Clinical and Economic Impact of The Global Smile Foundation Surgical Program

To the Editor: Congenital clefts of the lip and palate (CLP) affect approximately 1 in 500 to 700 live births globally, and 250,000 annually in developing countries.[1] These craniofacial differences can lead to significant patient morbidity if untreated, and can have devastating clinical, psychosocial, and economic repercussions on patients and their families.[1] Global Smile Foundation (GSF) is a nonprofit organization dedicated to providing free comprehensive cleft care to patients born with CLP. The vision of GSF is to create a world where individuals born with CLP can thrive without limitations due to their craniofacial differences. GSF volunteers have been working to achieve this vision through clinical, educational, and research initiatives in areas of need for more than three decades.

In this report, we sought to evaluate the clinical and economic impact of GSF's international surgical program. GSF provides clinical care through a diagonal model, using surgical missions as transitory conduits for establishing more sustainable local comprehensive cleft care centers.[1] For the analysis described here, we reviewed all primary cleft lip (PCL) and primary cleft palate (PCP) procedures performed over the last decade in Brazil, Burkina Faso, Ecuador, El Salvador, Guatemala, Ivory Coast, Lebanon, Mali, Peru, and Senegal (Fig. 1). GSF has established comprehensive cleft care centers in Beirut, Lebanon and Guayaquil, Ecuador to date.

The total number of patients included in this study was 1509, including 951 who underwent PCL repair, and 558 who underwent PCP repair. The mean age of all patients was 3.3 ± 4.3 years, 3.0 ± 5.3 years for patients who underwent PCL repair and 3.7 ± 2.5 years for those who underwent PCP repair. Averted Disability-Adjusted Life Years (DALYs) were calculated. The disability weight for untreated cleft lips was assumed to be 0.098 with a residual disability weight of 0.016 following treatment, while the disability weight for untreated cleft palates was assumed to be 0.231 with a residual disability weight of 0.015 following treatment, based on the Global Burden of Disease Study Life Tables.[2] Life expectancy based on country and gender was derived from the World Health Organization life tables.[3] The economic value of the averted DALYs was then calculated by multiplying the number of averted DALYs by Gross National Income per capita. Country and year-specific data from the World Bank, using both Atlas and Purchasing Power Parity methods were utilized for these calculations.[4]

FIGURE 1. Global Smile Foundation surgical program sites.

Through its surgical program, GSF has averted 12,922 years lived with disability (DALYs) for patients who underwent PCL or PCP repairs over the last decade. The total economic gain from these interventions is estimated to be between $64,651,261 and $124,001,435, with an average economic gain per patient estimated to be between $42,844 and $82,175. These figures highlight the significant clinical and economic impact of nonprofit driven international cleft surgery initiatives on patients born with CLP. Future efforts will focus on relentlessly making our initiatives more cost-effective and accessible to every patient born with CLP.

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