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Pilot Surveys of Ethics and Short-Term Medical Mission Work: University of Wyoming Agua Salada Clinic, Honduras

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Abstract This research, performed in Agua Salada, Honduras, was done to help identify ethical issues perceived by the recipients of short-term medical missions and to examine how these issues differ between volunteers and patients. Using the four principles of medical ethics (non-maleficence, beneficence, autonomy, and justice) as a guide, patient-participants and brigade volunteers were surveyed using open-ended questions on the ethical aspects of taking western medicine to an underdeveloped region. Both the patient-participants (n=58) and brigade volunteers (n=12) agreed that medical missions should come to Honduras. Interestingly, with questions related to the benefit of medical mission work, volunteers were more likely to report benefit to themselves (60.3%) than to patients. In conclusion, patients and volunteers primarily share common perceptions of beneficence and justice while volunteers are more likely to be concerned with non-maleficence and undervalue indicators of autonomy.

Keywords Medical Ethics, International Medical Missions, Short-term Medical Missions, Honduras, Brigade Volunteers, Pilot Surveys, University of Wyoming, Shoulder to Shoulder

1. Introduction

Medical missions are characterized by a group of people, travelling to a foreign country, seeking to provide medical services, education, or supplies to the people of that country. The nature of these missions varies; often being relief-, surgical-, or dental-oriented or aimed at providing general health services. [1] In recent years, these missions have shifted from a long-term commitment involving the building of structures and sustained medical services to a short-term model where volunteers provide temporary and transient services. [1] The "brigades" providing this care are largely comprised of western- trained and licensed physicians, nurses and other health care professionals whose primary goal is to provide services and education. [2] The nature of the services provided may also vary; one brigade may seek to provide care to those most in need, another might seek to provide services that simply are not available in their destination and yet another may seek to do the most good for the most people with simple and easily-treatable conditions. [3] In general, the intent of most volunteers on these medical missions is to improve the lives of patients in need of care in underdeveloped foreign countries. [3]

Often, the volunteers themselves, a charitable organization, or both, pay for these trips. [2] Additionally, a majority of brigades work with non-governmental organizations (NGO) to facilitate these trips and maximize the benefits for everyone. [2]

Conversely, a review of literature and informal survey of volunteers who have participated in medical missions reveal a multitude of ethical questions surrounding the services provided during short-term missions. Questions of who benefits, what kind of care to give, if money is being well spent and the overall impact on culture and health outcomes have been repeatedly asked. Issues of sub-standard care being given due to lack of resources, as well as communication barriers and lack of continuity often arise. Some efforts have been made to address these concerns through the development of sustainable mission models. At large, these models involve creating a common and specific mission, forming collaborations with local organizations and health workers, focusing on education, and ensuring that providers and supplies are appropriate while still remaining culturally sensitive. [2,4] In addition, one model suggests that evaluation of a project is essential to improving its design and implementation. [4] However, despite recent publications, overall there seems to be a clear paucity of literature involving a systematic review of the perspectives of the recipients of medical mission care, though "Anecdotally, experienced individuals in international

development report that the communities give thanks… (For) caring to come, listen, and understand their lives.” [5]

The purpose of this research is to identify the ethical issues perceived by the local recipients of temporary, intermittent medical mission care and to examine how these ethical issues perceived by the recipients of this care differ from those perceived by the medical brigade volunteers who provided care.

2. Background

The College of Health Sciences Fay W. Whitney School of Nursing at the University of Wyoming (UW) has an established memorandum of understanding (MOU) with Shoulder to Shoulder (S2S), a NGO, which works solely in the Intibucá region of Honduras (Figure 1). [6] UW sends 2-3 brigades each year to serve Agua Salada and its surrounding communities. The brigades have an established rapport within these communities with a mission to provide “primary health care, public health, dental care, nutrition, and education.” [7,8] Recently (July 2012), UW and S2S, in conjunction with the communities in and surrounding Agua Salada, finished major construction on a health clinic located directly in Agua Salada. Prior to this construction, a makeshift clinic for each brigade was established in the Agua Salada Church. Current plans to finish all areas of this new clinic, including shelving, sinks, bathrooms, showers, a cooking and dining area, as well as landscaping, are under way. By completing this clinic, it is the hope of UW and S2S that the effort to increase health promotion and awareness while maintaining a continuity of health care services and disease prevention for things such as cardiovascular disease, mental illness, vaccinations, malnutrition, and severe respiratory illness can be met. [9]

