Short-Term Dental Outreach and Its Impact on Underserved Communities: Clinical, Educational, and Collaborative Outcomes from a Mission in El Salvador

Authors
Regina Espinoza, DDS, MBA, FICD
SHINE Dental Missions (Sharing Hope In Neighborhoods Everywhere)

Abstract

Background: Oral health disparities remain a significant global health issue, particularly in underserved populations with limited access to dental care. Short-term dental missions aim to address immediate needs while also providing educational opportunities for trainees.

Objective: To evaluate the clinical output, educational outcomes, and collaborative impact of a 5-day dental mission conducted in El Salvador.

Methods: A descriptive observational study was conducted during a 5-day dental outreach mission. A multidisciplinary team, including one U.S.-licensed dentist (former UCLA School of Dentistry faculty), three Salvadorean dentists, dental students from U.S. and Salvadorean institutions, a licensed physician, and volunteers, delivered care using portable dental units. Data collected included patient volume, procedures performed, demographic distribution, systemic health conditions, medical screening results, and post-mission student survey responses.

Results: A total of 461 patients were treated over 5 days. Services included 139 restorative procedures, 118 extractions, 208 preventive treatments, and 10 root canal treatments, along with 205 fluoride applications and 433 oral hygiene instruction sessions. The estimated value of care provided was $246,984 USD, with preventive services accounting for the largest proportion ($152,894). Systemic conditions included hypertension (n=28), diabetes (n=18), and thyroid disease (n=2). Survey responses (n=16) demonstrated that 94% of students reported high to very high improvement in clinical confidence, and 100% would participate again and recommend the experience.

Conclusion: Short-term dental missions can deliver meaningful clinical care while significantly enhancing dental education. Integration of medical screening and local providers strengthens patient safety, sustainability, and overall impact.

Introduction

Oral diseases are among the most prevalent noncommunicable conditions worldwide and disproportionately affect underserved populations. According to the World Health Organization, oral diseases affect nearly 3.5 billion people globally, with untreated dental caries being the most common condition.[1] Barriers such as limited access to care, financial constraints, and lack of preventive education contribute to high rates of untreated dental disease.

Short-term dental missions have been widely implemented to address these disparities. However, concerns regarding sustainability, continuity of care, and ethical delivery models have prompted a shift toward collaborative and community-integrated approaches.[2,3]

SHINE Dental Missions (Sharing Hope In Neighborhoods Everywhere) has conducted outreach efforts throughout Latin America for over a decade. In 2026, the organization expanded its efforts to El Salvador with a focus on ethical care delivery, collaboration with local providers, and long-term sustainability.

Materials and Methods

Study Design

This was a descriptive observational study of a 5-day dental mission conducted in El Salvador in March 2026.

Team Composition

The team included one U.S.-licensed dentist (former UCLA School of Dentistry faculty), three licensed dentists from El Salvador, fourteen dental students from UCLA, one dental student from Western University, three dental students from Universidad Salvadoreña Alberto Masferrer, registered dental hygienists, a licensed physician who assisted with medical screenings, and volunteers.

Clinical Setting

Dental services were delivered using portable dental equipment in temporary clinic settings. All services were provided free of charge.

Services Provided

Services included restorative dentistry (139 procedures), extractions (118 procedures), preventive care (208 treatments), endodontic therapy (10 root canal treatments), fluoride applications (205), oral hygiene instruction (433), and sealants (8). In addition, the inclusion of oral cancer screening as part of routine examinations highlights the importance of early detection strategies in underserved populations. Oral cancer screening results are pending at the time of this report.

Data Collection

Data collected included patient volume by location, procedures performed, patient

demographics, systemic health conditions, and post-mission student survey responses. In addition, basic medical screenings, including blood pressure and blood glucose measurements, were performed by a licensed physician to identify previously undiagnosed systemic conditions and to obtain immediate medical clearance for dental treatment when indicated.

