Weaving Women's Health:

A Qualitative Study into the Health of Hand-Weavers in Iliomar, Timor-Leste

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Acronyms

ADL	Activities of daily living
CTKDS	Cooperative for Tais, Cultural and Sustainable Development
ETWA	East Timor Women Australia
MS	Musculoskeletal
OT	Occupational Therapist
PT	Physiotherapist
TB	Tuberculosis

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Photos in this report by Sally Gray unless otherwise credited.

Preface

Timor-Leste sits amongst the isles of the Malay Archipelago just 600km north of Australia. Courageously gaining independence in 2002, its people are working to reduce poverty, build a sustainable economy and improve their access to health and education.

Timor-Leste is ranked 140th on the UNDP Human Development Index of 177 countries; it is one of the poorest countries in Asia. More than 40% of the population lives below the poverty line with significant variations between districts[1]. The fertility rate is amongst the highest in the world. On average one woman gives birth to more than 7 children in her lifetime. Basic medical care, pre and anti natal care are lacking, particularly in rural communities contributing to the extremely high maternal and infant mortality rates. Statistics paint a depressing picture but change-focused programs offer much hope.

The Cooperative for Tais, Culture and Sustainable Development (CTKDS) was formed in 2007. It is run and operated by women for women. It draws its 78 members from three weaving collectives situated in remote communities on the southeastern tip of the island; one in central Los Palos and two in the mountainous sub-district of Iliomar. They come from some of the poorest and most disadvantaged families in the region. Approximately 25% of members were widowed during the Indonesian occupation; literacy is very low and many members have limited access to farmlands. The Cooperative's mission is to strengthen the cultural and economic base of communities in Lautem through cooperative development, education, advocacy and alternative health programs.

ETWA is an Australian-based, volunteer organisation working to support the women involved in CTKDS. The partnership focuses on traditional textiles as a medium for cultural maintenance and poverty reduction. Hand-weaving textiles known as tais is an important practice that brings generations of women together. It is fundamental to the strong sense of cultural identity and community still alive in Timor-Leste despite decades of colonisation and conflict. Although the simple back strap loom method used by weavers can cause serious pain, for many women it is the only means they have to earn a living. As the fundamental aim of CTKDS and ETWA partnership is to improve the quality of women's lives, the negative impacts of weaving must be acknowledged and understood.

This was the thinking behind the study and what better place to start than in dialogue. The methodology allowed the weavers to voice *their* health concerns within *their* socio-cultural understanding and experience, whilst also allowing the research team to identify the prevalence of wider health problems within *their* socio-cultural understanding and experience. This is a major strength of the CTKDS-ETWA relationship. We work together acknowledging that we each have something valuable to give and receive.

The study was undertaken in dialogue with CTKDS members. The development of initiatives aimed at improving their health will also be undertaken in similarly close dialogue.

[1] http://www.who.int/whosis/mort/profiles/mort_searo_tls_timorleste.pdf

Executive Summary: Key Findings & Recommendations

This study was proposed by ETWA to investigate the health issues faced by women weavers in three associated weaving groups, collectively known as the Cooperative for Tais, Culture and Sustainable Development (CTKDS). CTKDS was formed in 2007, although many members had worked with ETWA since 2005. The Cooperative is based in the rural district of Lautem in Timor-Leste and has a combined membership of 78 hand-weavers. One of the principal activities of CTKDS is the weaving of tais, the traditional cloth of Timor-Leste.

Cooperative members had informed ETWA that they were experiencing health issues related to weaving. These issues cannot be dismissed when considering how to improve productivity for their enterprise. An example is the musculoskeletal problems created by using the back-strap loom, the common method for weaving in Timor-Leste. Health conditions associated with weaving have been reported in other international settings but none has addressed the context specific to Timor-Leste. Other health issues, which could compromise the quality of members' working lives have also been voiced by the women.

The aim of the study was to obtain information about health issues that affect the working lives of women in three weaving cooperatives in Timor-Leste. The findings generated will inform the development of health initiatives aimed at addressing these issues and improving the overall well-being of the women.

The objective of the study was to generate data from the weavers' perspective on (i) health issues experienced by the women that affect their working lives, and (ii) aspects of their weaving work that may be contributing to ill-health.

