

Interdisciplinary Journal of Partnership Studies

Volume 4

Issue 2 Spring/Summer

Article 5

6-23-2017

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Recommended Citation

Ramstad, Sheryl A. and Potter, Teddie M. (2017) "One World, One Standard for Burn Care: Nursing's Role in Global Health," *Interdisciplinary Journal of Partnership Studies*: Vol. 4: Iss. 2, Article 5. Available at: <http://pubs.lib.umn.edu/ijps/vol4/iss2/5>



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ONE WORLD, ONE STANDARD FOR BURN CARE: NURSING'S ROLE IN GLOBAL HEALTH

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Abstract

In 1978, a landmark United Nations conference in Alma-Ata declared the goal of health for all by the year 2000 (WHO, 1978). Yet, today significant disparities exist between the health care afforded individuals in resource-limited countries and those in the industrialized world. Nursing, as a global profession, can become a powerful force for change so that better health is universally achieved.

Problem/Background: This project started with a partnership between a burn center in the United States and a pediatric burn center (Burn Center) in Peru, a country in which it is estimated that 15,000 children endure burn injuries each year (Huby-Vidaurre, 2016). Most are under the age of five, and suffer scald burns from pots with hot liquids left to cool on the floors of their homes. Pressure garment therapy (PGT) is a major treatment to reduce scarring for pediatric burn survivors in the United States since the early 1970s, but is unavailable in Peru.

Strategy: The Doctor of Nursing Practice project leader worked with the Burn Center team to develop a plan to use PGT as an intervention to address disfiguring scarring among pediatric burn survivors, utilizing the twinning approach.

Methods: This quality improvement project involved interdisciplinary collaboration and international partnerships between resource-rich and resource-challenged nations. Obtaining supplies needed to promote PGT in Peru required cultivating relationships with many people in the United States, including translators and interpreters to assist in overcoming language barriers among the participants, manufacturers and distributors of pressure garments to donate fabrics, and people regularly traveling to Peru who transported the donated PGT materials. It also involved working closely with the Burn Center team on developing a culture conducive to conforming to an international standard of practice.

Results: Resources were successfully leveraged to build a sustainable PGT program for all pediatric burn survivors in Peru.

Conclusion: Forging partnerships between the U.S. and Peru utilizing the twinning approach led to implementation of PGT, allowing for a best practice standard of care in the treatment of pediatric burns.

Keywords: Twinning Partnership, Global Health, Interdisciplinary Collaboration, Burn Scarring, Pressure Garment Therapy

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“Health involves domains that unite all human beings...At critical moments for the world, health has consistently remained one of the few truly universal aspirations.”

(Frank & Gomez-Dantes, 2002, p. 164).

INTRODUCTION

Problem Description

The problem of interest is the lack of pressure garment therapy (PGT) for the prevention of scarring among pediatric burn patients in Peru. Pressure garments have been the major treatment modality used in industrialized countries to prevent burn scarring since the early 1970s, when they were first popularized with pediatric burn patients at Shriners Hospital for Children—Galveston (Cheng, Evans, Leung, Clark, Choy, & Leung, 1984). Typically, the garments are one size smaller than the bodies for which they are made (Macintyre & Bird, 2006). They are correctly sized by placing a finger between the garment and the skin and observing the physical tension that is exerted (Sharp, Pan, Yakuboff, & Rothchild, 2016). The garments apply static compression to skin, which is believed to reduce collagen synthesis by limiting blood flow and the supply of nutrients and oxygen to the scar tissue (Kim et al., 2015).

Considered to be a conservative form of treatment, pressure garments provide significant health benefits. Not only does PGT decrease the height or thickness and redness of scarring, but it promotes the psychosocial adjustment of patients by improving scar aesthetics (Sharp et al., 2016). During the half century since being introduced, PGT has become the standard of care for the prevention and treatment of scarring among burn survivors in the United States (Engrav et al., 2010).

Although aware that PGT is the preferred way of preventing and treating burn scars in industrialized countries, the Peruvian Burn Clinic was unable to access the fabrics due to the lack of manufacturers and distributors in their own country. Many on the team were frustrated by their inability to address the significant and often life-long effects of burns on those they treated.