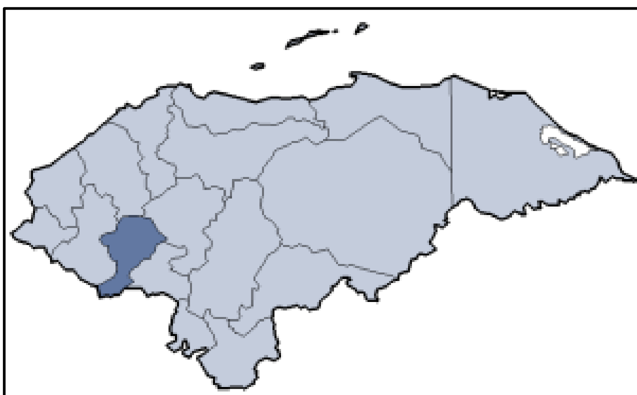

Figure 1. Intibucá Region, Honduras – shaded portion. Within this region, Agua Salada is nestled approximately 5 miles from the larger town of Concepción, not far from the El Salvador border, and is surrounded by several smaller communities throughout this mountainous terrain.

The clinic setting(s), pre- and post-construction, is also intended to function as a practice and research site across the disciplines for UW faculty and students. [9]

Additionally, Shoulder to Shoulder has a broad based approach to their aid efforts in Intibucá. They are involved in nutrition, water, education, literacy, scholarship, empowerment and research as well as health care in the area. They have several permanent clinics and a working relationship with the local and federal governments of Honduras. To add to this, many of the permanent employees of S2S are Hondurans that have received a western, post-high school education, thus making their efforts more culturally sensitive and responsive. [10]

2.1. Medical Ethics

When using ethics for a medical study, there are four principles that are included; nonmaleficence, beneficence, autonomy and justice (Table 1). [11] These four principles are widely accepted in Western medicine when dealing with beliefs about caring for the sick. [11] Each principle was an important factor within this study and was used to interpret both the brigade volunteer’s perspective and the patients they served.

Table 1. Principles of Medical Ethics (Bodenheimer, et al.). [11]

Beneficence	A sense of obligation within the health care worker to help those in need
Nonmaleficence	A sense of duty within the healthcare worker to do no harm
Autonomy	The right of any person to make their own decisions and follow them in regards to their own life and health care
Justice	Refers to the ethical concept that all people should be treated fairly

3. Methods

The data collected for this research, with UW Institutional Review Board (IRB) approval, was done in two groups: patient-participant and brigade volunteer. [12] Both surveys contained open-ended questions revolving around the ethical aspects of taking western medicine to an underdeveloped region and were asked in order to gain perspective from both parties. Because both groups surveyed were convenience samples, only descriptive statistics are used. The number of brigade volunteers is based on those who filled out the surveys. Additionally, because it is difficult to predict the amount of patients coming to the clinic during any given brigade, the number of patients surveyed was decided based on previous brigade numbers to reflect approximately 10-12% of an estimated population of 500 patients (desired n=50-60).

3.1. Patient-participants

The pre-construction clinic, where the data was collected, was set up in the Agua Salada, Honduras, church during the July 2011 medical brigade. For five days, patients within Agua Salada and the surrounding communities came to this clinic for care. During this five-day clinic operation, 598

patients were served from Monday through Friday (Figure 2). Clinic visitors were selected at random throughout the week and asked to participate in this research.

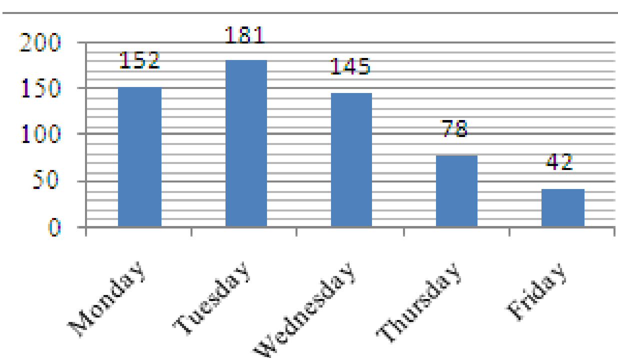

Figure 2. Agua Salada, Honduras, Clinic Visitors (Total = 598). Each day of the week and corresponding number represents the full clinic week used in this research and is typical of an average brigade.