Data Analysis

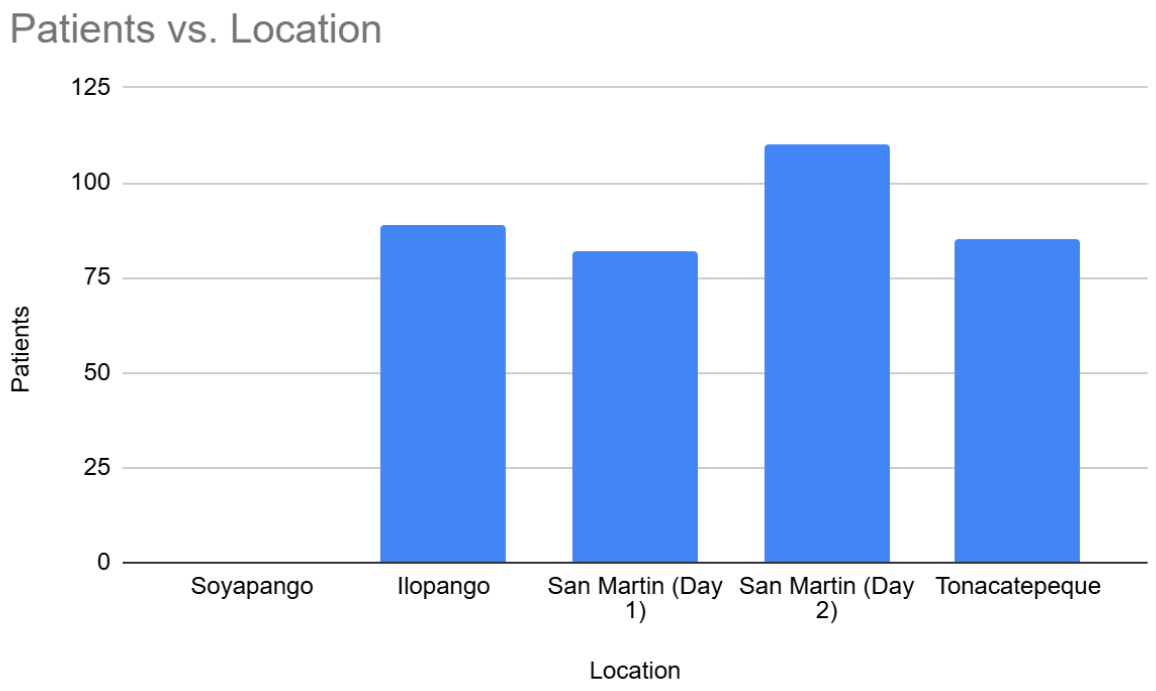
Descriptive statistics were used to summarize clinical output and survey results.

Results

Patient Volume

A total of 461 patients were treated across five clinical locations: Soyapango (95), Ilopango (89), San Martin Day 1 (82), San Martin Day 2 (110), and Tonacatepeque (85).

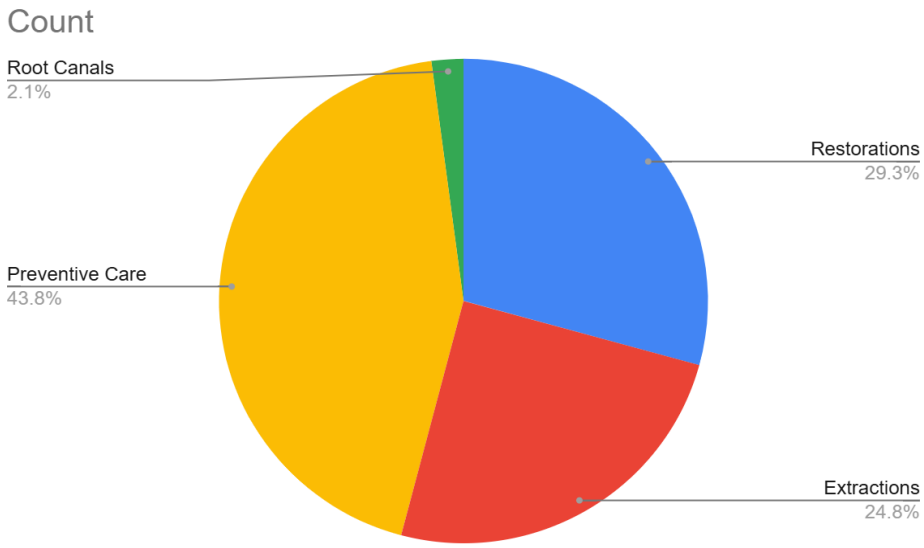
Figure 1. Patient volume by clinical site.



Procedures Performed

Procedures included 139 restorations, 118 extractions, 208 preventive treatments, and 10 root canal treatments. Preventive and restorative services represented the majority of care delivered.