Available Knowledge

Use of Pressure Garment Therapy for Burn Scars. Burn treatment professionals agree that devastating aesthetic and functional problems result from scarring due to burn injuries. After burn wounds and grafts have healed, burn survivors are frequently disfigured, disabled, stigmatized, and shunned because of their scars (Gangemi et al., 2008). Studies suggest that in 32 to 67 percent of burn injuries, hypertrophic scarring is prevalent (Bombaro et al., 2003; Deovic, Koupilavia, & Brychta, 1999; Druecke et al., 2004; Spurr & Shakespeare, 1990).

In their review of the clinical effectiveness of pressure garments among burn survivors, Macintyre and Baird (2006) found a large body of dermatological, clinical, and case study evidence, but randomized clinical trials were lacking. Evidence-based practice standards recommend PGT to decrease both the height of and erythema associated with burn scars although, while acknowledging that evidence is insufficient to support its use to increase scar pliability or joint range of motion (National Guideline Clearinghouse, 2014).

In a 12-year study of pressure garments used to manage forearm burn scars, those treated with PGT were thinner, softer, and had a better overall appearance (Engrav et al., 2010). Other clinical studies have shown decreased scar height (Candy, Ceceila, & Ping, 2010), as well as significant reduction of redness and thickness among PGT-treated scars (Anzarut, Olson, Singh, Rowe, & Tredget, 2009). Although the exact mechanism of action is unknown, pressure appears clinically to enhance the scar-maturation process (Staley & Richard, 1997). It is also thought that continuous pressure produces scar tissue ischemia, decreases scar tissue metabolism, and increases collagenase activity (Alster, & Tanzi, 2003).

Global Health Partnerships and Twinning. Global health partnerships involve bringing together people from diverse backgrounds for the common goal of improving the health of populations based on mutually agreed upon responsibilities and principles. They can play a significant role in the struggle for equitable health improvement worldwide. The

notion of global health partnerships is premised on the concept of “*globalism*, [which] at its core, seeks to describe and explain nothing more than a world which is characterized by networks of connections that span multi-continental distances” (Nye, 2002, p.1). While medical care has a long tradition of international cooperation and sharing of expertise, the current challenge is for the global community to work closely in partnership with others to shape a healthier future for all people.

One type of global partnership, twinning, was developed by the American International Health Alliance (AIHA). It “refers to a partnership that links two entities with shared characteristics to achieve a common goal” (AIHA, n.d., p. 1). A twinning partnership happens when collective knowledge and resources are shared to address concerns among health care professionals based on peer-to-peer relationships. This model emphasizes the importance of local leaders in resource-limited countries defining their needs and garnering support for any intervention. It also stresses the value of building long-term relationships so that the intervention is sustainable.

The twinning approach is flexible and collaborative, and gets results. It involves both sides demonstrating an investment in the process (Hopkins, Burns, & Eden, 2013) and is a natural outgrowth of heightened professional awareness and expertise (Brusamolino & Maffi, 2004). People in advanced and emerging countries link arms to create a sustainable health system capacity that encourages synergy with host country goals. Multiple benefits result from establishing a twinning partnership, including building capability, promoting best practices, increasing program effectiveness, cultivating relationships, and advancing a global effort (Health Canada and ICAD, 1999; Jiang, Ives Erickson, Ditomassi, & Adams, 2012). Twinning encourages partnerships that continue long after the project has concluded.

Rationale

In 1978, a landmark United Nations conference in Alma-Ata declared the goal of health for all by the year 2000 (WHO, 1978). Yet, today significant disparities exist between the health care afforded individuals in resource-limited countries and those in the

industrialized world. The term *global health* “implies consideration of the health needs of the people of the whole planet above the concerns of particular nations” (Brown, Cueto, & Fee, 2006, p. 62). Disparities between poor and rich countries become strikingly apparent when adopting a global perspective. There are countless unmet needs in a world of enormous and growing health inequities. The World Health Organization (WHO) constitution, drafted in 1946, indicates that “enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction” (WHO, 1946, p. 1). The United Nations (UN) Millennium Development Goal 8, committed to by all 189 UN member states in 2000, highlights the importance of global partnerships to address the special needs of the least developed countries (United Nations General Assembly, 2000). The WHO Commission on Macroeconomics and Health (2002) recommends that high-income countries partner with low-income countries to provide improved access to essential health services worldwide.