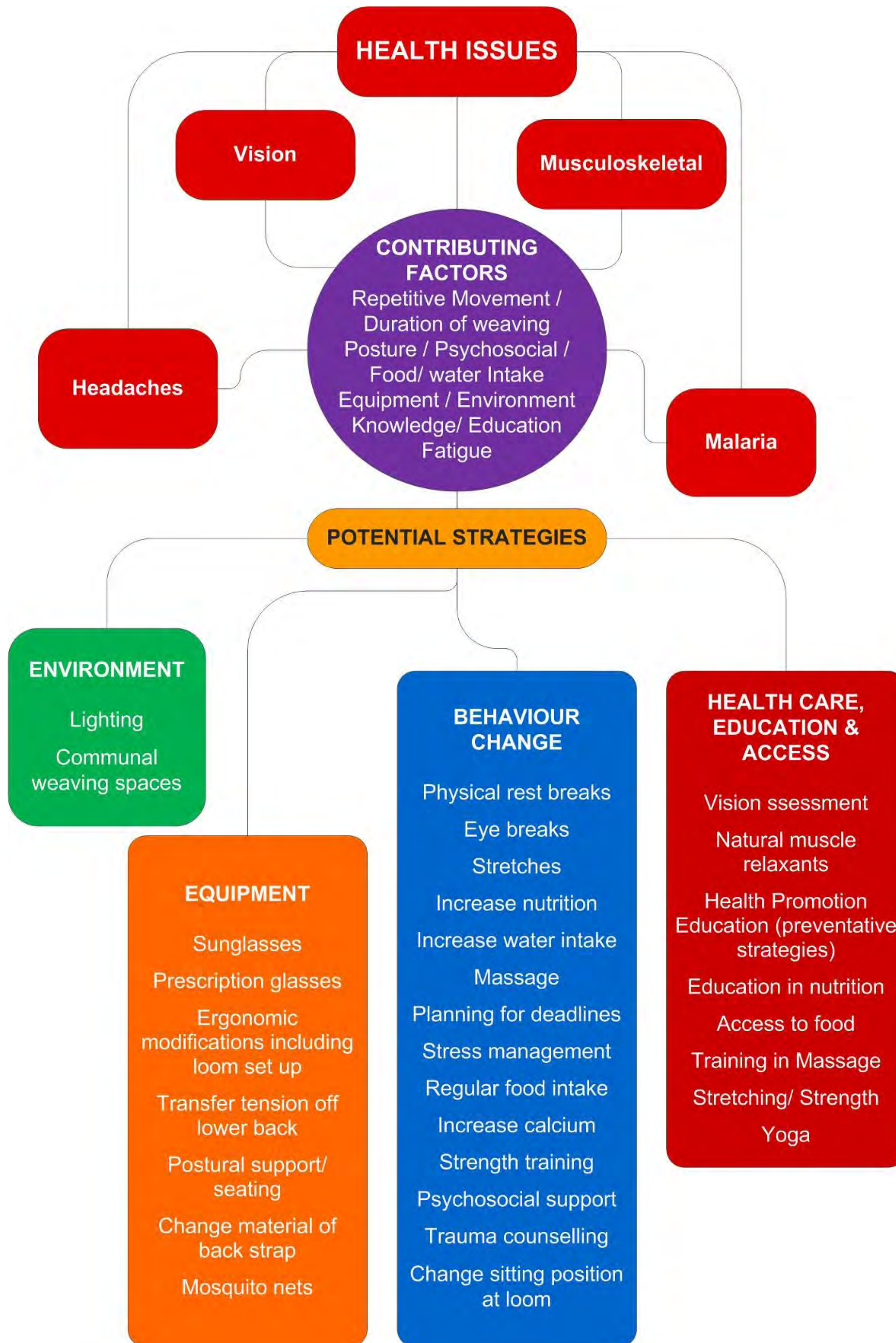
Qualitative research methods and participatory processes were employed to define health problems from the perspective of the women following the principles of rapid rural appraisal. Information was obtained via two focus group discussions, individual in-depth interviews with one weaver and two local health practitioners, observation of the weaving process and five individual assessments with weavers.

Results: Musculoskeletal problems were widespread amongst the women and were found to be exacerbated by both weaving and the activities of daily living. Poor eyesight and malaria were also frequently expressed health concerns. Barriers to accessing health care included distance to health centres and lack of transport, limited availability of medicines, financial constraints and lack of knowledge about preventative health. Overall the limited resources available to the women contributed to their health problems. Given the poverty, weaving was not an optional activity that could be abandoned due to ill health.

Among the suggested strategies for health improvement arising from the findings of the research are health education to encourage behaviour change, modifications to weaving equipment and modification to the environment in which women weave.

> *"…women with these problems tend to be 30-40 years old rather than 60-70…"*
>
> Discussions with local health practitioner, Iliomar June 2010

Diagram 1: Summary of Issues, Factors and Potential Strategies



Please note: see Results section (p14) and Discussion (p25) for extended discussion of Table 1.

The Hand-Weaving Process

Weavers in Timor-Leste use simple back strap looms, which are inexpensive and easily constructed using local timbers. The back-strap is attached to the loom and wrapped around the weaver's lower back (Figure 3). With the warp stretched out in front of her, the weaver maintains the tension on the cloth by leaning back and keeping her legs extended and straight during the weaving process (Figure 1). To make changes to the cloth, she releases the tension on the loom by bending her knees and leaning forward (Figure 2).

Figure 1:

The position of the loom during weaving

Photo by Sophie Miller

Figure 2:

The weaver leans forward to release the tension on the loom

Photo by Sophie Miller

Figure 3:

Rear view of the back-strap

Photo by Sally Gray

Research Motivation & Approach

ETWA has come to realise that helping CTKDS members improve their health is critical to the sustainable development of their enterprise. In particular we aim to help them address the musculoskeletal problems created by using a back-strap loom. Other complaints voiced by Cooperative members are also cause for concern, such as poor eyesight, malaria and lack of food. However, other than anecdotal evidence and generalisations from the poor state of health in Timor-Leste, little is known about the ill-health experienced by these women and how it affects or is affected by their work [1,2].

Studies investigating the prevalence of rheumatic disorders in developing countries have revealed that musculoskeletal disorders are frequently attributable to occupational activities and also interfere with the capacity to work [3,4]. Whilst there are some reports in the literature of occupational health issues associated with the weaving of carpets, none addresses the method of weaving typically used in Timor-Leste [4,5,6,7,8,9,10]. A study of women's health problems from Thailand also reports back-ache exacerbated by weaving. The poor socio-economic condition of these women usually dictated that they continue working despite the pain, often resorting to inappropriate medication, such as antibiotics, for pain relief [11].

A formative study was therefore thought necessary to explore the health issues pertinent to the women involved in CTKDS. The use of qualitative methodology that employs participatory techniques ensured that the findings were generated from the women's own perspective. This allows the women themselves to define health issues in their own language and to decide which have the greatest impact on their working lives [12,13].

