

### **Socioeconomic Predictors of Open Tibia Fracture Management in Kumasi, Ghana**

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**Purpose:** Open tibia fractures are a major cause of morbidity worldwide. In Ghana, as in many developing countries, management of these injuries is affected by resource availability and patient ability to pay. This study evaluates the association between socioeconomic status (SES) and open tibia fracture treatment in Ghana.

**Methods:** Adult patients with open tibial shaft fractures at a single hospital in Kumasi, Ghana were enrolled over 12 months. Demographics, medical history, and socioeconomic factors were collected for each patient. As SES is often difficult to quantify, the data were used as markers for SES: educational attainment, employment status, weekly income, household setting, and access to electricity. Injury characteristics and treatment patterns were also recorded.

**Results:** Of 182 enrolled patients, the majority were male (84%) and the mean age  $34 \pm 13$  years. The majority of patients had no medical comorbidities (94%). Most worked for pay prior to injury (72%), making an average of 418 Ghana Cedis (\$66 USD) and working an average of 52 hours weekly. Completion of primary and secondary education was the most common among participants (80%). Most patients lived in a rural setting (58%) in a household with electricity (86%). Government insurance was the most common form of insurance (67%) and 31% were uninsured. Gustilo-Anderson type 3A injuries were the most common (49%), and 68% underwent surgery (57% external fixation and 7% intramedullary nailing). No association was found between type of treatment received (operative or nonoperative) and preinjury employment, educational attainment, household setting, access to electricity, or insurance status. There was no difference in the mean work hours or income between the operative and nonoperative groups ( $P = 0.09$  and  $P = 0.08$ , respectively).

**Conclusion:** Various markers of socioeconomic status were not found to influence treatment of open tibia fractures in Ghana. Future studies will focus on predictors of definitive treatment as well as cost-effectiveness of treatment strategies for open tibia fractures in this setting.