Nursing can be a positive force in reducing disparities so that better health is universally achieved. The American Academy of Nursing’s Standards of Practice for Culturally Competent Nursing Care address the role that nurses must play in narrowing health gaps between industrialized and resource-limited countries. Specifically, Standard 1 states that “nurses shall promote social justice for all” (Douglas, Pierce, Rosenkoetter, Callister, et al., 2009, p. 258), defining *social justice* as “the belief that every individual and group is entitled to fair and equal rights and participation in...healthcare opportunities” (Douglas et al., p. 257). The Standards require that nurses provide leadership as well as advocacy to reduce the gross inequities in health between countries to shape a healthy, equitable, and sustainable future. The opportunity to turn despair into realistic hope depends upon achieving health for all. *Health for all* should not be an ideal, but must provide an organizing principle for nurses to ensure that everyone—regardless of their geographic location or economic circumstances—is entitled to the highest possible standard of health.

Specific Aim

In this quality improvement project, the specific aim is to establish global partnerships that will improve the process by which pediatric burn patients can obtain and utilize PGT in a resource-challenged country.

METHOD

Context

Burns are one of the most common household injuries in resource-limited countries. They are also one of the most devastating forms of physical and emotional trauma in children. Severe burns disproportionately affect poor children, often due to cultural cooking practices resulting in scald burns (Bartlett, 2002; Donroe, Gilma, Bruegge, Mwamburi, & Moore, 2009).

In Peru, it is estimated that 15,000 children suffer burn injuries each year (Huby-Vidaurre, 2016). Approximately 80 percent of them are scald burns caused by hot liquids in homes where the living area, kitchen, and bedroom are all in a single room. Because water heaters are unaffordable, water needed for cooking and bathing is often heated in large pots that are then placed on the ground to cool off or conserve space (Deleado et al., 2002; Forjuch, 2006). Most of the children burned in Peru are under the age of five years old, living in a household with an average of five people on a monthly income of \$209 (Huby-Vidaurre, 2016).

Community Partner

The community partner is a national pediatric hospital in Lima, Peru, that opened in 2013 and has the only pediatric burn center (Burn Center) in the country. This hospital has 265 beds, with 30 of them for burn patients younger than 18 years of age. There are approximately 25 staff members, including 3 plastic surgeons, an anesthesiologist, a physical therapist, an occupational therapist, a psychologist, and several nurses and technicians. The Burn Center admits approximately 300 children every year, with the

majority coming from the poorest, most densely populated districts of Lima. Forty percent of the patients are from rural, oftentimes mountainous areas, with no running water or electricity (Huby-Vidaurre, 2016).

The project leader was first invited to visit the Burn Center by one of its plastic surgeons while attending an American Burn Association annual meeting, and traveled to Lima in May of 2015 to learn more about it. With the assistance of interpreters, discussions took place with many of the staff members, including several surgeons, occupational and physical therapists, and nurses. In addition, at a care conference attended by the plastic surgeons and Burn Center administration, slides were reviewed along with courses of treatment for the then-current patient population. This was followed by visiting the rooms of the individual patients, as well as meeting with several of their parents.

While burn care provided at the Burn Center could be considered extraordinary in many respects, it became obvious that PGT was not being utilized as a treatment to prevent extensive life-long scarring. The Burn Center team was aware that patients could benefit from the use of pressure garments, but because there were no suppliers or distributors in Peru, and the cost to import them was prohibitive, the team was unable to utilize this treatment modality. Thus, the children with burn injuries not only endured the lengthy and costly process of surgeries and rehabilitation, but they frequently had permanent physical disfigurements, disabilities, and psychological problems caused by the stigmatizing effects of burn scarring. The Burn Center providers expressed strong interest in finding ways to make PGT available to the patients they treated.

Intervention

Using the twinning model, numerous partnerships were forged so that PGT could be implemented in the Burn Center. Collaborating with plastic surgeons, occupational and physical therapists, and patients' parents in Peru helped to foster an environment in which international best practice standards were recognized and valued. The shared

goal was to build relationships so that the supplies that this resource-limited country needed were available.

