

# Utilizing Chair Massage to Address One Woman's Health in Rural Ghana West Africa: a Case Report

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**Background and Objectives:** There is limited access to health care in rural Ghana and virtually no rehabilitative services available. This situation presents a unique opportunity to utilize chair massage in addressing women's health in rural Ghana, particularly when it comes to muscle pain and fatigue from heavy labor. The objective of this case report is to determine the results of chair massage as a strategy to reduce neck, shoulder, and back pain, while increasing range of motion.

**Case Presentation:** The patient is a 63-year-old Ghanaian female, who was struck by a public transport van while carrying a 30–50 pound load on her head, two years prior. The accident resulted in a broken right humerus and soft tissue pain. A traditional medicine practitioner set the bone, however there was no post-accident rehabilitation available. At the time of referral, she presented complaints of shoulder, elbow, and wrist pain. In addition, she was unable to raise her right hand to her mouth for food intake.

**Results:** The results of this case report include an increase in range of motion, as well as elimination of pain in the right shoulder, elbow, and hand. Visual assessments showed an approximate increase of ROM within the ranges of 45–65 degrees in the right arm, as well as 10–15 degrees in 4th and 5th fingers. There was also a decrease in muscle hypertonicity in the thoracic and cervical areas, and a profound increase in quality of life for the patient.

**Discussion:** This case report illustrates how therapeutic chair massage was utilized to address a common health concern for one woman in rural Ghana. It also demonstrates that pre-existing musculoskeletal disorders and pain may be eliminated with massage intervention. Massage therapy may be important to ameliorating certain types of health problems in remote rural villages in low income countries.

**KEY WORDS:** chair massage; Ghana; shoulder pain; arm pain; women's health care

## INTRODUCTION & BACKGROUND

Carrying heavy loads on the head is known as head-panning, and is a common method of transporting goods in Ghana<sup>(1)</sup> (Figure 1). Ghana is primarily a pedestrian transport society, with women being the primary transporters;<sup>(2)</sup> 94.9% of head-panning in the capital of Accra is done by migrant females.<sup>(3,4)</sup> The average woman will spend approximately 4.5 hours per day head-panning water, wood, and goods they sell, often with the weight of a child on her back and/or while pregnant.<sup>(1)</sup> Heavy loads on the head put undue pressure on the cervical and thoracic spinal column.<sup>(2,5)</sup> This pressure,



FIGURE 1. Woman carrying a heavy load of palm kernels on her head, "head-panning".

combined with limited health care in rural villages, sets the stage for chronic pain and disc degeneration, as well as additional issues in healing after injuries are received.<sup>(2,6)</sup> The widespread problem of neck and back pain among women in rural villages, as well as the inaccessibility to physical rehabilitation services, presents an ideal opportunity to utilize therapeutic massage (TM) as a method of providing potentially health-saving services in rural Ghana. This case report examines the benefits of chair massage for one woman and the necessity of such services in remote locations.

Okurase is a rural, remote village in the eastern region of Ghana. For the past seven years the 3,500 residents of Okurase and the surrounding villages have attended an annual Village Health Outreach (VHO), in order to receive free medical care. The VHO was requested by the community and is crucial due to extremely limited health care in this region. The VHO is sponsored by a nongovernmental organization (NGO) called Project OKURASE ([www.projectokurase.org](http://www.projectokurase.org)) and supported by volunteer faculty from the Medical University of South Carolina.

Ghanaian medical professionals, as well as medical and nonmedical volunteers from other countries, come together to provide a week-long health clinic for anyone who would like to attend. Since its inception, over 1,000 patients per year have been treated during the VHO. During VHO 2015, the organizers were keen to include TM due to the prevalence of the primary complaint of “waist pain”, which refers to neck and back pain. TM has been shown, in previous studies, to attenuate neck, shoulder, and back pain.<sup>(7,8,9)</sup> Patients with shoulder pain have demonstrated significant improvement in ROM, pain, and function through TM.<sup>(8)</sup> An improvement in the quality of life for patients has also been demonstrated with TM.<sup>(10,11)</sup> The inclusion of TM was discussed and approved by the chief, community elders, and the District Health Directorate. Before patients were referred for TM, they completed an intake and vitals check, and were seen by a physician to assure massage was appropriate for that patient.

