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The assimilation of Western medicine into a semi-nomadic healthcare system: a case study of the Indigenous Aeta Magbukún, Philippines.

Abstract

The Aeta Magbukún are a genetically and culturally distinct group of Indigenous people living in an isolated mountain forest in the municipality of Mariveles, in the province of Bataan, Philippines. This research aims to document some healthcare related information of the people, inform future decisions regarding maximising benefits of modern conveniences, and minimise negative consequences on their culture and health. Using an ethnographic approach, data was collated from a community health survey in combination with field notes from three of the co-authors while living with the Aetas. Despite major implications from rapid ecological and cultural changes, traditional ethnomedical systems continue to be revered as an essential healing practice, although they are increasingly used in conjunction with Western medicines and healthcare. At the Aeta village level, the changing socio-political influence between the kagun (traditional healer), the NGOs, and the Municipal Council in terms of healthcare provision is pivotal, as the kagun have chosen to integrate the Western medicine and healthcare services into their traditional healthcare system, without simply rejecting them. In turn, Western-style healthcare interventions have the potential to be carefully managed to integrate traditional Aeta Magbukún socio-political structures, healthcare, and cultural continuity. The cumulative influence of numerous other novel aspects to Aeta life (e.g.
permanent housing, a highway through the village, literacy, cash economies, energy-
dense foods, communication/entertainment devices, etc.) will place additional pressure
on the traditional ethnomedical healthcare system. However, enabling the continuity of
access to appropriate healthcare knowledge (both the transfer of knowledge from
Western medicine to the Aeta Magbukún, and vice-versa), can assist many cultures
through the inherent stresses of increasingly rapid acculturation and development.

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Introduction

Despite a perception of incongruence between traditional Indigenous and Western healthcare systems, it is often difficult to both generalise and distinguish between the adoption and use of either at an individual or community scale. For example, many Indigenous peoples adopt the use of Western medicine in the treatment of acute symptoms, life threatening illness, and emergencies (Nathan and Japanangka 1983).

However, strong Indigenous social and kinship obligations have the potential to override individual treatment decisions to the detriment of the individual, as core beliefs about the causes of illness and death are commonly attributed to social or spiritual dysfunction (Reid 1983; Morgan et al. 1997; Maher 1999). Yet, there can be a danger of overgeneralisation in anthropological literature from individual communities (Maher 1999), as Indigenous peoples, their beliefs, and practices are both incredibly diverse and, as living cultures, are subject to change (Morgan et al. 1997).

To appreciate the contemporary Aeta Magbukún health framework, one has to discern how the concept of health manifests itself within the context of their culture, politico-economic system, and biophysical environment on a daily basis. Aeta camps usually consist of around a dozen very small temporary housing structures that are used for wet weather shelter and sleeping (Headland 1987b). As they are largely nomadic, the Aeta have few possessions and no way of storing food, however, there is a high value placed on food sharing and the accommodation of overnight visitors travelling...
through the region. With the exception of these overnight visitors, Aeta will only reside
long-term with kin (Headland 1987a, b). As with other minority and marginalised
groups in the Philippines, poorer health outcomes can be attributable to
underdevelopment, including low socioeconomic status, which in turn is a product of
issues concerning security of land tenure, poor sanitation, and difficulties in access to
utilities and quality education (David 1989; Walter and Saggers 2007; Gracey and King
2009). Collectively, Indigenous populations in the Philippines have been estimated at 12
million and are broadly classified as Lumads, Igorot, Ilongot, Negrito, Mangyans, and
Palawan tribes, although these are divided further into 110 major ethno-linguistic
groups (Ting et al. 2008). The Aeta Magbukún belong to one of 25 ethnonliguistic
groups and along with the Ata, Aeta, Alta, Agta, Atí, Pugot, and Remontado, are
classified as Negrito. The Negrito are typically nomadic forest hunter-gatherers located
throughout Luzon, and provinces of the Visayas and Mindanao (Rai 1982; Headland
1984; Ting et al. 2008). The Aeta/Agta of Luzon generally form socially-isolated
linguistic groups through networks of kin, which have remained stable and
independently viable until more recent encroachment on their land by the growth and
migration of agricultural and mercantile populations (Rai 1982). For the Aeta
Magbukún, lifestyle and cultural change was accelerated within the last decade with the
completion of a highway and provision of electricity to their bayan-bayan (village).
Thus, the Aeta Magbukún represent an interesting case of a genetically and socially
distinct traditional Indigenous population experiencing rapid socio-cultural adaptation to
Western-style infrastructure, medicine, healthcare, language, and culture (Delfin et al.
2011; Lopez-Class et al. 2011; McHenry et al. 2013), and yet are one of the least known
and researched Indigenous peoples within what remains of the forested areas of the Bataan province of Luzon (Balilla et al. 2012). (Figure 1).