This project cultivated relationships with translators and interpreters to assist in overcoming language barriers among the participants as well as with people regularly traveling from the U.S. to Lima who were willing to transport these materials to the Burn Center. The aim of this project was to assist the implementation of PGT at the Burn Center by ensuring availability of the resources needed.

The structure of a twinning partnership under the AIHA model (n.d.) involves the following six phases: (1) originate the partnership, (2) identify a shared strategy, (3) implement the work plan, (4) determine outcomes, (5) evaluate results, and (6) communicate information (AIHA, n.d.; Busse et al., 2013). Based on this model, the twinning partnership to introduce PGT at the Burn Center proceeded as follows:

Originating the Partnership. WHO (n.d.) underscores trust, equality, and mutual goals to be key elements of any successful international partnership. Committed to these principles and brought together by a mutual concern about resources lacking for PGT, the Burn Center team and the project leader formed a twinning partnership in mid-2015.

Identifying a Shared Strategy. At the outset, it was crucial to consider whether excess resources in the U.S. could be obtained to address the Burn Center's needs. The partners decided to contact U.S. pressure garment manufacturers and suppliers to ask for donations. In addition, U.S. burn units would be asked to contribute their surplus pressure garments.

Provided these therapeutic supplies could be obtained, it was essential to identify ways to transport them to Lima, Peru. Further, the Burn Center needed a sewing workshop to enable their personnel to make pediatric garments from the donated materials. It was also important that the Burn Center's occupational and physical therapists learn

how to properly measure the burn survivors so the garments would fit them. There is consensus within the profession that caregivers can be taught these skills to provide safe and optimal care for the use of pressure therapy (Sharp, Pan, Yakuboff, & Rothchild, 2016).

Implementing the Work Plan. As a first step, the project leader contacted several U.S. pressure garment companies about donating their surpluses. Further, the project leader and the Burn Center team decided to create a simply worded brochure written in Spanish describing the proper use of pressure garments, recognizing that “educational handouts describing the principles behind pressure therapy and expected outcomes can be used to increase understanding, facilitate self-management, and improve adherence” (Sharp, Pan, Yukuboff, & Rothchild, 2016, p. 262). These would aid nurses and therapists in teaching parents how to use PGT.

Because mail service to Peru was considered undependable and expensive, the next step was to identify individuals traveling to Lima to ask them to take some extra boxes or suitcases of the donated fabrics. Further, U.S. firefighters and various churches and burn support groups were asked for monetary donations to help defray the costs of transporting the fabrics to Peru.

Inherent in twinning is the notion that it must be locally led to be successful and sustainable. Although addressing the challenges involves a two-way transfer of knowledge and skills, solutions cannot be dictated from outside the country (Hopkins, Burns, & Eden, 2013). The Burn Center’s sewing workshop was an important local investment of effort and leadership.

Also, Burn Center leadership needed direct contact with the U.S. pressure garment companies and those transporting the supplies to create long-lasting relationships and ensure the project’s sustainability. Finally, hold harmless agreements were offered to garment donors who were unable to control product development—that is, sewing and fitting the pressure garments.

Determining Outcomes. The first desired outcome was ensuring availability of PGT supplies so that the Burn Center could provide them for appropriate patients. The second desired outcome was for Burn Center nurses, occupational and physical therapists, and parents to become familiar and comfortable with the fitting and use of PGT when ordered by the physicians.

Evaluating Results. Evaluation of the project outcomes needed to be adapted to the project setting for several reasons. First, it was necessary to coordinate various parts of this project from a considerable distance. Since the Burn Center was in Lima, and the project leader in the U.S., there was limited access to the myriad stakeholders. Second, there were challenging cultural differences, magnified by language barriers. This required use of interpreters and translators. Third, the evaluation plans had to be adjusted due to restricted availability of people and limited resources to quantitatively measure the outcomes.

Communicating Information. The partnership took a systematic and long-term approach to implementing PGT at the Burn Center. Participants' commitment to improving pediatric burn patients' outcomes was steadfast. This required effective and frequent email communications between the project leader and all the participants, including feedback to the fabric suppliers, fund donors, people involved in transporting the goods, and others. The success of the project also necessitated an ongoing willingness for the collaborative effort to continue, as well as a plan for marketing the program's achievements.