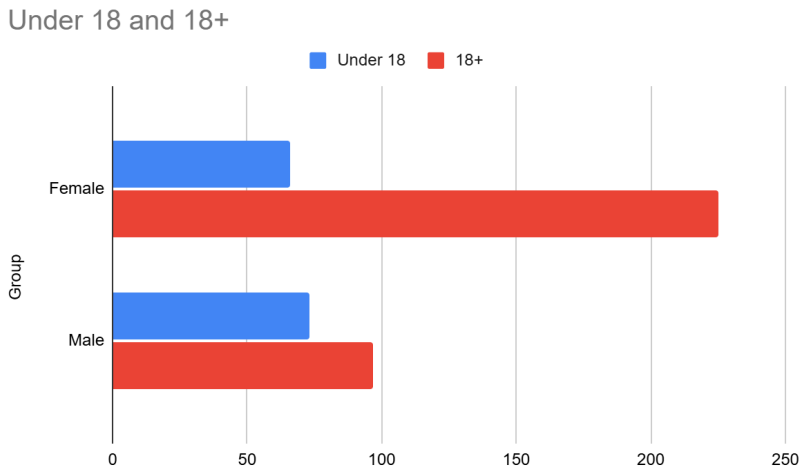
Figure 2. Distribution of dental procedures performed.



Demographics

Of the 461 patients treated, 291 were female (63%) and 170 were male (37%). Among females, 66 were under 18 and 225 were 18 or older. Among males, 73 were under 18 and 97 were 18 or older.

Figure 3. Patient demographic distribution.

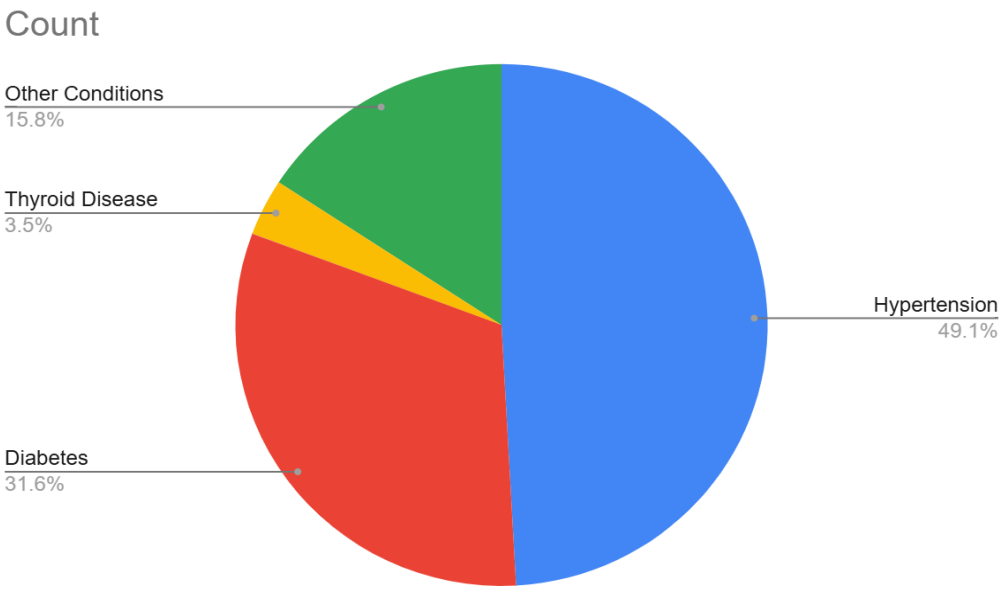


Systemic Health Findings

Systemic conditions were identified through a combination of patient self-report and on-site medical screening. A licensed physician conducted blood pressure and blood glucose testing to identify both known and previously undiagnosed conditions and to provide real-time medical clearance for dental procedures when necessary.

Screening supported the identification of hypertension (28 patients) and diabetes (18 patients), in addition to reported thyroid disease (2 patients). Additional conditions such as migraines, epilepsy and medication allergies were reported in smaller numbers.