[Insert Figure 1 approximately here]

The Aeta Magbukún in Biaan, live on the edge of the remaining forest of the municipality of Mariveles in the province of Bataan, Philippines. As the traditional Indigenous peoples of the land, the Aeta Magbukún continue a nomadic hunter-gatherer lifestyle, although some have become semi-nomadic in the last decade. Their subsistence lifestyle within the declining area of their forested ancestral domain exposes the Aeta Magbukún to external socio-political influences and resulting ecological changes (Balilla et al. 2012; Balilla et al. 2013). An acute example occurred on 28 September 2006 when typhoon Milenyo (known internationally as Xangsane) hit the Bataan province and almost annihilated the Aeta Magbukún community through extraordinarily intense flash flooding. The extreme movement of mud and debris was exacerbated by (legal and illegal) forestry activity by non-Aeta groups. This revealed the insufficiency of forestry management to prevent excessive exploitation of the forest in Mariveles to the detriment of both the Aetas and the wider community (Balilla et al. 2012). Since this incident, the Mariveles Municipal Council has given greater emphasis and priority to environmental programs and campaigns protecting the over-exploitation of the forests in the municipality. Consequently, the Aeta Magbukún have featured in various council conservation activities, which drew on the Aeta’s image as vanguards of the forest and as a living legacy in need of protection.

The objectives of this research are to provide a snapshot in time of simple Aeta Magbukún demographics, the self-reported subjective health levels, and level of traditional ethnomedicine and Western medicine use within the past two weeks. Due to
the reliance on primarily volunteer researchers and data collectors, this baseline
information is particularly limited, yet is contextualised within the cultural and socio-
political information observed first-hand by the authors. The work hopes to become one
of very few written documents of potential historical value for the Aeta Magbukún.
Thus capturing an element of their ethnic identity, traditions, and independence, for
future detailed follow-up research and analysis (Bruner 1986).

Method

This ethnographic research utilised a mixed-methods approach comprising participant-
observation, informal interviews, and a simple community health survey. Observational
field notes and informal interviews with key community members were collected by three
of the co-authors (an anthropologist, NGO administrator, and a teacher, all of whom are
non-Aetas) predominantly when living within the Aeta community. Period of residence
range from a few weeks to several months at a time over two years, with one author living
with the community continuously for several years, and continuing to work within the
community on a daily basis. This enabled a depth of involvement in an attempt to
integrate the authors’ investigation as a trusted member of the Aeta Magbukún
community. The narrative analysis of ethnographic data focused primarily on health-
related topics and ethnomedical practice. These stories were either observed first-hand by
the authors or were relayed through informal interviews with key informants, such as
traditional healers, the patient, or the patient’s parents. The community health survey
questionnaire was taken from the overall health and nutrition survey component of a
series of questionnaires to build community data used by the Anthropology Field School
at the Department of Anthropology, University of the Philippines (Diliman Campus). To
conduct the community health survey, a trained community health worker of Aeta
ethnicity was employed during the earlier phase of the research. The health worker visited
each household and conducted one-on-one interviews with a selected member of the
household. Pre-testing of the survey enabled appropriate and meaningful translation of the
terms used within the survey. The health worker was raised in an Aeta home (outside of
the village which is the subject of this research), and possessed a balance of local/ethnic
and conventional Western medical knowledge. Therefore, the health worker was deemed
to have sufficient understanding of the cultural sensitivities of existing ethnomedical
practices to enable extraction of basic, subtle references to traditional cosmology and
ethnomedicine within a cultural context. The entire Aeta Magbukún community was
sampled as the population was too small to allow for random or stratified methods of
sampling. The health worker conducted the survey and collated the various traditional
herbal/medicinal practices in use. For clarification, the community worker was not an
author in this research. The primary author undertook the majority of the remaining field
research. While not an Aeta, the primary author is fluent in the Magbukún Aeta/Mariveles
Aeta, the language of the Aeta Magbukún. As such, the author was able to document and
translate first-hand the Aeta Magbukún stories, knowledge, opinions, and perspectives
while living in the village. The field notes were examined by Aeta Magbukún community
elders and Aeta individuals relevant to the information collected to ensure an accurate
account and interpretation.