Thus, the study was an attempt to qualify rather than quantify the health issues experienced by women weavers within CTKDS. Whilst quantitative data is essential for establishing the prevalence of a problem it doesn't necessarily reveal the issues that are of greatest importance for the women. As the ramifications of ill-health often go beyond the expression of mere symptoms, qualitative data was considered necessary to establish ill-health within the context of the women's lives.

Ideally, it is hoped that the participatory exercises used to collect and analyse the data helped the women to feel a sense of ownership of the results, thereby generating ongoing interest in future research aimed at developing intervention strategies. In addition, enabling the women to identify the problems that are of greatest concern to them ensures that time and resources can be spent on developing meaningful and sustainable interventions. Similarly, health communication will be more effective if problems are defined with local terminology and encompass local understanding [14]. Furthermore, it is hoped that addressing health issues in a participatory fashion will help develop the future capacity of the Cooperative to address other problems they might face with minimum outside help [15].

This study was undertaken as a first step in identifying health concerns that will ultimately lead to strategies for improving the individual health of the women and that of their work-place. This will enable women to remain involved in weaving, improve productivity and ensure a continual source of income.

Whilst the nature of the research design means the generalisability of the data is limited, we also hope that the findings can be utilized by other groups; weaving is a common activity amongst women, and many other weaving enterprises operate throughout Timor-Leste. It is hoped that this report may give some idea of the problems experienced by those similarly occupied and motivate other attempts to improve the working lives of women in Timor-Leste.

This report is a condensed version of the document *"Report on a Qualitative Health Study Conducted by ETWA to Explore the Factors that Impact on the Health of Women in Three East Timorese Weaving Co-operatives"*. A copy of the full report is available from ETWA.

Aims and Objectives

The aim of the study was to obtain information about health issues that affect the working lives of women in three weaving groups in Timor-Leste. The findings generated will inform the development of health initiatives aimed at addressing these issues and improving the overall well-being of the women.

The objective of the study was to generate data from the weavers' perspective on (i) health issues experienced by the women that affect their working lives, and (ii) aspects of their weaving work that may be contributing to ill-health.

Methodology

The study used qualitative methodology to generate informative data in a limited time frame whilst engaging participants in the process [16,17]. Members of the three weaving groups that make up the Cooperative for Tais, Culture and Sustainable Development (CTKDS) were involved in the study:

1. Feto Ki'ak Buka Moris" Poor Women Looking for Life", Los Palos. 24 members.

2. Materestu "The Survivors", Fuat village, Iliomar. 36 members

3. Feto Faluk Buka Moris "Widows Looking for Life", Cainliu village, Iliomar. 18 members.

Data collection methods included:

- Focus group discussions
- Individual in-depth interviews with weavers and local health professionals
- Individual assessments and observations

A pilot focus group was conducted with women from the Feto Ki'ak Buka Moris group based in Los Palos, which enabled the research team to modify the question guides. This was followed by two focus group discussions with members of the Materestu and Feto Faluk Buka Moris weaving groups in Iliomar. Responses from the weavers were translated into English as the focus group discussions progressed for the benefit of the four Australian note takers, and later compared for consistency. Analysis was performed using a thematic approach; common themes were identified and coded and the key points summarised.

The key points were then presented back to members of the two focus groups in feedback sessions. This aimed to verify the data and in the process inform participants of the findings. The women were asked to indicate, and comment on, any findings that they considered did not accurately reflect what they had said. Findings from the discussion groups and interviews were compared with those from the musculoskeletal assessments carried out by two members of the research team; a Physiotherapist and the Occupational Therapist.

The individual in-depth interviews were carried out with an experienced weaver and key member of Feto Faluk Buka Moris in Cainliu (approx 45 years of age and married with 8 children), a Cuban doctor stationed at the local hospital in Iliomar and a Cuban doctor stationed at the local hospital in Los Palos.

A qualified Physiotherapist (PT) and Occupational Therapist (OT) conducted individual assessments with five weavers, the details of which are summarised in Table 3. Interviews

were conducted to identify musculoskeletal pain, the nature of the pain and the interactions between pain and activities of daily living.

Members of the research team had opportunities to observe the weaving process; from yarn and dye preparation through to weaving at the loom. An ergonomic assessment of working at the loom was also carried out by the Physiotherapist and Occupational Therapist.

As accommodation during the health study was in weavers' homes, this enabled observation and participation in activities of daily living, such as food preparation and water collection, and observation of living conditions.

Focus group discussions, individual assessments and the in depth interview with one weaver were conducted in Tetum. It should be noted that not all the participants involved in the study were fluent in Tetum, particularly many of the older women. The native language of Iliomar is Makalero and Fataluku is the native language of Los Palos.

The in depth interviews with the Cuban doctors, however, were conducted using a mix of English, Spanish, Tetum and expressive sign language as Tetum was not a native language to either the doctors or the researchers.

"We are all talking with one voice"

Focus group, June 2009

Cooperativa Tais, Kultura, Dezenvolvimento Sustentavel
Growing sustainable development through the hands of women
Lautem District, Timor-Leste

Table 1: Details of Participants for the Focus Group Discussions

Focus Group Discussion	Part.	Village	Age (yrs)	Marital Status	No. Child.*	Education Level
Focus Group 1 – location Fuat (weavers >30yrs)	P1	F	48	Married	3	NG
	P2	F	49	Widow	0	NG
	P3	C	~50	Married	6	NG
	P4	C	40	Married	2	NG
	P5	C	50	Widow	5	NG
	P6	C	40	Married	6	NG
	P7	F	44	Remarried	9	NG
	P8	F	30	Married	6	NG
	P9	F	44	Married	7	NG
Focus Group 2 – location Cainliu (weavers <30yrs)	P1	C	20	Engaged	0	Senior High
	P2	C	16	Single	0	Junior High
	P3	C	16	Single	0	Junior High
	P4	C	16	Single	0	Junior High
	P5	C	16	Single	0	Elementary
	P6	C	14	Single	0	Elementary
	P7	F	21	Married	2	Elementary yr4
	P8	F	20	Married	1	Elementary yr6
	P9	F	17	Single	0	Elementary yr5
	P10	C	24	Married	2	Junior High
	P11	C	29	Married	4	Junior High