Elements of the Intervention

A twinning partnership between the Burn Center team and the project leader was instrumental in obtaining the desired result. From the beginning, there was a two-way transfer of expertise and skills through ongoing interactions, demonstrating the partners' mutual commitment to working together. Both partners adopted an attitude that they had something to learn from and share with one another. For example, although the Burn Center team was familiar with PGT, it had limited working knowledge

of how to utilize it. The project leader learned the value of the Burn Center team's dedication to patient care and determination to succeed despite limited resources. This twinning partnership led to strong relationships and systems that ensured a sustainable approach.

Initially, the project leader contacted various U.S. manufacturers and suppliers of pressure garments while visiting national burn conference exhibit halls. These visits introduced vendors to Peru's needs and sought to determine their interest in making donations. Their responses were encouraging and evidenced concern about the lack of PGT in Peru. They offered to give fabrics not passing quality control standards due to being off-color or having some other imperfections that did not cause them to be ineffective as pressure garment materials and which would otherwise be discarded. In addition, some agreed to donate custom-made adult pressure garments that had been returned because of improper fit but could be altered to fit the pediatric patients. Realizing that such fabrics would have value to the Burn Center, suppliers enthusiastically agreed to participate in the effort.

Soon boxes containing these items began to arrive at the project leader's residence. In addition, a burn unit in the United States agreed to provide pressure garments that had been previously ordered for patients but were not picked up, along with measuring guidelines for the Burn Center's use in determining how to size and fit them. Additionally, the project leader put together an illustrated brochure written in Spanish that instructed on the use and explained the benefits of pressure garments.

While the project leader was contacting U.S. pressure garment manufacturers and receiving contributions, the Burn Center set up a sewing workshop in Peru to transform the donations into gloves, vests, sleeves, leggings, and masks. They received two industrial sewing machines from an association of women called *Volunteer Ladies* that sells food at the pediatric hospital to collect money to buy supplies needed for the children. The Burn Center then hired a seamstress to teach the burn patients' parents how to measure their children and sew pressure garments for them.

Next, the project leader reached out to members of the broader community in the US, contacting churches, hospital staffs, burn support groups, Rotary Clubs, and others to request assistance in transporting donated compression supplies to Peru. The project leader, along with volunteers from the burn support groups and clergy, then packed the garments and fabrics for shipping to the Burn Center. In February of 2015, two edema therapists from the US traveling to Lima took with them the first shipment. Donated funds paid for their costs in taking extra baggage containing 58 sewn pressure garments in different sizes, styles, and colors, and approximately 10 pounds of fabrics for PGT. Since that time, several additional shipments have been transported to Peru, using similar arrangements and funding sources.

Once the supplies arrived at the Burn Center, the burn team and patients' parents began to create pressure garments. Within a few months, every patient for whom providers had ordered PGT was receiving two sets of the garments prior to their discharge, along with an instructional brochure in Spanish that explained the benefits of burn-injured children wearing them.

The project leader introduced the Burn Center's plastic surgeon to several of the pressure garment suppliers at the International Society of Burn Injuries biennial meeting. The plastic surgeon apprised them of the progress in implementing PGT and expressed appreciation for their donations. In response, the suppliers offered continued support of the initiative. At that conference, the plastic surgeon also met staff from the Phoenix Society for Burn Survivors, an international organization with a tremendous network of people involved in burn care worldwide (Acton, 2007). This resulted in an invitation for the plastic surgeon to attend the World Burn Congress a few months later to participate in psychosocial training as to how to conduct a peer support program for burn survivors. At the World Burn Congress, contacts were made to help solidify some of the relationships with pressure garment suppliers, as well as to secure additional sources of assistance.

Back in Peru, the Burn Center revised its website to announce implementation of PGT. Stories appeared in Peru's largest newspaper and on Lima's television news stations, reporting that the Burn Center was the first in the country to initiate this form of burn treatment. With a heightened awareness, the Burn Center team launched burn prevention campaigns to reduce the incidence of children's scald injuries throughout the country (El Peruano, September 29, 2016; Panamericana Television, October 14, 2016).