Results
There has been a marked increase in attention regarding the plight of the Aeta Magbukún in recent years. This has resulted in NGOs and governments investigating the Aeta Magbukún’s access to health, education, services, and infrastructure. The NGO influence (primarily of Christian missionary orientation) in particular has seen many changes. In a relatively short interval, the Aeta Magbukún have experienced the construction of an Aeta elementary school, public toilets, water tanks, small permanent housing, and electricity, in addition to a concrete highway passing through the newly established permanent settlement. Caritas Bataan – Indigenous People’s Apostolate (CB-IPA), an arm within the Diocesan Commission on Social Services established in 1998, was the pioneering NGO that gave attention to the Aeta Magbukún tribe in Mariveles. The CB-IPA facilitated ancestral domain claims and offered education scholarships to Aeta children. Separately, through a collaborative government-NGO initiative, the two-classroom Aeta school in the present village site was established in 2003, called the Morpeth Concord Aeta School. The school was funded and constructed by a collaboration between the Philippine’s National Commission on Indigenous Peoples (NCIP) and the Entrepreneurs Volunteer Association Charity Foundation (EVACF), with funding from several Anglican Churches in Morpeth, Northumberland, UK. Around the same time another NGO, the Institute for Foundational Learning (IFL), facilitated families to settle on the present permanent village site near the school. IFL is a Christian NGO focussed on medical missions, adult literacy, and community development. Numerous IFL volunteers constructed permanent houses and structures, a potable water supply, and several public toilets, and two of the volunteers (a husband and wife) have become the teachers in the now renamed Biaan Aeta School.
developments presents a view of successful development, and the Aeta Magbukún
themselves expressed satisfaction with the elementary school and the provision of basic
services that they did not enjoy half a decade ago. However, there is concern stemming
from the Aeta village over the continual encroachment of non-Aeta people and culture
into the region, which has increased markedly since the major works to improve the
road (primarily upgraded from an overgrown dirt track to a paved dual highway as an
access road to a new large tourist resort several km away). Yet, the improved road is
also viewed positively as it enables easier access to the nearby town and the Aeta
community now have improved access to local public health institutions like the
Barangay Health Center and the Municipal Health Center. The influx of NGOs also
brought with them medical missions by Singaporean doctors, established a village
pharmacy where generic medicines can be accessed, and government health workers
undertake scheduled visits at no cost to the Aetas. Furthermore, Aeta medical
emergencies are treated in the government funded Municipal Health Office at no cost,
although some specialised services and treatment may require payment, it is now a more
accessible option with the new road.

The new road has also brought a greater exposure to a range of new products,
such as packaged refined foods (and a new issue of unbiodegradable littering), alcohol,
modern appliances, which in turn necessitate the need for cash income generation and
financial skills, rather than the traditional bartering practices. These new influences on
the Aeta Magbukún of Biaan, all occurring within roughly ten years, is an example of
extremely rapid acculturation processes for a functional hunter-gatherer community.
Demographics and self-reported health

As of December 2008, the total population in the Aeta bayan-bayan was 107, with a total of 21 families. The average size of an Aeta nuclear family in the bayan-bayan is five family members including the mother and father. The total population is composed of 63 (59%) males and 44 (41%) females. It is a very young population with 72 (67%) of the total bayan-bayan population between 0-30 years of age, with an average of three live births per year from 1990 to 2008. In recent years (~10) it has been more common for non-Aeta spouses to be welcomed into the community, and now 10 (9%) of the bayan-bayan population are non-Aeta. Therefore, 10 out of 21 or 47% of married couples in the bayan-bayan are now of mixed marriage. In 2007, a total of 19 household representatives were interviewed for the survey. The Aeta household representatives, consisting of 14 mothers (around 50% of all mothers) and five fathers, were asked to rate their own and their household members’ health using a five point Likert scale (very sickly, sickly, quite healthy, healthy, excellent health). The basis for each rating in the scale was left entirely up to the Aeta’s subjective opinion to indicate a respective scale rather than an absolute (Table 1). Almost half of the Aeta community considered themselves and their family members madalang magkasakit/malusog/healthy, while a considerable number see themselves as paminsan-minsan magkasakit/quite healthy (Table 2). Almost 10% were rated to be napakadalang/hindi nagkakasakit/excellent health. Very few are rated as sakin/sickly, and napaka-sakitin/very sickly, at 6.4% and 2.4%, respectively.