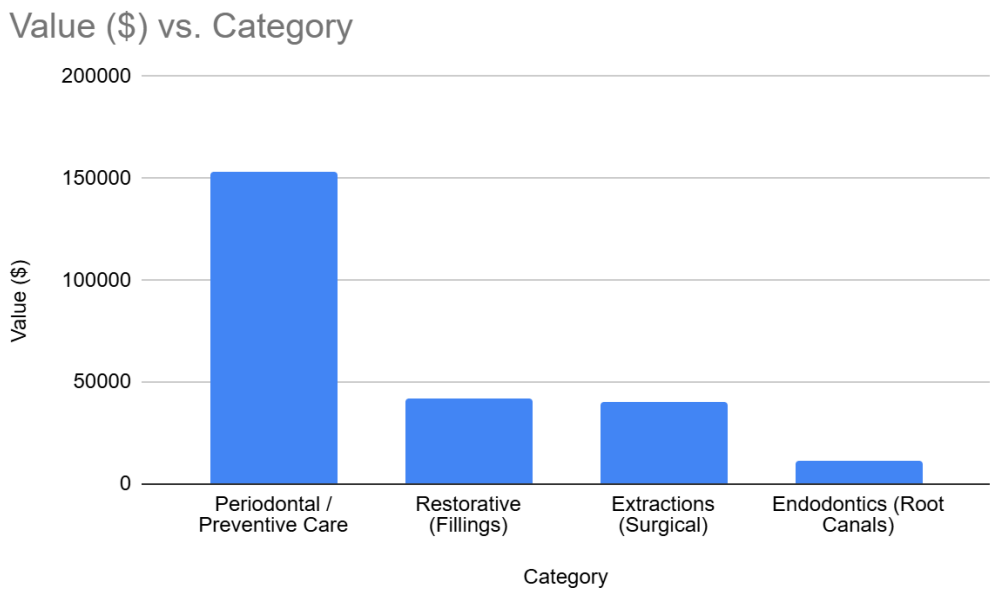
Figure 4. Prevalence of systemic health conditions among patients.



Estimated Value of Care

The total estimated value of care delivered was $246,984 USD. Preventive and periodontal services accounted for $152,894, restorative care for $42,330, extractions for $40,431, and endodontic therapy for $11,329. Preventive services represented the largest proportion of care.

Figure 5. Estimated value of care by treatment category.



Educational Outcomes

A total of 16 students completed post-mission surveys. Ninety-four percent reported high to very high improvement in clinical confidence, 94% reported making a meaningful impact on patient care, and 100% indicated they would participate again and recommend the experience.

Figures 6 to 8. Student survey results.

Figure 6. Clinical confidence improvement among students.

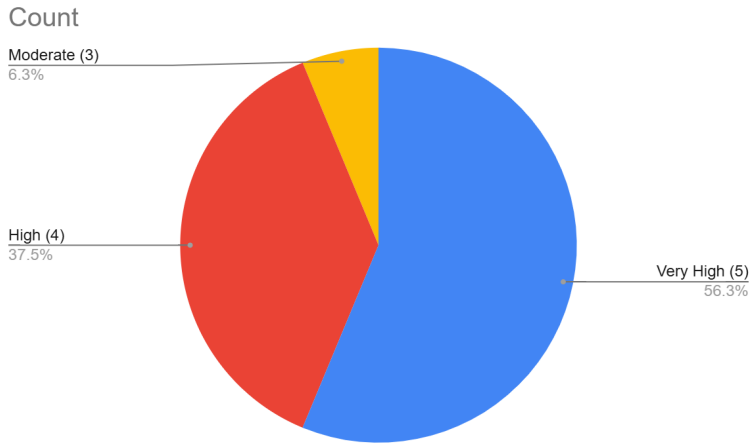


Figure 7. Perceived patient impact.