A small area outside the church back entrance was set up for patient-participant interviews. Agua Salada is predominantly a Spanish-speaking region; therefore, an interviewer and interpreter were hired through contract with the Principal Investigator to conduct interviews. All interviews were recorded with audio equipment and conducted only after explanation and signature of consent was obtained for each participant, age 18 years or older. Both the survey and consent form were available in English and Spanish, with each participant receiving a Spanish copy of the consent form. Moreover, the consent form explained privacy, confidentiality, risks and benefits, as well as a brief explanation of the interview process and the intent of the research.

All participants were reminded (verbally and through the consent form) that their contribution was voluntary and, should they choose, they could end the interview at any time. Both confidentiality and privacy were maintained to best of the researchers' ability during interviews. Additionally, each patient-participant received a small incentive gift, a reusable tote bag valued at $3.00, for taking part in the survey. The involved risk was perceived as minimal and was no different from that of any average questions asked in a clinic setting. All participants (new and returning) were identified only by their age, gender, where they lived in proximity to the clinic, and their reason (such as diagnosis or treatment) for their clinic visit(s).

3.2. Brigade Volunteers

The brigade volunteer surveys consisted of a pre- and post-mission format with the same questions used in each. The surveys were set up and compiled through an office maintained on the UW campus; the Nightingale Center for Nursing Scholarship (NCNS). [13] The type of software utilized through NCNS was World App Key Survey® (220 Forbes Road, Braintree, MA; 2011) with each survey having a start and stop date. Within each link, an electronic consent form preceding the surveys explained privacy, confidentiality, risks, benefits, and purpose of the study. All brigade volunteers were reminded that their contribution was voluntary and, should they choose, they could end the online survey at any time. Deadlines and purpose of the study were also explained. The pre-mission survey was open three weeks prior to the trip to Honduras and ended on the day before flight. The post-mission survey began one day after the return trip and ran approximately four weeks. Every brigade volunteer was sent an electronic invitation to each survey along with a designated link. Reminders were also sent electronically once the surveys were open. All volunteers were identified only by their age, gender, and profession or discipline.

4. Results

The patient-participants (n=58) interviewed for this research were new and returning clinic patients from various areas within and surrounding Agua Salada and ranged in ages from 18-80. The brigade volunteers (n=12) surveyed consisted of both UW and non-UW brigade members ranging in ages from 22-70. Most were from within the local Wyoming health care disciplines though other fields such as engineering and law were represented. In addition, people with no acquired degree, but intentions toward health care, were also volunteers. Those who completed both surveys (pre- and post-mission) were used in the final analysis. However, due to incomplete pairs of surveys (i.e. age, gender, profession, and/or definitive answers to specific questions) only the results of the post-mission survey are presented.

A summary of the results for each group are displayed in Table 2: Patient-participant Survey Results Summary and Table 3: Brigade Volunteer Survey Results Summary, respectively, and are presented by group below.

Table 2. Patient-participant Survey Results Summary

	#	%
Age (range: 18-80)		
Mean	43.2	
Median	43	
Standard deviation	15.9	
Gender		
Male	21	36.2
Female	37	63.8
First time at clinic		
New	12	20.7
Returning	46	79.3
Where do you live (Community)**		
Agua Salada	25	43.1
Surrounding	33	56.9
Why are you here today? (Reason for visit)		
Headaches	13	22.4
Aches/pains	23	39.7
Child/prenatal care	9	15.5
Vision	6	10.3
Heart conditions	2	3.4
General care	14	24.1
Other	28	48.3
What do you use for health care when the clinic is not available?		
Use other health care centers	48	82.2
Home remedies	4	6.9
Purchase medications elsewhere	9	15.5
Do nothing	5	8.6
Other	4	6.9
Why did you choose to use the clinic today instead of your other choices?		
Closest/convenience	34	58.6
Difficult to get to other clinics	6	10.3
Support the brigade	5	8.6
Good doctors	5	8.6
More/better medications	17	29.3
Other	25	43.1
Why do you believe medical brigades come to Agua Salada?		
Help the locals/improve the community	20	25.0
Provide health care	16	20.0
Help those struggling economically	7	8.8
Improve access to health care	7	8.8
Other	18	22.5
	12	15.0
Should medical brigades provide health care in your community? Why?		
Provide service; improve overall health care	28	48.3
Home visits; closer	13	22.4
To provide medications	10	17.2
To aid economically challenged people	12	20.7
Other	13	22.4
What changes would you like to see made to improve the clinic?		
Everything is fine	51	87.9
More medications/varieties	2	3.4
Bring other specialists	5	8.6
Bring devices to do more tests	2	3.4
Things will improve with the new clinic	10	17.2
Other	8	13.8
**Two (2) inaudible responses were assumed to be from the surrounding area		