[Insert Table 1 and 2 approximately here]
Perception of common Aeta illnesses

For Aetas participating in this study, being healthy was generally understood as being without illness. In relation to their self-assessment of health, the Aeta community was asked to recall *sakit/karamdaman* (illnesses) that they experienced over the past two weeks (within a 2-week morbidity recall). This recall provides a glimpse of what the Aeta consider as their common illnesses. The majority of the informants were Aeta mothers. Table 3 shows the top three rated illnesses reported for children and adult males and females are *lagnat* (fever), *ubo* (cough), and *sipon* (colds). It was not uncommon that these three illnesses were experienced at the same time as having the *trangkaso* (flu). However, a considerable number of individuals (17) were reported as being *Walang sakit* (without any illness) in the 2-week period. When asked what remedies or medications were administered for their illnesses, several answers were given, both from conventional Western medicines and traditional ethnomedicines (Table 4). As part of a community survey, when asked what traditional remedies or medications were administered for their illnesses over the previous two weeks, several traditional ethnomedicines were sought and administered, not simply kagun rituals (described below). These included (from most frequently used to least): Pulot (honey); Talbos ng Bayabas (guava leaves/psidium guajava); Bawang (garlic, Allium sativum); Tawas (alu
balunang Manok (literally means ‘chicken gizzard plant’). An inclination towards using
generic Western medicines can be clearly seen, with paracetamol the leading choice, in
direct proportion with its use for the leading common illness (fever). As for the herbal
remedies, honey is often used for a cough and colds. The relatively high use of generic
conventional Western medicines was due to the relatively recent establishment of the
community pharmacy. For example, the use of Paracetamol for the most commonly
reported illness, fever, as previously mentioned.

The field notes and the simple survey show that despite the exposure to and
improved access of conventional Western medicine, the Aeta’s traditional ethnomedical
systems continue to be revered and used by the Aeta community as an essential healing
practice. This research suggests an integration of two complementary healthcare
systems exists at present, which retains traditional mental wellbeing
practices/knowledge while improving community acute healthcare. However, the rapid
uptake of Western medicines since the community pharmacy and the medical missions
suggests it may come to dominate much healthcare practise over time. This is
fundamentally due to practical reasons: modern medicine efficacy, and the arduous task
of travelling deep into the forest to access seasonally available traditional medicines
when Western alternatives are available at no cost within the newly established
settlement year-round. Nonetheless, Western medicines did have their traditional
counterparts in terms of herbs/substances. The most commonly used traditional remedy
was honey, particularly for a cough and cold. The minimal use of traditional spiritual
healing practices, such as ‘kagun’ healing (described below), in the two week period
can be attributed to the general use of the approach reserved for medium to major crises.
Nonetheless, an elder kagun has also taken to both self-administration and prescribing
the Western alternatives for minor illness, such as paracetamol. This is primarily due to
the kagun’s personal experience of efficacy of Western alternatives in a relatively short
period in comparison to some traditional alternatives. Furthermore, the kagun was
known to have not taken the full prescription given by the Singaporean doctor,
preferring to save the medicine for future use.

[Insert Table 3 and 4 approximately here]

Aeta cosmology and the kagun

The Aeta Magbukún cultural and spiritual worldview is linked to traditional
animistic concepts which have merged to an extent with basic Christian values and
beliefs over the last few centuries. This syncretism is ascribed to Aeta identifying as
predominantly Catholic Christians, while at the same time staying true to their
remarkable relationship with nature. The Aeta believe in the existence of Diyos (God) as
a supreme being, and also believe in anitos (or spirits). Anito are believed to dwell both
in the physical and meta-physical world, in the rocks, trees, rivers, in the underworld, in
the clouds, and even in their nawini (the physical body of the Aeta). Anitos are
categorised as either ‘good’ or ‘bad’ anitos, and within this opposition lies the core of
the Aeta ethnomedical beliefs and tradition: illnesses are caused by malaut na anito
(bad anitos), and the cure can only come from the opposing benevolent forces of the
mabuting anito (good anitos). Belief in anitos is the basis of this system of traditional
healing, which is generally called kagun.

Kagun, in the general sense, refers to the consolidated system of traditional Aeta
beliefs of the eternal opposition of the good and bad anitos. An integral part of this
system of belief is that it involves only the Aeta and how they relate to these anitos and
is not applicable to non-Aetas. Once displeased, the bad anitos may cause illness in an
Aeta. They may also dwell in the Aeta body, as a form of possession. Good anitos are
able to heal an Aeta afflicted by the bad anito. However, good anitos need human
assistance to heal Aetas, which gives prominence to the traditional healer. The word
kagun is complex in itself and can refer to the good anito, the Aeta healer, and also the
Aeta healing ritual. The essence of kagun is difficult to capture through objective
experience, as the term itself is subjectively defined. To the Aeta, kagun is a cohesive
term that encompasses the whole experience and practice of the Aetas with the anitos.
Therefore, kagun can be best described as a complex system of Aeta ethnomedical
knowledge, experience, belief, and faith, and their associated healing practices. The
kagun healers, who can be both male and female, are first and foremost an Aeta
individual who, by virtue of either transference or acquisition of the kagun (i.e. the anito
spirit), becomes labelled as a kagun (i.e. healer/sharman). Thus, while an individual
Aeta may be a kagun, they are only “at one” with their kagun or anito spirit when they
reach a healing trance state. Most of the time, however, the kagun (healer) is an ordinary
Aeta who shares experiences, thoughts, and biases with their fellow Aeta and the non-
Aetas around them.
The practice of pangangagun (kagun healing ritual): narrative of two cases requiring urgent healthcare