F – Fuat; C – Cainliu; NG – Not Given; Elementary, 6-12 yrs; Junior High, 12-15 yrs; Senior High, 15-18 yrs; *may include children not directly related if under a woman's care

Table 2: Details of Participants for the Individual Assessments

Part.	Age	Village	Focus group discussion	Formal Education
1	20	Cainliu	2	Yes
2	29	Cainliu	2	Yes
3	44	Fuat	1	No
4	48	Fuat	1	No
5	53	Cainliu	-	No

Participants 1 and 2 had both received formal education, starting but not completing secondary school. The older women had not received any formal education and were unable to read or write.

Results

Health Issues According to the Weavers

The following information summarizes data from the focus group discussions and individual in-depth interviews with weavers. The results are grouped into 6 key areas:

1. Musculoskeletal health problems
2. Malaria
3. Health problems involving eyes
4. Other health problems
5. Access to health care
6. Other comments

Please note: text in italics are taken from the research teams' notes

1. Musculoskeletal Health Problems

Musculoskeletal problems associated with weaving

Pain is felt through most areas of the body including lower back, shoulders, neck, arms, hands, legs, and buttocks. One participant mentioned the lower abdomen.

Musculoskeletal pain was linked to weaving by the focus group discussion participants. *"…start weaving from 7 yrs old so backache begins then, so every woman suffers from backache because every woman weaves"*. Musculoskeletal pain becomes a chronic problem as the women get older. It is worse if they spend a long time weaving without breaks. This is more likely to occur if they are trying to meet a deadline for both commercial sales and for cultural ceremonies (for example a death of a community member).

As weaving is an important source of income and plays a key role in ceremony, often they cannot simply stop when they have pain: *"…no medicine to relieve the pain but have to keep doing it because poor"*. If they have a deadline, they will weave for most of the day only taking breaks to do home duties and often skipping meals: *"She will start in the morning, sometimes not have lunch and weave through into the evening"*. The younger women will do their weaving after school, if necessary in the evening by candle or kerosene lamp-light. Mostly they weave in their own homes, but they will also sit on the verandah or under a tree.

The weaving position contributes largely to the pain; they sit on the floor for a long time with arms extended and with neck and back bent over their work as illustrated in the images on page seven. Image 1 also shows how the body is used to maintain tension within the loom and images 2a and 2b demonstrate the lack of support to the small of the back and the pressure exercised on it from the strap. Location also plays a part; if weaving outside they can get cold and this exacerbates the aches. Once they have begun feeling pain they do not have conventional medicine to treat it. This last statement was followed up in both feedback sessions: In Fuat we were told that *"the pharmacy has medicine but they don't have money"*, in Cainliu we were told that they *"will go to hospital to get medicine"*. It is worth noting that Cainliu is much closer to the hospital than Fuat.

Musculoskeletal complaints associated with activities other than weaving

Musculoskeletal complaints are also a result of the other duties that women frequently perform around the home, garden and field, eg. taking care of children, carrying heavy loads like firewood and water, building walls and fences, planting fruit and vegetables, pounding corn. These are considered women's responsibilities and therefore can't be avoided. Women accept the fact that there will be pain associated with these tasks.

Importance and perceived prevalence of musculoskeletal complaints

Musculoskeletal complaints are experienced by all women because of the activities that they are required to carry out each day. The constant nature of this chronic pain makes it an important health issue, particularly because these activities cannot be avoided. For most young women backache is not serious enough to prevent them from going to school.

Summary of causes of musculoskeletal complaints

- Bodily position, duration and repetition of weaving activity
- Location of weaving activity (can get chilled if performed outside)
- Other physically strenuous tasks such as carrying heavy loads and performing manual labour
- Lack of conventional medicine to treat pain

Current methods for dealing with musculoskeletal complaints

Taking a break from weaving allows the pain to ease. Some women will stretch to ease the pain. Treatment includes massage with oil and native plants or bathing with plant infusions. Alternatively the women will go to the hospital to get medicine for the pain.

Summary of current methods for dealing with musculoskeletal complaints

- Taking a break from weaving
- Stretching during weaving
- Massage
- Herbal remedies
- Medicine from the hospital

> *"Sometimes I take a break but sometimes I forget. I also forget to eat and drink so I get a headache"*
>
> Focus group participant, June 2009

2. Malaria

Importance of malaria and perceived prevalence

Malaria is common among the women. When they are suffering from malaria they have to stop weaving: *"… when they have fever they shake and can't weave"*.

Cause

There is awareness amongst some of the women that mosquitoes cause malaria and that they breed in water. It was also stated that skipping meals makes them more susceptible to malaria: *"If you don't eat and just work you get weak and it's easier to catch malaria"*.

Current prevention

Mosquito nets were identified as one method of protection; however, prevention for malaria was generally not specified but rather related to general good hygiene (including practices such as covering food and washing hands). This was only recounted by the younger women and the feedback session suggested that this was an education program provided at school and by health workers.

Current methods of treatment for malaria

Initially they will go to the hospital for treatment for malaria. If they are unable to get to the hospital or the hospital treatment doesn't work they will try traditional remedies. The most common traditional remedy for malaria appears to be papaya leaves. The older women may know other traditional remedies in addition to papaya leaves.

