INTRODUCTION Many factors of non-cosmetically finished prostheses contribute to poor cosmesis. To name a few, interface materials may be bulky and thus highly visible to onlookers. Buttons, straps, buckles or other suspension necessities are also conspicuous beneath clothing and stand out visibly. Limb loss negatively impacts body image to the extent that functional activity and societal participation may be adversely affected. Little is available in the scientific literature on the subject of cosmetic covering for artificial limbs including the rate of utilization of cosmetic covers by type of cover, usage differences by gender, amputation level and by funding source. Therefore, the purpose of this project was to describe the utilization of cosmetic covers in lower limb prostheses in a cohort of lower extremity amputees. We hypothesized cosmetic cover utilization would be higher among females with transtibial (TTA) level amputation. We further hypothesized that the majority of cosmetic covers utilized would be of the pull-up skin type and funded by Medicare.

METHOD The protocol was approved by the University of South Florida’s Institutional Review Board. A retrospective cohort design was utilized. Patient records from an outpatient prosthetic practice were retrospectively reviewed for all transtibial (TTA) and transfemoral (TFA) amputees who received a prosthesis within a pre-selected 2yr period. The following data were collected from patient records: Gender, Insurance type, Utilization (or not) of a cosmetic cover in the study period, and the Type of cover.

Statistical Analysis Descriptive statistics were calculated and stratified by amputation level. Comparisons were made across whether a cover was used. To determine if there were significant differences over usage and demographics, chi-squares/Fisher’s exact tests were used for categorical variables and t test for continuous variables. For those who used a cover, comparisons were completed to determine if there was a difference between type of cover used and demographics. As in previous analysis chi-squares/Fisher’s exact test were used for categorical variables (ie gender & insurance type) and ANOVA for continuous variables (age). Analysis was completed using SPSS v19.0 (Armonk, NY). Significance was set at p<0.05. To determine if cover usage could be predicted by demographics, logistic regression models were completed using the predictors that were significant in the univariate analysis.

RESULTS In total, 294 records were reviewed. Of these, 221 were TTA and 73 were TFA. In the TFA group, 48 of 73 were female and in the TTA group, 50 of 221 were female. Females were significantly more likely to use a covers for both TTA and TFA. Insurance type did not have a determination if a cover was used or not; regardless of amputation level. For those who used a cover, the majority of TTA used a pull-up skin type of cover. There was no relationship between gender or age with respect to type of cover used. Those with Medicare insurance were more likely to use a pull-up cover (p=0.02). For individuals with TFA, there was no relationship between type of cover used, gender or insurance. Those who were younger were more likely to use a pull up skin cover (p=0.03). Results from the logistic regression indicated that women were more likely to use covers than men in both TTA and TFA.

DISCUSSION Within the TFA subset of this cohort it was surprising that more than half were female as this is inconsistent with societal demographics which report that more males are amputees than are females. This inordinately high number of females is also atypical for what is reported in other prosthetic studies where, commonly, few if any females are participants. Nevertheless, our hypothesis was proven in that females did utilize prosthetic covers more so than their male counterparts.

Regarding the type of cosmetic covering, we hypothesized that the best balance of durability, aesthetically pleasing, and economy would be the most commonly selected and utilized cover. In our estimation, that combination of parameters would best be met with a commercially available pull-up skin over a shaped foam cover. The pull up skin was the most commonly used. This could be somewhat biased and regionally or practice specific.

CONCLUSION Female amputees utilized more cosmetic covers than their male counterparts regardless of level of amputation. The pull-up skin type cover was more likely used by relatively younger amputees, at the transtibial level and when Medicare was the payor. These data fill an enormous gap within the literature but much more study is needed within this area. For instance, understanding the protective benefits of a cover would better justify both their need and reimbursement and augment the obvious psychological benefits associated with their use.

CLINICAL APPLICATIONS Understanding who most likely utilizes cosmetic covering as part of their prosthesis and the most common cover type will assist the clinician in their practice and with reimbursement.


Cosmetic Covering in Lower Limb Amputees
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