A measure of self-motivation - a tendency to persist in a context lacking extrinsic reinforcement - has sometimes predicted adherence to habitual physical activity and exercise in adults. However, the measurement of self-motivation in children has not been attempted. This paper, therefore, reports research in physical activity contexts as a modification of the Self Motivation Inventory for Children. Six studies investigating 1382 subjects from two countries are reported. Although results were variable and require follow up, and replication to verify trends, it was found with British children that the SMI-C has factorial validity, has acceptable internal consistency and test-retest reliability, is uncorrelated with a measure of social desirability and has reasonable concurrent and predictive validity. However, its psychometric properties with a sample of children from Nigeria were weak and suggest that cross-cultural research using the instrument is premature.