Note: It was revealed in the feedback session that they do not use mosquito nets because they are not available in Iliomar (only Los Palos) and that they do not have the necessary funds to purchase them. They also do not like to wear long sleeves in the evening when it is hot.

Summary of knowledge of and current strategies for dealing with malaria

There is some knowledge about the involvement of mosquitoes. They recognise that poor eating practices make them more susceptible. Young women will employ general good hygiene practices (not specific to mosquitoes) for prevention. Conventional medicine from the hospital is the preferred treatment. Traditional medicine is used if the former is unavailable or unsuccessful.

"If you don't eat and drink and just work you get weak and it's easier to catch malaria"

Focus group participant, June 2009

3. Health Problems Involving Eyes

Poor Eyesight is experienced by some of the older women and this makes it difficult to weave or affects the quality of their weaving. They don't know what to do about poor-eyesight: *"If they have poor eyesight they can't do anything [about it]"*. Some have tried using donated non-prescription glasses. If these don't work they will discard them. The young women also stated poor eyesight as an additional problem that affects weavers, and admitted to weaving in the evenings with poor lighting: *"We will weave in the evening by candle or kerosene lamp"*. When they suffer from "red eyes" (interpreted as conjunctivitis and confirmed in the feedback sessions) they will go to the hospital. The hospital appears to be the preferred choice before trying traditional medicine for eye problems.

4. Other Health Problems

Other health problems associated with weaving

Skipping meals to continue weaving gives the women stomach ache and headaches: While weaving they get bitten by mosquitoes. They also experience what sounds like fever ("hot and cold"). The young women in particular get tired if they have to weave in the evenings after school.

Additional health problems and their effect on weaving (and schooling)

Only the young women offered suggestions about additional health problems: they experience headaches and migraine, menstrual cramps and stomach cramps. They also experience dizziness and numbness, and suffer from chills, malaria and eyesight problems. Malaria and stomach cramps are serious enough to stop the girls from going to school. The problems listed as most important were stomach ache, numbness and headache/migraine.

Causes of additional health problems (other than malaria and eyesight)

Young women cited the following as possible causes of other health problems: Stress/worry, erratic eating behaviour: *"Sometimes they don't eat and this gives them pain in their stomach and headaches and chills"* (a probe to ascertain why they do not eat confirmed, *"they don't eat while they are weaving because they forget"*), the location where weaving takes place (outside appeared to be more problematical), and remaining seated for too long (causing dizziness on rising). One participant identified working in the fields as a cause of health problems although the exact nature of the problem (described as 'fever') was not clear.

> *"… Timor-Leste needs an education program for preventative health, especially for older women who can't speak Tetum"*
>
> Discussions with local health practitioner, Iliomar June 2010

5. Access to Health Care

Who women talk to about health issues

When women have health problems they will talk to family members, go to the hospital/clinic, refer to someone who knows about traditional medicine or see a "matan dok" (spiritual healer). They did not consider there to be any health problems that were too sensitive to discuss nor did they feel shy about talking about their problems.

Access

People can generally rely on a strong family network when they are sick and family members will go for help. There is a hospital in Iliomar and a clinic in Cainliu and health workers will come out to the village (it was not clear if this was a doctor, nurse or other). A referral for further treatment is easy to get if needed. The women are happy with the service at the hospital (explanations and advice) and the medicine is free and limited. They also use traditional remedies and massage. Support is also available from elders who are more knowledgeable about traditional remedies and also from the "matan dok".

Barriers to access

The hospital in Iliomar is several kilometres from the villages, particularly Fuat; they have no transport and it takes a long time to walk, *"it is difficult to get transport to get to the hospital in Iliomar - to walk it is a long way"* and of course the women are already ill when they need to go. The doctor is not always at the hospital or is too busy to come out to the village. The doctor that staffs the Cainliu clinic works in three different locations and so is not always present at Cainliu. It was also inferred that medicine was not always available at the clinic, with the Doctor having to obtain it from Iliomar and Los Palos.

The women cannot afford to pay for medicine from an alternative source (such as the pharmacy) should it not be available at the hospital. Medicine in general is difficult to access. If referred to the hospital in Los Palos the ambulance is free but it is very expensive to get the body of a deceased relative returned to the village for burial.

The older women in particular have insufficient knowledge to address their health problems telling the research team that, *"they are uneducated and so can't be specific about their illnesses. If we know what they are then please tell them"*. They wanted the research team to identify their health problems and to suggest solutions.

Weavers' suggestions to improve access

Older women in particular just wanted to be given medicine but some were open to an exchange of ideas to help improve their health. A need was expressed for the results to be reported back clearly.

Overall Summary - barriers to health care

- Distance to health centres and lack of transport
- Limitations on conventional medicine available for free
- Lack of money for private medicine
- Inconsistency of available services (presence of doctor, availability of medicine)
- Expense of transporting deceased relatives back to the village
- Limited education and lack of knowledge about health issues, particularly among older women

6. Other Comments

The women in the focus groups agreed that they were *"all talking with one voice"* and endorsed what was discussed within the group.

Health Issues According to Local Practitioners

1. Local Health Practitioners in the Area

Two Cuban doctors were interviewed. The doctor based in Iliomar (Health professional 1) had been there for over a year and was very familiar with the local women, particularly those from Iliomar itself. The doctor in Los Palos (Health professional 2) had only been there for two months but had been previously positioned in Viqueque, another district in Timor-Leste. He was actually a children's doctor but stated that he saw all kinds of patients. Both spoke Spanish as a first language and could speak some Tetum and English.