Table 3. Brigade Volunteer Survey Results Summary (Post-mission)

	#	%
Age (range: 22-70)		
Mean	44.3	
Median	46.5	
Standard deviation	18.1	
Why do you believe the medical brigades go to Agua Salada?		
To provide care to underserved	9	47.4
Education/facilitate self-care	2	10.5
Learn about health care in other places/3rd world clinical experience	2	10.5
Cultural awareness	2	10.5
Maintain established relationship	3	15.8
Because it is necessary	1	5.3
Should medical brigades provide health care in Agua Salada?		
Yes	12	100.0
No	0	
Why DO you believe that medical brigades should provide health care in Agua Salada?		
Underserved/a need exists	8	44.4
We have resources/they do not	3	16.7
We have the duty/moral	1	5.6
Opportunity for learning	1	5.6
Because it is the purpose of the trip	0	0.0
To instill hope	0	0.0
To educate the natives	1	5.6
The community wants us there/grateful	1	5.6
No reason not to	1	5.6
Same reasons as in the United States	1	5.6
To improve the value of future brigades	1	5.6
What made you decide to be a member of the medical brigade to Honduras (past or present)?		
Personal enrichment	9	36.0
Volunteer opportunity/help underserved	8	32.0
Time/opportunity worked with schedule	5	20.0
To learn about another culture/health care system	3	12.0
Clinical challenge	0	0.0
To empower self-sustained self-care	0	0.0
What factors, other than providing health care, influenced your decision to participate in the Honduras medical mission?		
Educational	3	12.0
Friends and family are going/group dynamics	6	24.0
Spanish speaking	1	4.0
Culture	4	16.0
To give back/educate	3	12.0
Résumé building/work environment	3	12.0
Travel opportunity	3	12.0
To maintain an established relationship with Hondurans	1	4.0
The new clinic being built	1	4.0
Why do you think the native Hondurans use the clinic that is provided?		
Access	8	27.6
Need	5	17.2
Trust the health care team	0	0.0
Entertainment	2	6.6
Contact with other cultures	3	10.3
Convenient/affordable	3	10.3
High quality of care provided	4	13.8
Gifts/free stuff	2	6.9
To be polite	2	6.9
Other	0	0.0
When there is no clinic in the community, how do you believe the native Hondurans manage their own health care?		
Traditional medicine/local healers	6	22.2
Travel elsewhere	8	29.6
Make do the best they can/teamwork	4	14.8
Unsure	0	0.0
Nothing/unmanaged	7	25.9
Local resources	2	7.4

Table 4. Common Medications Used. The list below represents the medications used during this medical mission and research and are reflective of those used during similar brigades in this region

Class	Medication
Analgesics/anti-inflammatories/steroids	Acetaminophen liquid/tablets Aspirin tablets Diclofenac tablets Hydrocortisone cream 1% Ibuprofen liquid/tablets Lidocaine HCL injection 0.5% Methyl salicylate/menthol cream Naproxen tablets Methylprednisolone (Depo-Medrol) injection Prednisone tablets
Antibiotics	Amoxicillin suspension/capsules Azithromycin suspension/tablets Ceftriaxone injection 1g Cephalexin capsules Ciprofloxacin tablets Doxycycline capsules Metronidazole suspension/tablets Penicillin tablets Sulfamethoxazole/trimethoprim suspension/tablets
Antiemetics	Metoclopramide tablets Promethazine tablets
Antifungals	Clotrimazole cream 1% Fluconazole tablets Ketoconazole shampoo 2% Miconazole cream 2% Nystatin cream 100,000 units
Asthma/COPD (chronic obstructive pulmonary disease)	Albuterol MDI (Meter Dose Inhaler) Beclomethasone MDI Fluticasone/Salmeterol (Advair Diskus) Montelukast (Singulair) tablets Tiotropium (Spiriva HandiHaler)
Cardiac/BP (blood pressure)/Diuretics	Enalapril tablets Hydrochlorothiazide tablets Metoprolol tartrate tablets
Cough, cold & allergies	Chlorpheniramine tablets Desloratadine (Clarinex) tablets Diphenhydramine liquid/capsules Guaifenesin liquid Loratadine tablets
Gastrointestinal	Albendazole (antiparasite medication) Bismuth (Pepto-Bismol) liquid/tablets Calcium carbonate (TUMS) tablets Famotidine tablets Omeprazole capsules Ranitidine tablets
Multivitamins (standard formulations)	Adult tablets Pediatric tablets (Chewable) Prenatal tablets
Ophthalmics (eyes)	Artificial tears solution/ointment Gentamycin solution Prednisone solution Tobramycin/dexamethasone ointment
Otics (ears)	Neomycin/polymyxin-B/hydrocortisone solution Ofloxacin (Ocuflox) solution
Miscellaneous	Benzoyl peroxide face wash 5% Diphenhydramine cream Iron supplements liquid/tablets Melatonin 3mg tablets Methocarbamol 500mg tablets Permethrin lotion 1% Rehydration packets Triple antibiotic ointment

