Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/burns

One world one burn rehabilitation standard

M.A. Serghiou [a,*], J. Niszczak [b], I. Parry [c], C.W.P. Li-Tsang [d], E. Van den Kerckhove [e], S. Smailes [f], D. Edgar [g,h,i,j]

[a] Shriners Hospitals for Children, Galveston, TX 77550, USA
[b] Temple University Burn Center, Philadelphia, PA, USA
[c] Shriners Hospitals for Children, Northern California, Sacramento, CA 95817, USA
[d] Department of Rehabilitation Science, The Hong Kong Polytechnic University, Hong Kong
[e] KU Leuven, Department of Rehabilitation Sciences, Belgium
[f] St. Andrews's Centre for Plastic Surgery and Burns Broomfield Hospital, Australia
[g] Burn Injury Research Node, The University of Notre Dame Australia, Fremantle, Western Australia, Australia
[h] Fiona Stanley Hospital, Murdoch, Western Australia, Australia
[i] Fiona Wood Foundation, Murdoch, Western Australia, Australia
[j] Burn Injury Research Unit, University of Western Australia, Crawley, Western Australia, Australia

ARTICLE INFO

Article history:
Accepted 4 April 2016

Keywords:
Burn
Rehabilitation
International
Standard of care

ABSTRACT

According to the World Health Organization (WHO) burns are a huge global health problem resulting in death and devastation to those who survive large burns as they are faced with significant functional limitations that prevent purposeful and productive living. Members of the International Society for Burn Injuries (ISBI) Rehabilitation Committee conducted a needs assessment survey in order to characterize how burn rehabilitation is implemented worldwide and how the international burn rehabilitation community can help improve burn rehabilitation in identified geographic locations which need assistance in rehabilitating burn survivors successfully. The results of this survey indicated that poor and in some cases resource limited environments (RLEs) around the world seem to lack the financial, educational and material resources to conduct burn rehabilitation successfully. It appears that there are vast discrepancies in the areas of education, training and capacity to conduct research to improve the care of burn survivors as evidenced by the variation in responses between the RLEs and developed countries around the globe. In some cases, the problem is not knowledge, skill and ability to practice burn rehabilitation, but rather having the resources to do so due to financial difficulties.

1. Introduction

According to the World Health Organization (WHO), over 265,000 people die worldwide each year as a result of a burn related accident [1]. Of these deaths, approximately 95% occur in resource limited environments (RLE's) and countries [2]. More significantly, people who survive serious burns are in the millions and are often faced with significant functional limitations that prevent purposeful and productive living.

* *Corresponding author at*: Shriners Hospitals for Children, Rehabilitation Services Department, 815 Market Street, Galveston, TX 77550, USA. Tel.: +1 409 770 6681.
E-mail address: mserghiou@shrinenet.org (M.A. Serghiou).
http://dx.doi.org/10.1016/j.burns.2016.04.002

Specifically, the WHO reports that burns account for 10 million disability adjusted life years (DALYs) lost globally each year. In 2004, eleven million non-fatal burns require hospitalization and/or some type of treatment [1]. Observational visits and experiences of the authors affirm that a disproportionate number of these burn survivors develop significant burn wound contractures and suffer other physical and psychological impairments that limit their function thus, negatively influencing their chance of full recovery and returning to productive living [2,3].