Measurement

Feedback regarding PGT implementation was obtained through written communications and meetings at conferences in the U.S. with one of the Burn Center's plastic surgeons. In addition, Burn Center team members and patients' parents completed questionnaires (See Appendix A). Since this process improvement project was not intended to determine the effectiveness of PGT, which had long been established, the inquiries related primarily to the conditions for which PGT was being utilized, the types of patients using them, the amount of time for which patients were required to wear them, and the patients' compliance.

ANALYSIS

This project involved people in advanced and emerging countries linking arms to create a sustainable health system capacity that encouraged synergy with host country goals. It was intended to launch a form of treatment in Peru that had been the standard of pediatric burn care in the U.S. for nearly half a century, with benefits already well established in the literature. Thus, the data analysis involved simply the extent to which this therapeutic practice was embraced by the Burn Center team.

A descriptive approach was used to evaluate project outcomes. The first desired outcome—ensuring adequate availability of PGT supplies so that the burn team providers could order them for appropriate pediatric burn survivors—was measured by determining whether there were enough supplies and a system in place to make PGT

available to all burn patients at the Burn Center. The second desired outcome—for the Burn Center’s nurses, occupational and physical therapists, and parents to become familiar and comfortable with use of PGT when ordered by the physicians—was measured by questionnaires completed after the PGT treatment protocol had been implemented.

Ethical Considerations

A *Determination of Human Research* form was submitted to the Institutional Review Board (IRB). Based on the responses given by the project leader, this process improvement project did not require further IRB review or approval. The focus was to facilitate the acquisition of adequate pressure garment supplies and their correct use by the Burn Center team. Consequently, it was considered a performance improvement project, and further IRB review was unwarranted.

The twinning model used is an evidence-based way of facilitating meaningful partnerships, and has been utilized to improve the standard of patient care worldwide (Brusamolino & Maffi, 2004; Hopkins, Burns, & Eden, 2011). There is little chance that it could lead to a betrayal of ethical standards since the products were donated, not sold. The project leader has no financial interests of any kind in the outcome. This project involves no risks to patients who are likely to benefit from PGT when supervised by physicians well-educated in the treatment (Cincinnati Children’s Hospital Medical Center, 2014). Because the entire Burn Center population is afforded access to PGT, no control group is involved.

Results of the Intervention

These included verbal reports by Burn Center team members that their seamstress was making between four and six pressure garments each day from the donated materials. Additionally, the plastic surgeon verbally reported that all burn patients at the time of their discharge were receiving two sets of pressure garments free of charge, along with the brochure in Spanish as to the purpose and use of the garments.

Surveys were completed by 4 parents of pediatric burn survivors, 2 plastic surgeons, 1 occupational therapist, and 3 physical therapists. The questionnaires were translated into Spanish, and the responses were then translated into English. Pediatric burn survivors' parents, plastic surgeons, occupational therapists, and physical therapists reported that compliance was excellent, with children wearing the garments approximately 23 hours each day, as ordered by their providers. Due to the 12- to 24-month recommended period for wearing the garments, a final analysis of their use is premature, but the Burn Center director reported, "The garments are essential to the rehabilitation and treatment of burned children. They also help to decrease the pain caused by scarring" (Huby-Vidarré, 2016). It is expected that PGT will continue to be a mainstay of the Burn Center's treatment for the foreseeable future.

SUMMARY

This quality improvement project introduced and implemented PGT at the Burn Center. It demonstrated the importance of international collaboration to support adoption of best practices worldwide. In an era of global health, it is critical that industrialized nations with abundant and even surplus medical supplies partner with resource-limited countries to ensure one standard of care for all patients. Consistent with the WHO constitution dating back nearly three quarters of a century, as well as UN Millennium Development Goal 8 adopted over a decade ago, global partnerships are essential to attaining the fundamental right of access to the highest standard of health for every human being.

Interpretation

This twinning partnership between the project leader and the Burn Center was based on relationship building, exchanging ideas, and obtaining resources to achieve a common goal. It was grounded in mutual respect, as well as a vision for excellence in achieving a standard of care for pediatric burn patients in a country with an overabundance of children suffering from life-long disfigurement caused by burns. Twinning required close collaboration and the implementation of shared strategies.

The Burn Center provided institutional support, without which the work would not have been possible. From the outset, it was obvious that the Burn Center treatment team sought to provide the best possible burn care to its patients.