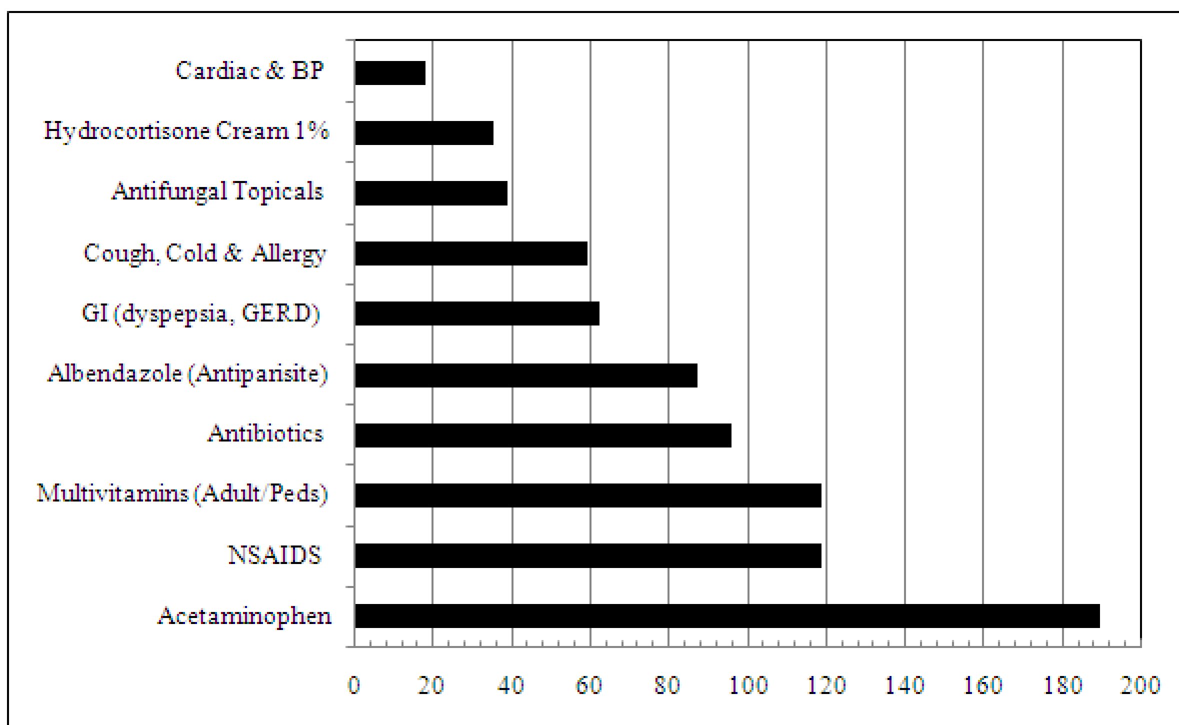

Figure 3. Top Ten Clinic Medications Dispensed. A variety of medications are used for each brigade supplied through a Shoulder to Shoulder medication formulary and private donations. The figure represents the types of medications dispensed most often in correlation with the reasons for clinic visits such as aches and pains, pediatric care, and general health concerns. (BP = blood pressure; GERD = Gastroesophageal reflux disease; GI = gastrointestinal; and NSAIDs = non-steroidal anti-inflammatory drugs)

4.1. Patient-participants

The 58 patient-participants surveyed had a mean age of 43.2, 37 (63.8%) were female, 21 (36.2%) were male. There were 46 (79.3%) returning and 12 (20.6%) new patients surveyed; 25 (43.1%) were from Agua Salada and 33 (56.9%) were from surrounding communities. Reasons for visiting the clinic included headache (22.4%), aches and pain (39.7%), child or prenatal care (15.5%), vision (10.3%) heart conditions (3.4%) general care (24%) and other (48.3%; this category includes, various infections, non-medical reasons and generalized answers that do not fit a specific category); multiple responses were possible and recorded individually. Table 4 represents the most common medications used to treat these various ailments while Figure 3 lists the top 10 over-the-counter and prescription medications dispensed throughout the week.