2. Musculoskeletal Complaints observed by Health Practitioners

It is difficult to state accurately the number of women that are suffering from musculoskeletal complaints as many do not present at the hospital. Weaving is only one of the contributing factors (*"…weaving causes pain in the [shoulders, lower] back and legs from the position sitting in whilst weaving"*); also responsible is the hard work performed in both the home and field, with little opportunity to take time out to rest. A poor diet also exacerbates the problem: *"…caused by poor diet, just vegetables, and heavy work - women work very hard in both home and garden"*. As a result of poor and physically demanding lives musculoskeletal problems generally present in much younger women in Timor-Leste than you would see in their developed country counterparts: *"…women in ET with these problems tend to be 30-40 yrs old rather than 60-70…"*.

3. Other Health Complaints

Other health problems are more prevalent than musculoskeletal disorders and generally are considered to be of more importance, ie. malaria, skin and parasite infections, respiratory disorders, tuberculosis (TB) and malnutrition. In the opinion of Health Professional 2 the last three are a particular problem for the elderly. Health Professional 2 also mentioned the occurrence of vaginal infections, although the nature of these was not defined.

4. Access to Health Care

The hospital is supported by the Government and donations from international aid agencies and other organisations. Cuba is especially supportive of the government's health system and provides many of the country's health practitioners. Treatment at both hospitals is free but regular aid cannot be relied upon and supplies and services are limited. For instance, painkillers for musculoskeletal complaints are generally restricted to paracetamol and ibuprofen. There appears to be a hierarchy of referral as the services required become more specialised – beginning in Iliomar and referred to Los Palos, then referred on to Baucau, and finally to Dili. Both hospitals provide an ambulance and 'home visit' services for emergencies but again the service is basic and limited: *"The ambulance is really just a car - it doesn't have any equipment in it and it is used for everything"*.

5. Barriers to Access to Health Care

Poverty, lack of transport and limited education appear to be the major barriers to accessing health care. Whilst many of the services are free, the need to keep working leaves few women at liberty to rest when they are unwell. Health Professional 1: *"Women generally keep on working regardless of health problems because it is difficult for them to stop doing home duties. They come to the hospital when they are sick and then go home and continue to work"*; Health Professional 2: *"When they have back ache his advice is to rest for a week but because they are poor they have to work hard"*.

The hospitals themselves are constantly battling with a lack of funds in their struggle to provide even the most basic medical supplies and services. Patients need to be referred to hospitals increasingly distant from home if they require more advanced treatment or tests. Health professional 1 confirmed the reluctance of patients to do this: *"Most of the time they don't want to go in the ambulance to Los Palos"*. The ambulance service is free but transportation of deceased relatives from hospital back to the village must be paid for: *"The ambulance won't bring the dead body back. Require a special car for this and need to pay"*. Health professional 1 confirmed that lack of transport is a limiting factor for most women: *"Most of the women who come to the hospital are from the village Iliomar. Women from other villages are less likely to come because of the lack of transport"*.

The language barrier also creates difficulties; Spanish is the first language of the doctors and many of the villagers, particularly the older generation, cannot speak Tetum. Both doctors highlighted the challenges posed for preventative health from cultural practices and limited education. This was particularly pertinent for the older women: *"It is hard for the women to express their symptoms when they are ill and to understand the cause"*. Health professional 2 noted the advantageous effects on health for the younger women who had received an education: *"Younger women are studying and so their health is better"*. Both doctors advocated for improved health education campaigns: *"… Timor-Leste needs an education program for preventative health, especially for older women who can't speak Tetum"*.

> *"Most of the women who come to the hospital are from the village in Iliomar. Women from other villages are less likely to come because of the lack of transport".*
>
> Discussions with local health practitioner, Iliomar June 2010

Summary of the Findings from the Individual Assessments

The findings from the individual assessments are grouped into 4 categories;

1. Musculoskeletal Pain
2. Activities of daily living
3. Vision
4. Treatment

1. Pain

Common areas of pain included cervical, thoracic, lumbar and sacral spine. Trapezius pain was reported by all participants except for Participant 4. Arms, legs and sitting bones were also areas of pain and numbness and headaches were reported by Participant 2, Participant 3 and Participant 5. Participant 2 reported that she experienced central chest pain. Participant 4 experienced lower abdomen pain. The cause of these two symptoms is unknown. The nature of the pain varied between the different participants. For Participant 1 and Participant 2 the pain was mechanical. They reported that their pain manifested during their ADL and usually subsided after the activity was ceased. Participant 2 reported that she occasionally experiences some persisting pain in the evenings. Participant 3 and Participant 5 reported that they experience chronic back pain.

Participant 2 and 5 reported frequent headaches. Participant 2 reported that the headaches were aggravated by long periods of weaving.

2. Relationship Between Pain and Activities of Daily Living (ADL)

The women all described similar activities of daily living. These include weaving, caring for children and other family members, cooking, housework, feeding animals, tending to the garden and working in the fields, carrying water and food, and building fences. All the participants except for participant 1 were mothers.

Participant 1 reported that all her ADL, except for cooking, contribute to pain. Participant 2 reported that weaving, pounding corn, tilling soil, planting vegetables and tending to the garden all cause pain.

Participant 1 and Participant 2 reported that they take breaks when they have pain during ADL. Sometimes there is a deadline for weaving, so they continue in spite of pain.

3. Vision

Participant 1 reported eye-strain and fatigue during long periods of weaving. This subsides when weaving is ceased. Participant 2 reported that she has no visual disturbances. Vision was not discussed with Participant 4. Participant 3 and Participant 5 reported vision loss, with both experiencing difficulty with near vision, particularly in low light. Participant 5 can no longer weave in low light conditions and, even in good lighting, relies on memory and touch to be able to weave. Participant 5 also experiences glare sensitivity. Participant 3 reports that she wears glasses for detailed weaving.