Despite the collective Aeta Magbukún experience of the efficacy of Western medicine and the integration of the use of these medicines, the Aeta continue to adhere to their traditional ethnomedical aetiology of illness. The kagun healers similarly acknowledge the efficacy of Western medicine for certain symptoms of illness. However, a kagun would not attribute illness to an infection, and would instead explain symptoms as a spirit-induced ailment. As observed by the primary author, a kagun healer treated himself for fever using paracetamol after using herbal remedies, based on previous experience that he felt really better when he took paracetamol before. Interestingly, however, he did not attribute this ailment as a symptom of flu or influenza, but rather as spirit-induced.

In another incident observed by the primary author, a 12 year old Aeta girl accidentally slipped and hurt her arm while playing at school one evening. It was obvious to her mother that she needed attention, as her daughter might have a fractured arm. To soothe her daughter’s arm she used herbal remedies coupled with pain relievers from the community pharmacy. Before bringing her daughter to the Municipal Health Center, the mother brought the girl to the kagun to perform a healing ritual. After the pangangagun, it was determined that a disturbed spirit caused the girl to slip. In the kagun’s trance, it was revealed that the anitos around the school premises were disturbed by the raucous playing of the Aeta children, and the children should refrain

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1 This information was derived from the author’s first-hand discussions with the female kagun in the Aeta native language. At the present time, the number of kagun has reduced to two, one middle aged female and one older male.
from playing when it is dark to respect the anitos. The kagun noted that during the healing trance, the anitos did not reveal what could be done to heal the girl. So, the kagun advised the mother to take the girl to the Municipal Health Center for assistance. The girl received an x-ray, which revealed that there was no dislocation or fracture and she was prescribed pain relief which she took along with herbal remedies.

On another occasion, as relayed to the primary author by the kagun who conducted the healing ritual, an Aeta boy was experiencing severe stomach pain, so his parents brought him to the nearest kagun healer at the time. The kagun undertook a pangangagun and the anito ordered her to tell the boy’s parents to immediately bring him to the nearest hospital, as the boy’s illness was apparently one the anito could not help. The kagun explained to the primary author that the anitos cannot give instant relief to this kind of intense pain, and this is why he needed to be taken to the hospital. The boy’s parents immediately followed the kagun’s advice and brought him to the hospital where he was diagnosed with appendicitis. The boy underwent an appendectomy with his parents assured that he would survive the surgery because he underwent the kagun ritual first.

In the case of mild or common Aeta illness or ailments, a kagun should be able to explain its cause and therefore, its treatment. In severe cases, the kagun have begun to prescribe Western medicine, however this is still done through the kagun ritual trance experience and thus holds traditional spiritual beliefs concerning health as valid. While the Aeta make use of Western medicines and healthcare, most believe that they should not seek medical care before first consulting the kaguns, or as they would say bago mag pa ineksyon (translated literally as ‘before getting an injection’). Both kaguns interviewed by the authors are adamant that inoculations, if given to an Aeta without
undergoing a kagun healing ritual first, can be the reason for one’s untimely death. So
long as treatment follows a kagun ritual, the Aetas do not appear to have any aversion to
medical diagnostic or therapeutic procedures. However it is not their first preference,
and despite an increase in the availability of Western medical treatment, the most
convenient modality of treatment remains through the kagun.

Discussion

It is commonly acknowledged that cultural survival requires the use and practice of
traditional knowledge (Mauro and Hardison 2000), including knowledge concerning the
health and wellbeing of a community. Furthermore, individual and community health are
not independent of their social context, resource accessibility, and political structures
(Yen and Syme 1999), and are influenced by a plethora of cultural beliefs, values, and
practices along with other social, political, and economic issues (Panelli and Tipa 2007).
As such, illness and injury can generally be considered both biological and cultural
(Romanucci-Ross et al. 1997) and Indigenous perspectives on health commonly take
into consideration overall community wellbeing, and not just individual physical health,
thus encapsulating cultural, communal, and social elements (National Aboriginal Health
determinants of health include cultural and environmental elements which add complexity
to the understanding and treatment of the individual.