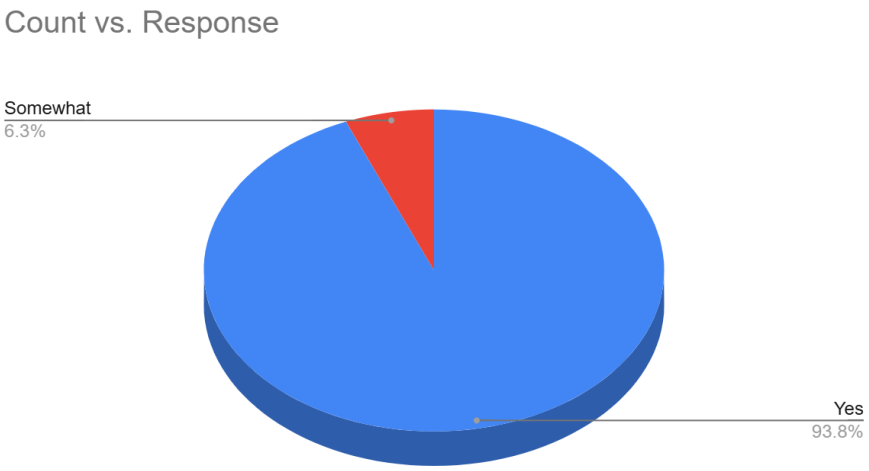
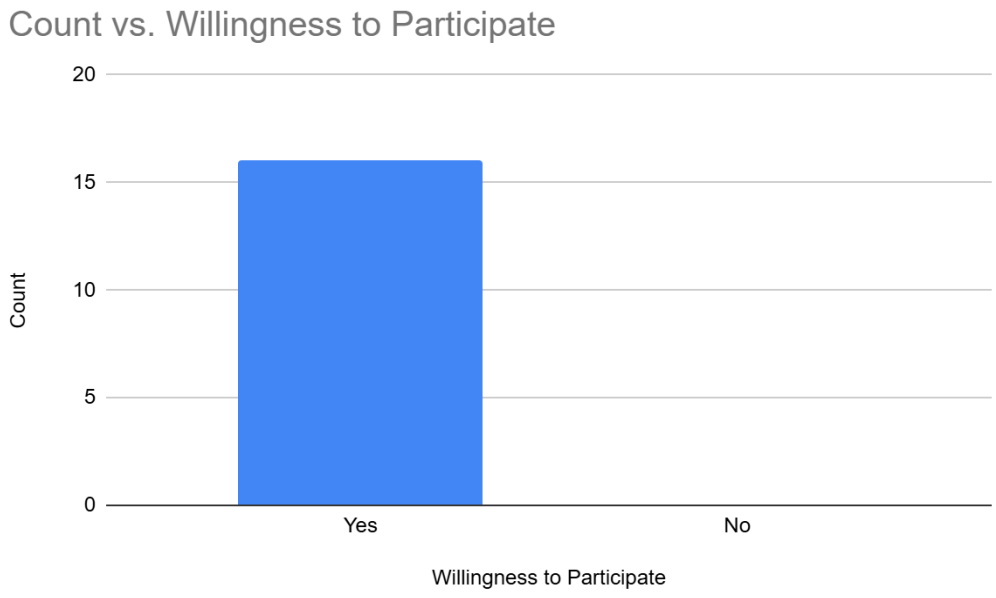


Figure 8. Willingness to participate again and recommendation rates.



Collaborative Impact

The mission included three local Salvadorean dentists, three dental students from Universidad Salvadoreña Alberto Masferrer, and a licensed physician who supported medical screening efforts. This interdisciplinary collaboration facilitated comprehensive patient care, enhanced clinical decision-making, and strengthened the integration of medical and dental services within the outreach setting. The involvement of local providers promoted cultural competence, knowledge exchange, and continuity of care within the community.

This model reflects a multidisciplinary approach aligned with global health best practices.

Discussion

This study demonstrates that short-term dental missions can provide substantial clinical care within a limited timeframe. The treatment of 461 patients reflects a significant unmet need for oral healthcare in underserved communities.

Preventive and restorative services accounted for the majority of procedures, indicating a high prevalence of untreated dental disease. Preventive and periodontal services represented the largest proportion of total care value ($152,894), emphasizing the critical role of early intervention and oral health education. These findings align with global public health recommendations emphasizing prevention as a cornerstone of oral health strategies.[1]

The inclusion of endodontic therapy demonstrates the feasibility of delivering more advanced dental procedures in resource-limited environments. Expanding the scope of care in outreach settings can improve patient outcomes and reduce the burden of untreated disease.[4]

The identification of systemic health conditions such as hypertension and diabetes highlights the importance of integrating medical considerations into dental outreach programs. The relationship between oral and systemic health is well established.[5]

The inclusion of a physician enabled on-site medical screening, including blood pressure and glucose testing, which served two critical functions: identification of previously undiagnosed systemic conditions and facilitation of immediate medical clearance for dental treatment. This approach enhanced patient safety and allowed for more comprehensive care delivery. In underserved populations, where access to routine medical care may be limited, this integrated model supports early detection of systemic disease and reinforces the importance of interdisciplinary collaboration.

This model demonstrates how dental outreach programs can serve as an entry point for broader health screening and intervention in underserved communities.

A key strength of this mission was the integration of local dentists and students, promoting sustainability, improving patient trust, and supporting long-term community engagement. Prior research emphasizes that collaboration with local providers is essential for ethical and effective global health interventions.[2],[3]

During the mission, an acute medical event involving a patient with a history of epilepsy was encountered and managed on-site. The presence of a licensed physician allowed for prompt evaluation and appropriate initial management of the episode, ensuring patient safety and stabilization. Emergency medical services were activated, and the patient was transported by ambulance to a hospital for further evaluation.