4. Treatment

Three of the participants reported using traditional recipes to make medicinal oil, which is applied and massaged on the areas of pain. Participant 5 has been to the hospital for medication and was prescribed antibiotics. Participant 1 reports that she can heal her own ailments. She did not give details of how she does this; however, she stated that she is a spiritual healer in the community.

Table 3: Ergonomic assessment of weaving loom

Position	Poor back support on loom – material is thin and rough. Does not support natural lumbar curve Sitting with legs straight enhances lumbar lordosis, putting strain on sciatic nerve, hamstring muscles and lumbar discs. Furthermore, the posture continues up the spine, increasing the cervical lordosis and, hence, the pressure through the cervical discs, posterior cervical muscles and facet joints
Technique	Repetitive lifting of the weaving batten leads to strain through dominant arm's rotator cuff tendons in shoulder, tightens trapezius and cervical musculature Holding of the weaving batten leads to strain through forearms and wrists with gripping Pulling vigorously with the weaving batten causes stress through shoulders and forearms from grip and pull and force through low back to support counterforce
Vision	Close work in poor lighting

Parts of a Back-strap Loom

Figure 4: Parts of a Back-strap Loom

A: a cord or rope is used to tie the loom to a tree or post.

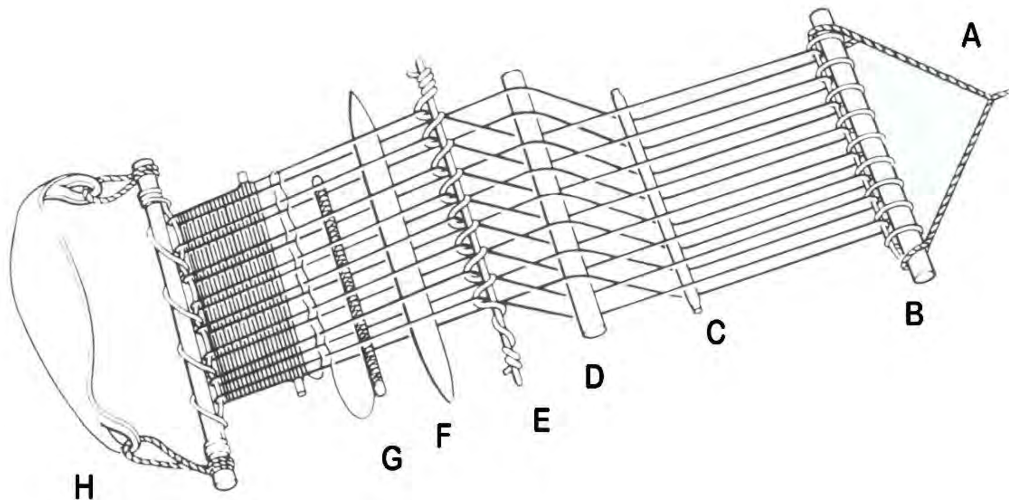
B: end bars used to hold the warp (vertical threads) to the upper & lower ends of the loom.
C & D: shed rods maintain the crossing of the warp's threads

E: the heddle rod lifts alternate threads of the warp.

F: the weaving-batten helps to separate alternate threads of the warp to allow the bobbin (G) to pass through them. The batten can also be used to tighten the weft (horizontal threads) as they are woven.

G: the bobbin, containing the thread of the weft, passes from side to side between the warp threads.

H: this belt is worn around the weaver's back and connects her to the loom. The weaver controls the tension on the warp by leaning backward or forward.



Source: http://www.mayantraditions.com/Mayan_Weaving_s/14.htm

Discussion

The results obtained make it clear that musculoskeletal disorders are a common complaint for weavers and that currently the women have few effective strategies to prevent or treat them. Furthermore, a combination of physically demanding lives and a poor diet contributes to this complaint developing at a relatively young age compared to developed countries. The length of time spent weaving and the position of the body at the loom are the main factors contributing to the development of musculoskeletal problems. Other complaints associated with weaving appear to arise from poor eating habits and where the women weave, with many members resorting to weaving outside, or inside with insufficient lighting. Eyesight problems were identified as a significant issue with important implications for weaving, and malaria also appeared as a key complaint which interferes with their working lives.

Significant barriers to health access include lack of money, limited availability of medicine and lack of transport. Mosquito nets, one of the basic defences against malaria, are not easily accessible to the women. Education, and its implications for improved health, was also highlighted by the findings.

Some anticipated health issues were not mentioned by the women. A probe about respiratory complaints (and respiratory discomfort from cooking fires) was dismissed as inconsequential during on individual in-depth interview, despite it being raised as a problem by health practitioners; *"cooking with a wood fire [does not] cause problems because [I] know how to minimise the smoke"*.

Also of interest was the silence on tuberculosis (TB). In the formative stages of the study the chief researcher was told that TB was a "hidden" health problem by a co-operative member. Whether this is because the illness is taboo or people do not consider it important (or prevalent) is unclear. Interviews with the health practitioners again supported the fact that it is a widespread problem in Timor-Leste and that insufficient knowledge about the behaviour of the disease is a factor in its spreading. Addressing TB is beyond the scope of an organisation like ETWA, however, its absence in the responses of participants serves as a reminder that the information garnered by focus group discussions can be limited. It also highlights the importance of education campaigns for successful health promotion.

As a general rule information obtained from the Individual in depth interviews backed up the responses given in the focus group discussions. Interviews with the health professionals revealed health issues not mentioned by the women, such as TB, respiratory disorders and skin infections, but also confirmed health issues that were raised, such as musculoskeletal complaints and malaria. As the focus of the study was on health issues related to weaving it is possible that certain health problems were not brought up because they are neither caused by, nor interfere with, weaving activity. Alternatively, the women involved in the study may not have experienced those health issues as a significant problem. This may reflect co-operative members as a whole; however, it might also reflect sample bias as a result of using a small non-randomly selected group of participants.

