Background There is currently a rapid physical activity transition taking place in developing countries that includes a decrease in active transportation. Building on findings from an earlier systematic review, this paper describes the development and convergent validity of self-administered child and parent questionnaires assessing active transportation of children in three African countries: Kenya, Mozambique and Nigeria. Methods A pilot study was conducted to examine the convergent validity of the developed questionnaires by comparing responses between children and their parents (N = 121; n = 43 for Mozambique, n = 24 for Kenya and n = 54 for Nigeria). After modification, the questionnaires were then administered to a larger convenient sample of both children and parents from Kenya (n = 1123), Mozambique (n = 1097) and Nigeria (n = 831) which defined the main study. The questionnaires assessed active transportation to/from 8 categories of destinations including school, friends' and relatives' home/houses, parks and playgrounds among others. Twenty items were used to assess child - and parent-perceived barriers to active transportation, and the parent questionnaire inquired about parent education and availability of cars, motorcycles, and bicycles. Spearman's rho was used to compare children's mode of travel in the pilot study while the prevalence-adjusted bias-adjusted kappa (PABAK) coefficient was used to compare convergent validity between children's and parents responses on active transportation in the main study. Results Findings of the main study show that convergent validity for active transportation to and from each destination in the combined sample ranged from 0.472 (from school) to 0.998 (to other places). Convergent validity for challenges/barriers to active transportation to school ranged from fair (0.30 - The route does not have good lighting) to substantial (0.77 - My child has a disability). It varied between countries from fair (n = 11-items) to moderate (n = 9-items) agreement in Kenya and from poor (n = 2-items) to fair (n = 16-items) agreement in Nigeria. Data from Mozambique was however missing and therefore could be included. Conclusions The questionnaires provided valid information on the number of trips to/from various destinations and show acceptable and modest convergent validity for measuring barriers to active transport in a sample of children from three African countries. These questionnaires may be suitable for future research on active transport among school children in Sub-Saharan African countries.