The field and survey data show that over half of the Aetas considered themselves
to be in good or excellent health, and there has been little resistance to the use of
Western medicines and pharmaceuticals in the treatment of symptoms of common
illnesses, such as colds, coughs and fever. Yet while the self-reported treatment practices may have changed, like other Indigenous peoples, Aeta beliefs in the causes of illness remain strongly influenced by traditional health perspectives (Reid 1983; Morgan et al. 1997). The Aeta Magbukún reconcile differences between the application of their own healing and health practices to non-Aetas because they view themselves, their people, and culture, as truly distinct from non-Aetas and in the main believe their kagun-based understanding of the causes of their illness and subsequent treatment apply only to them. Although with recent intermarriage of Aetas with non-Aetas, it will be interesting to observe how these notions of difference are reconciled over time, and particularly how ideologies of cultural and spiritual distinctiveness apply to their mixed Aeta-Tagalog descendants.

With the adoption of Western forms of medicine and treatment the Aeta Magbukún engage in what is known as medical pluralism. Thus, where medical pluralism exists, healthcare decisions are often made based on consideration of the perceived causes, the treatments available, and their relative physical and cultural consequences (Strathern and Stewart 1999). Within this context, it appears that the Aeta assimilated the newly available Western medicines primarily because of their availability through the pharmacy, compared to the often arduous task of gathering traditional remedies from the forest, and recognise the efficacy of Western medical practice, generally, for providing fast relief from the symptoms of illness. However, even with a seemingly growing preference for, and access to conventional Western medicine, the Aeta Magbukún’s ethnomedical system of kagun continues to be revered by the Aeta community as a framework for understanding the causes of illness and their ongoing or future prevention.
While it may often be the case there is an inherent conflict between Western and Indigenous understanding of illness, the use of modern medicines and healthcare may not always be prevented or jeopardised through the continued employment of traditional Indigenous health and healing practices (Strathern and Stewart 1999). Thus, barriers to both the perceived and actual accessibility of Western medical treatment may still remain, despite a substantial increase in availability to the Aeta community. Thus, the most convenient modality of treatment remains the kagun, reinforced by the belief that they should present to the kagun *bago mag pa ineksyon* (before getting an injection). Thus, the use of Western medical treatment is based on a recommendation that the kagun has endorsed its use, and not necessarily because it is the primary place to present for the treatment of illness. A culturally responsive Western healthcare system can thus complement both systems of healing, while maintaining Aeta Magbukún traditional healthcare knowledge and cultural integrity, and ensuring a sustainably healthy population. Furthermore, the non-Indigenous medical and healthcare professionals provide not just their skills and knowledge, but also the potential to build capacity of local people to deal with critical health challenges, as long as these interventions continue to be sensitive to the socio-political structures of the traditional healthcare system (Bopp and Bopp 2004; Wahbe et al. 2007).

While this research was limited to a consideration of the spiritual determinants of health, a model for individual health needs to include the breadth of social and environmental dynamics as determinants of health, such as the quantity and quality of social support relationships within a relatively traditional hunter-gatherer society. By definition, changes in social relationships, such as the death of a loved one, influences individual health status in many ways (Ware et al. 1981). Furthermore, the relationship
with ancestral or traditional Indigenous lands and territory has been shown to have implications for individual and community health, particularly when that relationship is disrupted or restored (Panelli and Tipa 2007; Garnett et al. 2009). The complexity of these social and environmental dynamics on health for Indigenous peoples, such as the Aeta Magbukúñ, are not always explicitly acknowledged within the context of the Aetas values and culture. This is a result of the limitations imposed by Western health practices, which have been dominated by a physical health focus at the expense of mental, social, and spiritual health, among other health determinants, in healthcare governance and policy making (Hawks 2004; Johnston et al. 2007). Thus, the treatment of physical symptoms can be inadequate in addressing Indigenous health inequities and has prompted calls for health professionals to respect Indigenous knowledge and values, including the connection of social relations, spirituality, family, and land (Stephens et al. 2006; King et al. 2009; Kingsley et al. 2009). Consideration of traditional healthcare priorities held by Indigenous peoples during an acute medical emergency is also required by healthcare professionals, as Western values and priorities may not be of primary value to the community or the individual, and how that healthcare is delivered will likely have unforeseen consequences for both Indigenous individual and community health (Garnett et al. 2009).