Physical rehabilitation is a broad specialty and is essential in helping burn survivors recover from their injuries and restore their capacity for independence and gainful existence [4,5]. The goal of burn rehabilitation is to assist patients to achieve their maximum potential in physical function, cosmetic appearance and teach them to adapt where permanent functional loss is sustained and to return to their life roles and skills [5]. Additionally, rehabilitation specialists help in the community reintegration process of these survivors, focusing on recovery of quality of life and return to participation in all life roles and skills. Rehabilitation therapists around the world have similar goals in the rehabilitative process along the continuum of care however they go about achieving these goals in many different ways [2,6]. In the developed countries of the world, burn rehabilitation is often conducted at hospitals and other medical facilities equipped with modern equipment utilized by professionals who have access to greater resources, theoretically providing the greatest chance of success and best patient outcomes. In contrast, rehabilitation clinicians in RLEs may not be available as part of the multidisciplinary team, or if present have minimal resources and, or expertise to provide the basic and specific rehabilitation interventions [1]. That said, anecdotes abound to testify that clinicians in RLEs adapt to the surroundings well and with minimal decision making support and training promote a sustainable and acceptable level of rehabilitation. Technological advances and devices to improve function are rapidly expanding in their number, applicability and quality. Unfortunately, these adjunct solutions are often (too) expensive and not sustainable in the RLEs due to scalability and other challenges such as a lack of maintenance resources or programs, reliable electricity and marginal applicability in unforgiving climates. Rehabilitation specialists in RLEs are faced with further challenges such as having minimal or sporadic availability of resources to care for their patients and limited provision and access to knowledge, skills and expertise to help those who do survive serious burns [3,4]. Their goals in burn recovery are clear and their willingness and passion to accomplish them are admirable however they are hindered in their ability to respond due to challenges noted.

In recent years, medical institutions, foundations and Non-Governmental Organizations (NGOs) worldwide have been conducting health professional missions to various RLEs around the world to help in the care burn survivors [6]. These medical teams consist most commonly of surgeons and nurses who deliver and teach surgical interventions to treat patients and provide meaningful education on the overall care of the burn survivor. The lack of training and support for burn rehabilitation skills has been highlighted in these missions, and this is compounded by a lack of available therapists and rehabilitation professionals. The role burn rehabilitation clinicians fulfill worldwide has not previously been examined. In 2012, during the proceedings of the 16th Congress of the International Society for Burn Injuries (ISBI), the president of the society emphasized the need for ISBI to work in an organized fashion and in collaboration with WHO to decrease the incidence of burn mortality (and morbidity) worldwide through prevention campaigns and improve patient care focusing specifically in the developing countries [1,4]. The official theme of the 2012 ISBI Congress was ''One World, One Standard of Burn Care'' and focused on topics of education, prevention, clinical care and epidemiology of the burn. Through the continuous encouragement and support from the leadership of the ISBI, the society's Rehabilitation Committee began working on the ''One World, One Rehabilitation Standard'' project at the completion of the 2012 ISBI Congress. The aims of the project were to: (a) describe the state of burn rehabilitation and profile local rehabilitation providers around the globe, (b) document associated professional development and education opportunities, and (c) explore the reasons and limitations to provision of rehabilitation services and conducting research projects. A team of burn rehabilitation professionals, members of the ISBI Rehabilitation Committee, designed a needs assessment in the form of a survey with the hope of collecting information on how rehabilitation is conducted around the globe and to identify where and why rehabilitation is lacking in some countries in order to make recommendations to the international burn community regarding solutions to improve the status of burn patient rehabilitation pathways and clinician training programs worldwide.

2. Methods

A 28 question, burn rehabilitation specific survey (Appendix A), was developed by the members of the International Society for Burn Injuries (ISBI) Burn Rehabilitation Committee with input from external advisors. The survey was delivered via email, regular mail, in person and by phone to burn centers of member countries of the ISBI utilizing the burn center directory of the society. Further distribution of the survey occurred through the Burn Rehabilitation Committee member networks, with snowballing sampling of recipients to propagate the survey as far around the world as possible. The survey had two respondent invitation periods that occurred over a span of two years. After Phase One, a review of the respondent countries was completed, gaps were identified and Phase Two survey targeted distribution was designed and implemented. Additional international rehabilitation contacts were engaged within the Pan African Burn Association, as well as the American and European Burn Associations. The survey was translated by native medical professionals and made available in English, Spanish, French, German, Dutch and Chinese. Within the timeframes and scope of the study, back translation and adjustment for cultural differences was not feasible however the translation to the different languages was performed by medical translators in the countries (geographic areas) where the languages mentioned above are spoken. Questions included (a) demographics, (b) burn rehabilitation interventions (positioning, splinting, exercise, and scar management), (c) patient follow up, (d)