## CASE PRESENTATION

### Patient Information

The patient is a 63-year-old Ghanaian female market vendor complaining of pain in the right shoulder, arm, and wrist. She could not close her right hand completely and had difficulty raising her right hand to her mouth. The patient had a 57-year history of head-panning. She was referred by a Ghanaian physician for massage therapy to relieve the discomfort in her right arm. The massage intake revealed she had broken her right humerus in 2013. While the patient was “head-panning” approximately 30–50 pounds of

goods crossing the road to the market, she was struck by a public transport van on the right side of her body and attempted to brace her fall with her right arm. She did not go to a hospital or consult a medical doctor. Instead, she saw the traditional medicine practitioner in the village to have the bone set. When the bone was set, the arm was bent across the anterior chest with the right hand taped to her left shoulder with the right fingers on the posterior left scapula. The right arm was then taped into place for approximately three months. No physical therapy or rehabilitative care was provided after the tape was removed because the services were not available. Thus the patient lost a significant portion of mobility in her right arm. Not being able to fully extend her right arm or use her right hand to full capacity has resulted in an isolated social existence for the patient, as social etiquette in Ghanaian culture does not allow using the left hand to eat or give or receive items.

She was experiencing pain at a level 7, using a Numeric Rating Scale of 0–10, in the shoulder, upper arm, elbow, and the wrist. The patient had difficulty closing her right hand since recovering from the accident. In order to bring her right hand to her mouth, she must use the left hand to push the right hand to her mouth (Figure 2). The patient’s desired outcome was to have pain relief in her right shoulder, elbow, and wrist.

### Patient Assessment

There are no medical records of the patient’s injury or the classification of the break. The post injury and premessage assessment was made by the massage



FIGURE 2. The patient demonstrating bringing right hand to her mouth before treatment.

therapist and a Ghanaian nurse. A visual assessment of the patient's Range of Motion (ROM) revealed limited range in the right shoulder, elbow, 4th finger, and 5th finger. Photos were taken by the therapist with a digital camera to record the patient's range of motion (Figure 3). Several of the patient's conditions were caused by the automobile accident and several

were possibly from repetitive use due to head-panning (Table 1). Although this particular client's pain was not directly because of head-panning, the practice of head-panning in her past, beginning at approximately age six, may have had an impact on her healing from the accident. Also, after the accident, not only did she experience a social impact, but there was also a financial impact as she could no longer head-pan and sell her goods.

### Therapist Information and Setting

The purpose of the VHO is to meet the objective of improving health and nutrition in rural Ghana, and takes place in the open-air marketplace with only a tin roof for protection from sun and rain (Figure 4). An American female Licensed Massage Therapist with 15 years of experience performed all treatments using a massage chair in the screened privacy area.

### Treatment Rationale

The massage chair was chosen over a massage table for the following reasons: it is less intimidating for someone who has never received massage, the patient did not have to undress, and cultural modesty was respected. Studies have shown chair



FIGURE 3. Range of motion test for the right forearm of the patient.

TABLE 1. Patient's Conditions

<i>Injuries from Automobile Accident</i>	<i>Areas Affected by Repetitive Use</i>
Limited ROM in Right Shoulder	Cervical Region
Limited ROM in Right Hand	Thoracic Region
Limited ROM in Right Digits	Inflammation in Right Elbow



FIGURE 4. Site of the 2015 VHO.

massage helps increase range of motion (ROM), decrease hypertonicity of soft tissue, diminish pain or discomfort levels, and renew muscular flexibility.<sup>(12)</sup> Chair massage has demonstrated, in one study, to improve pain severity in patients with pre-existing musculoskeletal discomfort.<sup>(13)</sup> With ingenuity, most bodily complaints can be addressed with chair massage, making the massage chair ideal for treatment in remote rural areas.

The majority of the treatments were conducted with the patient fully clothed, seated, and facing the chest pad with her face in the face rest. When receiving treatment on her pectoralis muscles, the patient was seated with her back against the chest pad of the chair. The patient received massage treatments twice a day, morning and afternoon, for four days. She then received massage treatments once a day for three days. A visual assessment of the patient's range of motion was performed in the mornings before beginning the massage sessions. All massage treatments were 60 min in length, with the techniques performed within the patient's level of comfort.

### Treatment Intervention

The initial treatment began with placing an instant gel ice pack on the patient's elbow to help relieve the swelling and she was given an instant gel ice pack to take home and use that evening. A broad, gentle touch was used to perform a palpatory examination of the troubled areas. This examination revealed tenderness in the upper shoulder, elbow joint and wrist. There appeared to be fascial tightness and tissue congestion in the shoulder and around the cervical and thoracic spine. The elbow joint was slightly swollen and luke-warm to the touch.