Conclusions

This research sought to document, contextualise, and analyse the contemporary transition of a unique traditional Indigenous hunter-gatherer healthcare system as it experiences increasing exposure and accessibility to Western medicine and health care practices. The authors hope to follow in the tradition of increasing the level of
awareness of both Indigenous and non-Indigenous peoples of how new influences may engender cultural change, and in some cases cultural extinction, of traditional healthcare system elements (Bruner 1986). Improving the health of Indigenous peoples requires consideration of both access to adequate healthcare, and maintaining a right to access and maintain traditional healthcare systems of knowledge (Dove 2006). The Aeta community should, therefore, expect greater engagement of their own perspectives on their needs and necessary health services. As with most Indigenous peoples globally, poor health outcomes are associated with poverty, malnutrition, poor hygiene, and environmental contamination, thus improving opportunity and access to healthcare, services, and education should be a parallel priority (Dunbar et al. 2007; Wahbe et al. 2007; Gracey and King 2009). As a living culture, Indigenous identity, and its ultimate survival is dependent on the capacity to adapt beliefs and practices to new influences (Mauro and Hardison 2000), and the question of how traditional and Western healthcare systems can adapt to each other, and the associated consequences over time is unknown. While useful and effective, Western methods of healing may compromise traditional beliefs and knowledge (Cunningham 2010), yet there is scope for a complementary existence of both healthcare systems. To date, there is remarkable resilience of the traditional Aeta healthcare system, despite the introduction of new Western influences, infrastructure, formal education, monetary incomes, high food availability, and the availability of Western healthcare services. Although, the currently observed preference for generic medicines among the Aetas may risk the loss of much potentially valuable herbal plant knowledge, traditional healthcare practices, and socio-political support systems. As Durle (2004) established, the experience of Indigenous health knowledge illuminates opportunities for expanding the understanding of healthcare within both
Indigenous and non-Indigenous cultures. Therefore, Western health institutions with sufficient knowledge of the cultural beliefs and practices of a tribe or culture can be mindful of how Western healthcare interventions may undermine traditional ethnomedical systems and socio-political structures. Enabling the continuity of access to appropriate healthcare knowledge (both the transfer of knowledge from Western medicine to the Aeta Magbukún, and vice-versa), can assist many cultures through the inherent stresses of increasingly rapid acculturation and development. At the Aeta village level, the changing socio-political influence between the kagun, the NGOs, and the Municipal Council in terms of healthcare provision is pivotal, as the kagun have chosen to integrate the Western medicine and healthcare services into their traditional healthcare system, without simply rejecting them. In turn, Western-style healthcare interventions have the potential to be carefully managed to integrate traditional Aeta Magbukún socio-political structures, healthcare, and cultural continuity. Additionally, the cumulative influence of numerous other novel aspects to Aeta life (permanent housing, a highway through the village, reading and writing, and in foreign languages, electric appliances, modern communication/entertainment devices, the need for employment and cash incomes, the transfer from mobile traditional hunting and gathering to more sedentary lifestyle, and the highly available energy-dense food and drink, etc.) will place additional pressure on the traditional ethnomedical healthcare system. Further work is required to document the traditional Aeta Magbukún cultural information while the elders who lived traditional lifestyles remain alive and healthy.
References


Tables and Table captions

Table 1: Relative health rating scale translations in Tagalog and Aeta Magbukún, with English translations and revisions in brackets (Revisions were included for translation rigor).

<table>
<thead>
<tr>
<th>Rating</th>
<th>Tagalog (English)</th>
<th>→ Aeta Magbukún (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hindi malusog (Unhealthy/Poor health)</td>
<td>Napaka-sakitín (Very sickly)</td>
</tr>
<tr>
<td>2</td>
<td>Medyo hindi malusog (Quite unhealthy)</td>
<td>Sakítín (Sickly)</td>
</tr>
<tr>
<td>3</td>
<td>Medyo malusog (Quite healthy)</td>
<td>Paminsan-minsan magkasakit</td>
</tr>
<tr>
<td>4</td>
<td>Malusog (Healthy)</td>
<td>Madalang magkasakit</td>
</tr>
<tr>
<td>5</td>
<td>Malusog na Malusog (Excellent health)</td>
<td>Napakadalang/Hindi Nagkakasakit</td>
</tr>
</tbody>
</table>
Table 2: Subjective health ratings of the 93 individuals in the study. (The majority of the informants were Aeta mothers).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Total no. of male household members rated</th>
<th>Total no. of female household members rated</th>
<th>Total (%) N= 93</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>9</td>
<td>0</td>
<td>9 (9.6%)</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
<td>20</td>
<td>43 (46.2%)</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>14</td>
<td>33 (35.4%)</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6 (6.4%)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2 (2.4%)</td>
</tr>
</tbody>
</table>
Table 3: Adult male and female, and children’s reported illness within a 2 week recall period. (The majority of the informants were Aeta mothers).

