INTRODUCTION  Epidemiologic data on persons with bilateral transfemoral amputation (BTFA) is lacking. Potential reasons include the small number of BTFA’s plus the possibility of impaired mobility to the extent that research participation may be adversely affected. Some studies including BTFA’s in inpatient settings reference severe comorbidities including cardiac and mental health issues commonly associated with advancing age. While such issues clearly exist in BTFA’s, there are a number of persons who lost limbs due to trauma at comparably younger ages that ambulate successfully in the community with prostheses. Little is known about their actual or perceived function.

Reference data on perceived function within this group would be valuable to clinicians managing their rehabilitation and prosthetic care. A brief, valid and reliable survey instrument may be an ideal method for a clinician to determine perceived baseline function and be able to reference throughout care provision. One advantage of such self-report scales is the ability to follow up by postal delivery or solicit baseline administration in this way prior to physically examining the patient. The Prosthesis Evaluation Questionnaire’s Mobility Section (PEQ MS) is a valid and reliable instrument for assessing locomotor capability in this way. It has been further refined to eliminate redundant categories, poorly fit questions and to improve item separation. This version is referred to as the PEQ-MS 12/5 reflecting the 12 items their five ordinal responses. The purpose of this study was to describe the perceived locomotor capability in a sample of community ambulating BTFA’s who utilize prostheses.

METHOD  A retrospective cohort design was used. Records were reviewed following a BTFA clinic where the PEQ-MS 12/5 was administered. Data were analyzed using Wilcoxon Rank-Sum Test for Difference in Medians. NCSS PASS statistical software was used (Kaysville, Utah). Statistical significance was set at p≤0.05.

RESULTS  Twenty-two (N=22) community ambulating BTFA’s participated. Seventeen used full length (17/22) and five used stubby prostheses (5/22). Prosthetic socket, suspension, feet and knee combinations varied. Amputation etiology was predominantly traumatic.

In 11/12 items, the median score among BTFA’s using stubby prostheses was 2 (5 pt scale: 0-4) and item #8 (walking on slippery surfaces) was rated the lowest (median score 1). Conversely, BTFA’s using full length prostheses tended to rate each item higher such that the median score of 2 only appeared once (item 2-confined spaces). The median score of 3 appeared in 7/12 items and in four items, the median score was 4. Items 4 (downstairs), 11 (sit & stand-low chairs) and 12 (sit & stand-toilet) were the four items that were not statistically between the groups.

DISCUSSION  These data indicate that persons with BTFA using stubby prostheses tend to rate the difficulty of completing the ambulatory tasks included in the PEQ-MS 12/5 as moderate (35-64% ability). Item 8 was identified in the BTFA’s using stubby prostheses as being the most difficult task which agrees with the findings of Franchignoni et al. Interestingly, this group identified item 10 sit & stand from a high seat) as the least difficult task however stubby users’ median score was 2 and the range was 2-3 suggesting that this group did not necessarily find this to be an easier task. Rather, stubby users seemed to find it comparably difficult to most of the other items. It seems the obvious height restriction associated with stubby use is a factor in this task.

The BTFA’s using full length prostheses rated their abilities to complete the PEQ-MS 12/5 tasks significantly higher than that of stubby users in 8/12 items. These tasks included stair descent (item 4), ramp descent (item 6), sit and stand from low chairs (item 11) and the toilet (item 12). While these are not the only tasks requiring knee control, this task list represents activities where a high degree of knee control is necessary. Further, these functional areas have been emphasis areas relative to microprocessor knee systems.

CONCLUSION  BTFA’s report moderate (stubby users) to little (full length prosthesis users) difficulty in locomotor tasks included in the PEQ-MS 12/5. This suggests that there is a clear difference in the perceived abilities of these two different sub-groups of BTFA’s. It further suggests the PEQ-MS 12/5 does not present an obvious ceiling effect leaving room for quantification of improvement in locomotor tasks throughout rehabilitation.

CLINICAL APPLICATIONS  The PEQ-MS 12/5 could be administered to BTFA’s in advance of or at the first evaluation to establish perceived baseline function. Thereafter, re-administration could be used to detect functional change. This abstract offers reference data for such clinical applications.