Morning sessions focused on the shoulder girdle, cervical, and thoracic areas (Table 2). The afternoon session focused on the arm, wrist, hand, and digits (Table 2). The protocols were performed on both sides of the body to address any imbalances. Three daily sessions (Table 2) incorporated both protocols to reassess the tissue and correct any imbalances. The intention was to reduce muscle hypertonicity, myofascial restrictions, and increase ROM. Destructive postural adaptations occur at the four transitional zones (cervicocranial, cervicothoracic, thoracolumbar, and lumbosacral). By assessing and correcting transitional zone decompensations, dramatic postural improvement and the unraveling of complex strain patterns occurs.<sup>(14)</sup> Releasing fascial restrictions can remove pressure from various systems of the body, enhancing relief of pain and improving the quantity and quality of motion and function.<sup>(15)</sup>

### Informed Consent

The patient has graciously given her written permission to share her case and photos to help others.

### Home Health Care

The patient was instructed to practice the new ROM nightly; by gradually moving to the edge of the new ROM, holding for 2 s, releasing and repeating 10 times. Repetitions were performed from the original starting point to ensure adequate blood, oxygen, lymph, and nutrition supply.<sup>(16)</sup>

## RESULTS

### Posttreatment Assessment

The treatments resulted in elimination of pain. On the third day of treatment, the patient was able to bring her right hand to her mouth without using her left hand to push it there (Figure 5). Visual assessments showed an approximate increase of ROM within the ranges of 45–65 degrees in the right arm, as well as 10–15 degrees in 4th and 5th fingers allowing the patient to close her right hand completely (Figure 6, Table 3). While full ROM was not gained, the patient was able to use her right arm and hand.

Hypertonic muscles in the shoulder, cervical, and thoracic regions relaxed, allowing more movement to occur in the right shoulder. The massage treatments and adhering to home care instructions allowed her to eat with unaided right arm movement, and the results exceeded the patient's expectations. The patient was able to return to work and her normal activities, including head-panning.

### Follow-up Care

A local traditional midwife practitioner with no formal training in medicine and none in TM was trained during the VHO to perform bi-monthly follow-up treatments for the patient. The WHO estimates 70%–80% of health care services in Ghana are provided by traditional practitioners.<sup>(17,18)</sup> There are many advantages in teaching TM to these community-based health providers: they are easily available, can be adequately trained to provide appropriate interventions for continuity of care, and have a preexisting health relationship with the community.<sup>(19)</sup> These follow-up sessions will consist of gentle arm stretches, compression, and myofascial techniques in order to allow the patient to regain additional range of motion and develop strength in the right arm. The patient will continue to practice her new ROM on a daily basis.

## DISCUSSION

This case report illustrates how therapeutic chair massage was utilized to address a common health concern for one woman in rural Ghana. It also

TABLE 2. Treatment Protocol

<i>Session</i>	<i>Technique</i>	<i>Area</i>	<i>Intent</i>
M,A,D	Effluage	Back, Arms	General Relaxation
M,A,D	Open-hand Compressions	Back, Arms	Increase Circulation, Warm Tissue
M,A,D	Gentle Kneading	Posterior Cervical Muscles	Increase Circulation, Warm Tissue
M,D	MFR <sup>(15)</sup> Firm, gliding with thumbs	Occipitals	Release fascia
M,D	SCM Release Pincer Compression from Mastoid attachment caudad to insertion.	Sternocleidomastoid,	Decrease Hypertonicity
M,D	Stripping of Scalenes	Scalenes	Decrease Hypertonicity
M	Levator Scapula Release <sup>(14)</sup> Thumb Contact on Levator Attachment at Scapula Repeated 3–5 times	Levator Scapula Superomedial Scapula border To Transverse process	Release Levator Scapula
M,D	MFR <sup>(15)</sup>	Sternum	Release Horizontal Pectoral Fascia
M,D	Pectoralis Release <sup>(14)</sup> Gentle Stretch held to count of 5 and repeated 3–5 times	Pectoralis Major, Pectoralis Minor	Lengthen Pectoralis Major/Minor
M,D	Latissimus Dorsi Release <sup>(14)</sup> Firm Sweeping Motion Cephalad to triceps	Latissimus Dorsi	Lengthen Latissimus Dorsi to help Externally rotate Humerus
A,D	MFR <sup>(15)</sup>	Biceps	Release Fascia Restrictions
A,D	Petrissage/Stripping	Biceps, Triceps	Decrease Hypertonicity, Release Trigger Points
A,D	MFR <sup>(15)</sup>	Hand, Wrist, Forearm Flexors	Release Fascia Restrictions
A,D	MFR <sup>(15)</sup>	Forearm Extensors	Release Fascia Restrictions
A,D	Wrist/Hand Retinaculum Release <sup>(29)</sup> Firm Pressure with thumbs applied from wrist caudad to fingers	Flexor Retinaculum, Flexor Tendons	Open Retinaculum, Release Tendon Adhesions
A,D	Hand <sup>(20)</sup> Dorsal Side: Starting at the base of the hand and working toward the fingers the metacarpals are moved back and forth gently. Palmer Side: Thumb Stripping Caudad to Fingers. Stretch open Palm.	Interosseus Muscles, Lumbricale Muscles	Release Trigger Points, Decrease Hypertonicity
A,D	Fingers <sup>(20)</sup> Mobilize finger joint with traction, Shear lateral-medial and anterior-posterior And rotate at each joint capsule. Compress and knead the web with a pincer-like grip.	Flexors, Extensors	Release Trigger Points, Stretch Fingers
A,D	MFR <sup>(15)</sup>	Arm	Release Fascia Restrictions