Information given by Health Professional 1 in relation to the transport of deceased bodies supported that given by the women in focus group discussion 1, *"…the ambulance is free while you are still alive"* (key member of focus group) but contradicted the information given by Health professional 2. Health professional 2 considered this service to be free of charge. It is possible that Health professional 2 is unfamiliar with the arrangements for transporting the deceased (he had only been at the hospital in Los Palos for two months); it may be

different for around Los Palos itself or the cost may be related to distance (Health professional 1 was based in Iliomar, the location of the two villages). The veracity of this point is of utmost importance as the prohibitive cost of transporting deceased relatives back to the village appears to play a significant role in putting women off going to hospital for serious complaints. For the East Timorese, it is culturally important to be buried on the land that you came from.

The following table is a summary of the health issues identified in the individual assessments and recommendations developed by the physiotherapist and occupational therapist. All of the health issues discussed below were also reported in the focus group discussions. This is not an exhaustive list of recommendations however it provides some ideas for discussion with the weaving groups.

Table 2: Summary of Concerns, Contributing Factors & Recommendations

Health Issues	Contributing Factors	Recommendations			
		Environment Modifications	Behaviour Change	Equipment	Health Care, Education & Access
Headaches Vision Musculo-skeletal pain (neck, trapezius, low back, buttocks, legs, arms) Malaria	Repetitive movement Duration of weaving Posture Psychosocial Food/ water Intake Equipment Environment Fatigue Knowledge/ Education	Lighting Communal weaving spaces	Physical rest breaks Eye breaks Stretches Increase nutrition Increase water intake Massage Planning for deadlines Stress management Regular food intake Increase calcium Strength training Psychosocial support Trauma counselling Change sitting position at loom	Sunglasses Prescription glasses Ergonomic modifications including loom set up Transfer tension off lower back Postural support/ seating Change material of back strap Mosquito nets	Vision assessment Natural muscle relaxants Education on health promotion (preventative strategies) Education in nutrition Access to food Training in Massage Stretching/ Strength Yoga

The research team did not have an opportunity to discuss medications with a local chemist. No information was obtained on drugs used for self-treatment by the women. It was noticed that drugs only obtainable via prescription in Australia were on prominent display in the pharmacy.

There are a number of difficulties associated with cross-cultural research and the potential bias created by these should always be borne in mind when designing the study and considering the results [21,22]. Potential biasing influences that have been considered include the following:

A lack of fluency in Tetum for some of the participants in focus group discussion 1 presented translation difficulties during this discussion. Of the nine participants in this group Participant 7 tended to lead the responses. She did make comment during the discussion that she"… *has ideas … but wants her sisters [other women in group] to answer, otherwise if she keeps talking it's like a tree with leaves but no flowers".* In focus group discussion 2, Participant 1 responded most frequently and often became the spokesperson for the group after the group discussed a particular point. Despite the apparent lack of participation by a number of women, they all agreed that they were *"talking with one voice"* and this was confirmed by both groups in the final feedback session.

There is the possibility that the question guides used in the study contained mis-translation errors, which could have altered the intended meaning. A lot of discussion took part with the translation team in relation to the question guides, as they were also involved in facilitating the focus group discussions, and it is hoped that this would have minimized that risk.

The younger women appeared to be more forthcoming in their responses than their older counterparts, which may be a reflection of the composition of their group, their age and/or the fact that they had all had some level of education.

Whilst advice on Timorese culture was regularly sought from the translators, essentially analysis and interpretation of the results was performed by the Australian members of the research team, making the results subject to "outsider" and "researcher bias"; it is equally as likely that research team members had pre-conceived ideas about the answers given.

"It is hard for the women to express their symptoms when they are ill and to understand the cause… younger women are studying and so their health is better".

Discussions with local health practitioners, Los Palos and Iliomar, June 2010

Conclusion

The findings generated from this study will assist ETWA and cooperative members to work together to devise strategies with which to address the health issues. Some of the complaints voiced can be tackled with relatively simple approaches, for instance promoting regular meals, taking breaks from weaving and employing stretching exercises. Other solutions will be more financially challenging, such as finding a way to provide access to prescription glasses for failing eyesight and modifying the looms in order to reduce pressure placed on the body while weaving. One initiative is already underway, with ETWA putting into action the development of weaving centres (a requirement previously wished for by the women), which will address the need for adequate lighting and provide shelter in which to weave. It will also enable the women to weave collectively. A group environment may encourage the women to put into practice healthy habits such as taking rest breaks and eating and drinking well. Ideally the problems to be addressed first, and the approach taken, should be decided on in consultation with cooperative members, while remaining mindful of the constraints that a small volunteer organization such as ETWA operates under.

The participatory nature of the research produced results that are pertinent to cooperative members and the work that they are engaged in. Whilst limited, the findings generated have justified the initial concerns that prompted the study and have provided a firmer foundation on which to base future action. It is conceivable that most, if not all, of the issues expressed in this study are experienced by women weavers throughout Timor-Leste and so the findings can be used to inform other organisations engaged in similar partnerships.

"The Australian Government is committed to the implementation of the Millennium Development Goals—agreed targets set by the world's nations to reduce poverty by 2015.

These include halving extreme poverty, getting all children into school, closing the gap on gender inequality, saving lives lost to disease and the lack of available health care, and protecting the environment. These are achievable commitments to improve the well-being of the world's poorest people".
http://www.ausaid.gov.au/keyaid/mdg.cfm

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Weaving Women's Health:
A Qualitative Study into the Health of Hand-Weavers
in Iliomar, Timor-Leste

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