The HPS II data, as a cross-sectional survey, cannot independently reveal why certain outcomes of health are indicated without ethnographic and qualitative research, the survey data offer unprecedented opportunities to examine the extent of health inequalities and related phenomena across social and geographical borders of language, legal status, and village location. Ultimately, this general analysis of inequities in health care access reveals that in the case of Thailand, although universal health care provisions have effectively expanded the rural healthcare infrastructure and physical access to facilities, this has not ensured universally met health care needs. Both direct and indirect barriers are undermining goals of universal health care access for highlanders. These include, but are not limited to, concerns regarding communication and discrimination, higher costs and risks associated with travel to distant health facilities (particularly for non-citizens), lower incomes associated with lack of citizenship (which is disproportionately experienced by highlanders), and reduced and lower quality health care services available in highlander villages.

Indigenous and ethnic minority peoples, and people who experience precarious legal status and statelessness disproportionately experience poor health outcomes as well as relatively low access to reliable and appropriate health care services. These facts do not simply warrant more expansive enumeration of understudied groups. Rather, these systemic disadvantages comprise an obligation for public health advocates and researchers to interrogate how, why, and to what extent barriers to health persist for peoples of Indigenous and ethnic minority backgrounds as well as for those who lack citizenship in their home of residence. Doing so, however, requires a systemic shift in health focus: when pursuing universal health care coverage, studies and evaluations of these programs must use multiple, particular (non-universal) methodologies in accounting for the unique

experiences of special populations. The HPS data shows why the omission from censuses of stateless, Indigenous, and ethnic minority peoples matters for those populations when it comes to characterizing access to healthcare services in the entire population of a country or region, and the critical importance of gathering ethnically disaggregated data. The study and its findings illustrate the ongoing need for pairing survey data with ethnographic research to design strategies that address the complex and heterogeneous reasons these populations experience barriers to essential healthcare services.

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