M = Morning; A = Afternoon; D = Daily.

demonstrates pre-existing musculoskeletal disorders and pain may be eliminated with chair massage,<sup>(13)</sup> as was seen in this case. Research has demonstrated that massage facilitates a significant increase in ROM, improved function, and decreased pain;<sup>(20)</sup>

the positive results in this case are consistent with these findings. The effectiveness of the treatments was facilitated by the desire of the patient to heal and follow home health care instructions. While this case showed promising results, investigating



FIGURE 5. Patient bringing hand to mouth after treatment.



FIGURE 6. Patient demonstrating range of motion in fingers after treatments.

TABLE 3. Pretreatment and Posttreatment Changes

Areas of Concern	Pretreatment	Posttreatment
Right Shoulder	Pain, level 7	No Pain
	Limited ROM	Improved ROM
	Flexion 90	Flexion 155
Elbow	Abduction 95	Abduction 145
	Pain, level 7	No Pain
Wrist	Pain, level 7	No Pain
4 <sup>th</sup> Finger	Flexion 80	Flexion 90
5 <sup>th</sup> Finger	Flexion 75	Flexion 90

the implementation of the program can shed more light on the issues the project faced; the barriers and facilitators are discussed below.

## Barriers and Facilitators

Implementing massage therapy, a service unknown to the village residents, involved several barriers related to cultural norms and context. In order to overcome these challenges, the following objectives had to be met: understand the social system, engage the local leaders for support, adhere to privacy standards, and bridge the language barrier.<sup>(21,22)</sup>

### Privacy

In Ghana, it is imperative that medical procedures and treatments are done in private. Performing chair massage in the open-air village marketplace resulted in significant privacy issues. To overcome this issue of privacy, a circular screen was constructed to insure the patients were comfortable with the chair massage (Figure 7).

### No Familiarity with Massage Therapy

Relaxation massage is offered in Ghana's larger cities in hotels and spas. Rural residents did not have any experience with massage or the concept that massage helps with bodily functions and pain. The District Healthcare Directorate explained that only three physiotherapists exist in the country and this is the closest they have to therapeutic massage. Prior to the VHO, offering massage was discussed with the village elders and their cooperation was requested, in order to create a sustainable solution for acceptance of TM.<sup>(23)</sup>

At the opening ceremonies for the Village Health Outreach, the Project Coordinator for Project



FIGURE 7. The "massage room" created from cloth screens.

OKURASE explained that massage would be offered to the village residents to assist with “waist pains”, a common complaint of the village. After several elders received massage, the village residents were more open to receiving massage. As other groups in Ghana have indicated, engaging the elders was the single most important factor in the success of the massage program,<sup>(24)</sup> as was also the case with this program. Other studies in the United States have indicated working stakeholders and change agents can greatly alter the acceptance and implication of programs.<sup>(25,26,27,28,29)</sup>

### Language Barrier

As an ex-colony of Great Britain, English is the official language of Ghana. However, Twi is the most widely spoken language in southern Ghana. In Okurase, many tribes and languages are represented, but Twi is the common language by which people communicate. Few people speak or understand English. Those who do understand English do not have much opportunity to practice and grow their English vocabulary and are more comfortable communicating in the local Twi. Local languages in low-income countries may have no equivalent words or expressions for data collection developed in the English language; therefore, using standardized data collection instruments was not practical.

To overcome the language barrier and to help the massage therapist (an American) with cultural guidance, an interpreter was provided. The interpreter was a male Ghanaian nurse fluent in both Twi and English. This interpreter was invaluable to obtaining a health history, stressing the need to follow home care, and achieving the overall verbal success with the patient.

### CONCLUSION

Massage therapy may be important to ameliorating certain types of health problems in remote rural villages in low income countries. Implementing this type of program can be daunting and the help of the local community is required to make it successful. Massage not only helped the patient discussed in this case with pain relief and increased ROM, it also helped with integrating her back into her culture, family, and community. Future research could examine not only how chair massage can help with pain, but also at the best ways for implementing massage programs into rural remote areas. Additional research focused on incorporating chair massage into areas that lack access to health care may ultimately benefit women worldwide.

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### CONFLICT OF INTEREST NOTIFICATION

The author declares there are no conflicts of interest.

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