The different health care resources patient-participants noted utilizing included other health care centers (48, 82.8%), home remedies (4, 6.9%), purchase of medications independently (9, 15.5%), do nothing (5, 8.6%), and other (4, 6.9%). The reasons participants chose the clinic in Agua Salada included the clinic being closest (34, 58.6%), difficulty getting to other clinics (6, 10.3%), to support the brigade (5, 8.6%), quality medical care (5, 8.6%), access to more and better medications (17, 29.3%) and other (25, 43%).

When asked why each felt medical brigades come to Agua Salada, participants responded with reasons such as helping the locals and improving the community (20, 34.5%), providing health care (16, 27.6%), helping a struggling economy (7, 12.1%), improving access to health care (7, 12.1%), kindness (18, 31.0%), and other (12, 20.7%). All stated that medical brigades should deliver care in Agua Salada for reasons such as providing service and improving overall health care (28, 48.3%), the ability to arrange for home visits and being closer (13, 22.4%), providing medications (10, 20.7%), to aid the economically challenged (12, 20.7%), and other reasons (13, 22.4%).

In general, participants were pleased with the services provided (51, 87.9%) and stated everything was "fine or perfect." Suggested improvements included bringing more medications, a larger variety of medications (2, 3.4%), other specialists (5, 8.6%), more devices to do more tests (2, 3.4%), and other (8, 13.7%). In addition, several patient-participants (10, 17.2%) stated that things would improve with the building of the new clinic.

4.2. Brigade Volunteers

Volunteers were asked a series of questions similar to those asked of the patient-participants both before and following their involvement in the medical brigade; 12 brigade members responded to both surveys; however, due to inconsistencies in the pre- and post-mission surveys, only the results from the post-mission survey will be presented and discussed in this paper.

When asked why medical brigades go to Agua Salada,

responses included to provide care to the underserved (9, 47.4%), provide education and facilitate self-care (2, 10.5%), learn about other health care systems and gain clinical experience in the "third world" (2, 10.5%), cultural awareness (2, 10.5%), maintain relationships established with Agua Salada (3, 15.8%), and the needs of the local Hondurans (1, 5.3%). All of the volunteers believed that medical brigades should provide health care in Agua Salada for reasons such as providing care to those who need it (9, 50.0%), we have the resources (3, 16.7%), we have the moral duty or obligation (1, 5.6%), opportunity for learning (2, 11.2%), providing education (1, 5.6%), the community wants us there (1, 5.6%) and "there is no reason not to" (1, 5.6%).

When asked what made individuals become a member of a medical brigade, volunteers responded for personal enrichment (9, 36.0%), an opportunity to help the underserved and volunteer (8, 32.0%), convenient timing and scheduling (5, 20.0%), and to learn about another culture and health care system (3, 12.0%). Other factors for joining the brigade included educational opportunity (3, 12.0%), friends, family and group dynamics (6, 24.0%), travel and speaking Spanish (4, 16.0%), experiencing the culture (4, 16.0%), giving back and teaching (3, 12.0%), Résumé building and experience in the work environment (3, 12.0%), maintaining a relationship with Hondurans (1, 4.0%) and the new clinic being built (1, 4.0%).

Brigade volunteers were asked why they believed the Hondurans use the clinic that is provided; responses included better access (8, 27.6%), need (5, 17.2%), entertainment (2, 6.9%), contact with another culture (3, 10.3%), convenience and affordability (3, 10.3%), high quality care and trust in brigades (4, 13.8%), gifts and free items (2, 6.9%), to be polite (2, 6.9%) and other (2, 6.9%).

Beliefs about how the Hondurans managed their health care needs between clinics was also assessed; 6 (22.2%) respondents believed traditional methods were utilized, travel to other clinics (8, 29.6%), do what they can and teamwork (4, 14.8%), and local resources (2, 7.4%). Seven (25.9%) believed Hondurans would do nothing or leave their conditions unmanaged.

Volunteers had many suggestions for future improvements in organization including physical resources and volunteers (5, 25.0%), better tracking of patients and medications (5, 25.0%), expanding the membership of the volunteer team (2, 10.0%), addition of more translators (2, 10.0%), creating a more efficient workflow (2, 10.0%), and expanding clinic hours later in the day (1, 5.0%). Finally, the new clinic being built was cited as being helpful and beneficial by 3 (15%) respondents.