<table>
<thead>
<tr>
<th>Reported illness</th>
<th>No. of Children (0-15 y.o.)</th>
<th>No. of Adult Males</th>
<th>No. of Adult Females</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagnat (fever)</td>
<td>23</td>
<td>4</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Ubo (cough)</td>
<td>9</td>
<td>4</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>Sipon (cold)</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Nahihilo (dizziness)</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Sakit ng ngipin (toothache)</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Sakit ng ulo (headache)</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Sakit ng tiyan (stomachache)</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Namumula/nangangating mata (eye irritation)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Sumasakit ang batok, ‘high blood’ (nape pain)</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Sumasakit balakang/puson (pubic pain)</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Nanghihina ang katawan (general weakness)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Napilay (sprain)</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rayuma (rheumatitis)</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Asthma</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Walang sakit (without any illness)</td>
<td>6</td>
<td>9</td>
<td>2</td>
<td>17</td>
</tr>
</tbody>
</table>

Illness translations: Lagnat (fever), Ubo (cough), and Sipon (cold); Nahihilo (dizziness); Sakit ng ngipin (toothache); Sakit ng ulo (headache); Sakit ng tiyan (stomachache); Namumula/nangangating mata (eye irritation); Sumasakit ang batok (‘high blood’) (literally means pain in the nape, which is associated with hypertension); Sumasakit balakang/puson (pain in the pubic area, commonly associated with urinary tract infection); Nanghihina ang katawan (general weakness); Napilay (sprain); Rayuma (rheumatitis).
Table 4: Number of individuals in the survey group who used either a Western medicine or traditional herbal/plants/substances in the two week interval.

<table>
<thead>
<tr>
<th>Western medicine</th>
<th>No. of Individuals</th>
<th>Herbal/medicinal plants/ethnomedicine</th>
<th>No. of Individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol</td>
<td>23</td>
<td>Pulot (honey)</td>
<td>7</td>
</tr>
<tr>
<td>Mefenamic</td>
<td>4</td>
<td>Talbos ng Bayabas (P. guajava)</td>
<td>3</td>
</tr>
<tr>
<td>Topical ointment</td>
<td>4</td>
<td>Bawang (A. sativum)</td>
<td>3</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>2</td>
<td>Tawas (alum)</td>
<td>3</td>
</tr>
<tr>
<td>Salbutamol</td>
<td>2</td>
<td>Oregano (C. aromaticus)</td>
<td>1</td>
</tr>
<tr>
<td>Cloxacillin</td>
<td>2</td>
<td>Sambong (B. balsamifera)</td>
<td>1</td>
</tr>
<tr>
<td>Carbocistene</td>
<td>2</td>
<td>Tangan-tangan Tuba (J. curcas leaf)</td>
<td>1</td>
</tr>
<tr>
<td>Alaxan</td>
<td>1</td>
<td>Repolyong Gubat (‘wild cabbage’)</td>
<td>1</td>
</tr>
<tr>
<td>Biogesic</td>
<td>1</td>
<td>Buko juice (green coconut)</td>
<td>1</td>
</tr>
<tr>
<td>Colvan</td>
<td>1</td>
<td>Kamias (A. bilimbi)</td>
<td>1</td>
</tr>
<tr>
<td>Atenolol</td>
<td>1</td>
<td>Tabako (N. tabacum)</td>
<td>1</td>
</tr>
<tr>
<td>Bromhexine</td>
<td>1</td>
<td>Kalamansi (C. microcarpa)</td>
<td>1</td>
</tr>
<tr>
<td>Planax</td>
<td>1</td>
<td>Malasuka (‘vinegar like vine’)</td>
<td>1</td>
</tr>
<tr>
<td>GenTeal eye drops</td>
<td>1</td>
<td>Balon-balunang Manok (See below)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kagun (See below)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals (N=73)</strong></td>
<td><strong>46</strong></td>
<td></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

Full translations: Pulot (honey); Talbos ng Bayabas (guava leaves/psidium guajava); Bawang (garlic, Allium sativum); Tawas (alum, hydrated potassium aluminium sulfate); Oregano (oregano/suganda/Coleus aromaticus); Sambong (blumea camphor/Blumea balsamifera); Tangan-tangan Tuba (leaves from Jatropha curcas); Repolyong Gubat (no English equivalent name, though it literally means ‘wild cabbage’); Buko (Green coconut); Kamias (cucumber tree/Averrhoa bilimbi); Tabako (leaves of Nicotiana tabacum); Kalamansi (calamondin orange/Citrus microcarpa); Malasuka (no English equivalent name, though it literally means ‘vinegar-like vine’); Balon-balunang Manok (no English equivalent name, though it literally means ‘chicken gizzard plant’); Kagun (is a complex concept, although in the general sense, it refers to the consolidated system of traditional Aeta spiritual beliefs of the eternal opposition of good and bad, the traditional practitioner who administers the healthcare, or the ritual itself).
Figure caption

Figure 1. A representatively healthy Aeta Magbukún family in Mariveles, taken around 2010. Photo by Nathaniel Salang.