This experience further highlights the importance of medical preparedness and the integration of interdisciplinary care teams in outreach settings, particularly when treating populations with limited access to routine healthcare.

Student-reported outcomes further reinforce the educational value of such experiences, particularly in enhancing clinical confidence and fostering long-term commitment to service.[6] The majority of participants reported a significant increase in clinical confidence, likely attributed to high patient volume, hands-on experience, and real-time clinical decision-making in a resource-limited setting. Additionally, most students expressed a strong sense of meaningful impact on patient care, reinforcing the value of service-based learning.

All respondents indicated a willingness to participate in future missions and to recommend the experience to peers, suggesting high levels of satisfaction and perceived professional growth. Beyond technical skills, students were exposed to real-world healthcare challenges, including limited resources and diverse patient needs, which contributed to the development of adaptability, cultural competence, and clinical judgment.

The interdisciplinary nature of the mission, including collaboration with local providers and a licensed physician, further emphasized the importance of team-based care in addressing complex health needs in underserved populations.

Furthermore, patients were informed that if they experienced any post-operative discomfort or complications, they could seek follow-up care at the Center for Rehabilitation and Early Stimulation (Centro de Rehabilitación y Estimulación Temprana), a municipal clinic. Care was available with Dr. Carrillo, who participated in the mission, as well as Dr. Vásquez, ensuring continuity of care beyond the duration of the outreach program.

Sustained engagement is essential for maximizing long-term impact. As part of this commitment, SHINE Dental Missions will return to El Salvador in September 2026, building upon established relationships and further expanding access to care.

Limitations

Limitations of this study include lack of long-term patient follow-up, limited diagnostic resources, reliance on self-reported survey data, and the short duration of the mission.

Future Directions

Future efforts will focus on establishing a permanent dental clinic in El Salvador, expanding interdisciplinary care, incorporating advanced procedures, strengthening partnerships with local institutions, developing longitudinal patient tracking systems, and continuing outreach efforts with a scheduled return mission in September 2026 to reinforce continuity of care and community engagement.

Conclusion

The 2026 SHINE Dental Mission in El Salvador delivered high-impact clinical care, meaningful educational outcomes, and strong international collaboration. This model demonstrates the effectiveness of structured dental missions in addressing oral health disparities while promoting sustainability and global health engagement. Ongoing missions, including a planned return in September 2026, will further support continuity of care and long-term community impact.

Acknowledgments

The authors would like to thank volunteer clinicians and students, Salvadorean dentists and USAM collaborators, donors and supporting organizations, and community partners in El Salvador.

Additional support was provided by non-clinical personnel and municipal departments, including district directors, internal services teams, citizen participation groups, public lighting, transportation services, and the Department of Social Development, which assisted with food provision during the mission. Their collaboration was essential in ensuring the successful coordination, logistics, and overall execution of the outreach efforts.

We extend special gratitude to the Alcaldía de San Salvador Este, the honorable Mayor Wilmer Alexis Rodríguez, Municipal Mayor and Honorable Municipal Council (Alcalde Municipal y Honorable Concejo Municipal), and Alexia Rivas, Member of the Legislative Assembly (Diputada), for their invaluable support, collaboration, and commitment to advancing community health initiatives.

We also wish to extend our sincere appreciation to Nayib Bukele, President of El Salvador, for the transformative improvements in national security over the past three to four years. These advancements have played a critical role in making it possible for humanitarian organizations like SHINE Dental Missions to safely enter, operate, and serve communities that were

previously difficult to access. The enhanced safety environment has not only facilitated the delivery of essential healthcare services but has also restored trust, stability, and opportunity within these communities. As a result, our team was able to reach underserved populations more effectively, expand access to care, and provide meaningful, high-quality treatment in a safe and supportive setting.

References

1. World Health Organization. Global oral health status report: towards universal health coverage for oral health by 2030. Geneva: WHO; 2022.
2. Paul Farmer, Kim JY. Surgery and global health: a view from beyond the OR. World Journal of Surgery. 2008;32(4):533–536.
3. Judith N. Lasker. Hoping to Help: The Promises and Pitfalls of Global Health Volunteering. Cornell University Press; 2016.
4. Journal of Dental Research. Oral health disparities and global health initiatives. Journal of Dental Research. 2020;99(5):481–483.
5. The Lancet. Oral health: a neglected public health issue. Lancet. 2019;394(10194):249–260.
6. Journal of Dental Education. Impact of international service-learning experiences on dental students. Journal of Dental Education. 2018;82(6):626–635.