5. Discussion

With the four principles of medical ethics as a guide [11], this research was intended to identify the ethical issues perceived by the local recipients of temporary, intermittent medical mission care and to examine how the ethical concerns perceived by the recipients of this care differ from those perceived by the medical brigade volunteers who provided care.

5.1. Beneficence

The first ethical question to address is whether the recipients perceive benefit from this short-term medical mission health care model. Every person surveyed, both patient-participants and brigade volunteers, responded that yes, medical brigades should go to Agua Salada, Honduras. The patients reported that the services and medications provided were important aspects to the care that was received and that providing care to economically challenged individuals was a good reason to provide the clinics. The patient-participants and the brigade volunteers both commonly referred to the extensive need for care and medical resources as the primary reason that medical brigades should go to Agua Salada. In the responses provided, the patients in Agua Salada do not generally recognize that volunteers gain some benefit from the experience, as well, one response indicated that the brigade members "like to protect the health of other individuals." In addition, the idea of reciprocity arose in one response stating that we should come because they come and support us. The brigade volunteers were more likely to report a sense of duty or moral obligation to provide care, while the recipients believed the volunteers to be inherently "very nice" or good people. In general, the act of being there seems to be adequate for the patients' belief that the volunteers are good.

Only 11 (22%) of the responses to the reasons and factors affecting a brigade volunteers decision to join the brigade involved helping the patient or providing care while 100% of the patient-participant surveys suggested patient care or community improvement as the reason why medical brigades come to Agua Salada. The recipients of the medical mission care did not report benefit to anyone, but themselves and their community. To some extent, both sides perceive that patients benefit from the care that is given and received during the clinics; however, the providers also get a sense of personal benefit from the experience. These benefits received by brigade volunteers are addressed primarily in the reasons why they chose to be a member of the brigade.

Adopting a model similar to that discussed in Suchdev, et al. (2007) addressing three major health issues (dental, GI parasites, and nutrition) in conjunction with promoting Spanish fluency through on-site education would help address the needs in the Agua Salada community. [4] This would also help define roles within the volunteer community who travels there while closing the discernable gap between each group regarding beneficence.

5.2. Non-maleficence

One patient-participant engaged the interviewers about the brigade run clinics by responding that services are intended

"…to give these meds to all these rotting bodies, we may look nice, but we are all full of body aches and complaints." This patient is correct – headaches, other aches and pains, and access to medications emerged as a theme in reasons why patients come to the clinic; however, this was another source of concern for volunteers in the brigade. There were two suggestions for improvement to the clinic referring to having better medication dispensing procedures or efficiency, though the patients did not express a concern for the amount of waiting required to receive care.

While the patients wanted to see more medications available, the brigade volunteers wanted to make sure that they were dispensing the medications in a safe manner. This desire on the volunteers' part to do no harm was not necessarily recognized by the patients. Wall (2011) states that "one ethical question that medical volunteers may face is whether or not to provide a pharmaceutical or perform an intervention that is below the acceptable standard of care versus the alternative of doing nothing." [14] This may be a cultural difference in expectations for care and may reflect a difference in the care provided at the brigade-run clinics versus the Honduran-run facilities to which patients have access. As with beneficence, a gap in beliefs from the volunteers to the patient-participants exists, though further research would need to be done to confirm these results.

In other areas, recommendations from volunteers indicated desires to make the workflow more efficient (50% of responses) so patients are served more quickly and with less error.

5.3. Autonomy

The question of autonomy is an interesting development in this research. While none of the patient-participants or brigade volunteers reported any direct challenges to participants' autonomy, themes emerged in the responses to questions of how patients autonomously care for themselves when medical brigades are not available. The use of home remedies by patients seemed to be overestimated by the volunteers, 22.2% of volunteers responses indicated the use of herbal or home remedies while only 6.9% of patient-participant responses indicated their use. The incidence of patients failing to obtain care also seems to be overestimated in 25.9% of volunteer responses versus only 8.6% of patient-participant responses, though this may be due to differing perceptions of illness and health.

Furthermore, patient-participants reported traveling to other health centers for their medical care in 82.8% of responses, while brigade volunteers recognized this as the patient's choice in only 29.6% of responses. These differences are difficult to fully define, though it is clear that there seems to be a variance in the perception of patient autonomy.

Volunteers outwardly gave validation to cultural differences in their recognition of home remedies; however, they largely underestimated the patient's ability or desire to autonomously care for themselves in other recognizable ways.