“Nursing...benefit[s] tremendously from the twinning experience...Personal and professional growth and organizational improvements [result] from closely working with and learning from one another...as we continue to work to improve the science, discipline, and practice of nursing for the betterment of patient care” (Jiang, Ives Ericson, Ditomassi, & Adams, 2012, p. 122).

Limitations

This project had several important limitations. First, it was done at a single institution. Its success depended largely on the leadership involvement at the Burn Center, where a visionary team led by a bilingual plastic surgeon ably oversaw the implementation. Their interest and expertise, as well as the participation of patients’ family members, were instrumental in introducing PGT. Other institutions with different leadership, structure, and guidelines may present different challenges and opportunities.

Another limitation was that it is context-based so that its generalizability to other countries, cultures, and institutions may be limited. Nevertheless, the methods and the twinning partnership model are informative in addressing similar standard of care issues in other resource-restricted countries.

A further limitation was the reliance on the goodwill of the U.S. garment suppliers, who were crucial to implementation of PGT in Peru. This was necessary due to the lack of funding available for such a collaborative partnership.

One of the greatest challenges was building relationships to ensure that a comprehensive, sustainable, systems-level approach was taken. Projects like this require a project director who values a single standard for global health.

A final limitation of the project was that reliance on informal means of transporting the medical supplies so as not to encounter customs and other requirements may not be possible in other circumstances.

Other Information

This project received no monetary support from any source other than the cash donations from individuals that helped to defray the costs of additional luggage for transporting the PGT materials to Peru. None of the donors played any role in the design, implementation, interpretation, or reporting of the project. All additional resources required for the project were donated by various PGT manufacturers, suppliers, and distributors, as well as burn centers in the U.S. No specific grants from any funding agency in the public, commercial, or not-for-profit sectors were received.

CONCLUSION

This project was intended to strengthen and advance interdisciplinary collaboration and international partnerships. The twinning partnership model is an effective approach to leverage resources and build health system capacity in resource-challenged countries. This project's short-term achievements suggest that long-term relationships driven by local stakeholders can be successful in globally spreading the capacity for best practices. Looking ahead, there are numerous opportunities for these relationships to continue.

To ensure PGT's sustainability, the next step is to explore the feasibility of one or more U.S. manufacturers working with a Peruvian partner so that the garments and/or fabrics could be produced in Peru. This would permit the garments to be more easily obtained without relying on donations and/or encountering transportation issues. Further twinning partnerships between the Burn Center and those in the U.S. burn community could also address the lack of psychosocial programming available to pediatric burn survivors in Peru. Finally, assistance provided by the American Burn Association and

various firefighting organizations could support Peruvian burn prevention education and programming initiatives through similar partnerships.

An important theme that emerged from this project is the significant role that nursing can play in the international effort to ensure one standard of health care worldwide. It is the responsibility of nursing to explore ways in which industrialized nations with an abundance of riches can partner with those in resource-limited countries to impact health care. By sharing knowledge equally among all partners who place value on the relationships that are built, nursing can overcome challenges and achieve one standard of care worldwide. As a profession comprising caring individuals, nursing can provide the impetus for creating a healthier tomorrow for our global community.

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Appendix A

Questionnaire for Burn Team Members

Experience with Compression Garments:

1. For what reason(s) do you use/recommend use of compression garments for patients?
2. How often have you used them with pediatric burn patients?
3. What benefit(s), if any, have you observed from use of the garments?
4. What is the average length of time you recommend the patient wear the garments?
5. Are there patients for whom you do not recommend use of the compression garments?
 - a. If so, who are they?
 - b. Where are their burns?
 - c. Why do you consider compression garments inadvisable for them?
6. Is there anything else you'd like to share with us about your experience with the use of compression garments?

Questionnaire for Parents

1. How long has your child worn a compression garment?
2. Is your child still wearing the garment?
3. Do you think the compression garment has benefited your child? If so, how?
4. How many hours a day has your child worn the garment?
5. What have you done to encourage your child to wear the compression garment?

6. What has been the biggest problem in getting your child to wear the garment?
 7. Is there anything that would have made it easier for you in getting your child to wear the garment?
 8. Would you be willing to talk to other parents about the use of compression garments?
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