5.4. Justice

The question of need also arose throughout the surveys of both patient-participants and brigade volunteers. Both sides recognized that the economic and health status of the people living in Agua Salada, Honduras, and the surrounding communities put them in a category of high need. This recognition by both parties may be considered an indication that the resources utilized for provision of health care in this area is appropriate and just.

Both volunteers and patients noted the value and distribution as being high quality. Neither questioned the allocation of resources, except in the concern of 9 (15.8%) patient-participants for brigades to bring more medications, more testing supplies, or a greater variety of specialists to provide care. In general, both groups recognized the system of justice that governs the distribution of resources.

Based on the results presented, it appears that the patients seen at this clinic have a basic understanding of justice and autonomy even if the actual definitions of each word may not be shared. However, is imposing this Western thought through education the direction medical brigades should turn? Isaacson, et al. (2010) discusses in reference to surgical procedures that those trained in developed nations, "assure patient autonomy and justice by disclosing reasonable risks, benefits, and alternatives." [3] Currently, the care given at the Agua Salada Clinic is free of charge and even though no surgical procedures are performed, many small invasive tasks, (i.e., wound cleaning, drainage and repair, and teeth cleanings) as well as treatment of many different ailments and disease states takes place during virtually every brigade. With Western thought in mind, the type of care provided in Agua Salada would suggest that patient education regarding ethics is needed, if not required.

Western medicine does not survive without these rules of autonomy and justice. Therefore, if we continue to take our medicine to underdeveloped regions, is it our duty to educate on the principles of medical ethics, including autonomy and justice or is disease state management enough? Seemingly, the more we educate to our way of medicine, the more we raise ethical questions.

5.5. Implications

When traveling to underdeveloped regions such as Agua Salada, Honduras to provide short-term medical care, ethical issues can always arise. Wall (2011) concluded that "medical volunteers in developing countries encounter different ethical problems than they do in their practice in the developed world." [14] Possible causes can be confusion from cross-cultural barriers and lack of resources and various types of education. The survey results presented here (Patient-participant and Brigade Volunteer) suggest a strong need to further examine the effects of doing no harm when dispensing medications. Furthermore, as discussed above,

the implications of applying beneficence, autonomy and justice are all areas that may require a closer look when dealing with short-term medical mission care.

DeCamp (2011) argues that "research can be necessary, for example, to help identify health needs to be met during short-term work, to assess effectiveness of health interventions, and to monitor longer term health gains." [15] This type of research would make sense in a continued brigade support community such as Agua Salada and may also aid in decisions surrounding ethical education.

Finally, to better understand how the local community members think Western medications work, a question that still remains is what the local members of the community do with their medications after the brigade leaves; expanding on the question used in this research of what they do for care when the brigades are not there? Ideas include sharing with others, selling them, and using them in conjunction with traditional remedies, all of which imply the need for patient education. Conducting further research could also help confirm these theories.

5.6. Limitations

Because of the potentially unique relationships that the UW School of Nursing and S2S have with the communities they serve, there is some question of the generalizability of these results to other medical missions. Additionally, only patients and volunteers attending the clinic were surveyed and, therefore, may have biased the data. It should be noted that the questions utilized in the surveys were not piloted or validated in any way.

6. Conclusion

When evaluating differences in the perceptions of patients and volunteers in ethical terms, it seems that both primarily share common perceptions of beneficence and justice while volunteers are more likely to be concerned with elements of non-maleficence and tend to undervalue indicators of autonomy. The results of the research presented suggest that the four Western principles of medical ethics warrant further investigation in underdeveloped regions receiving short-term medical care. However, other questions arise on how to broach these areas and if imposing more Western concepts is always the right thing to do.

Ideas for future research would be more surveying, including short-term medical missions in other underdeveloped regions, which may help confirm or refute these initial findings, distribution of findings amongst those who provide care, and further surveys to determine if a change has taken place that either widens or closes the gap in brigade volunteer versus patient-participant perspective.

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Conflicts of Interest

Only patients coming to the clinic for care were part of the patient-participant interviewing process. The Principal Investigator received additional funding through other organizations and departments on the UW campus to aid in the total cost of travel; no honorarium was obtained. The Faculty Advisor also serves as the Program Coordinator but did not participate in any of the primary research. Lastly, the on-the-ground interpreter was hired and paid by Shoulder to Shoulder as part of the group of interpreters supplied for each brigade. This interpreter was then recruited for this research through contract with the Principal Investigator to conduct the patient-participant interviews. No additional payments were made to this interpreter through research funding.

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