

Publication

Effects of school-based physical activity and multi-micronutrient supplementation intervention on growth, health and well-being of schoolchildren in three African countries: the KaziAfya cluster randomised controlled trial protocol with a 2 x 2 factorial

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4525103

Author(s) Gerber, M.; Ayekoe, S. A.; Beckmann, J.; Bonfoh, B.; Coulibaly, J. T.; Daouda, D.; du Randt, R.; Finda, L.; Gall, S.; Mollel, G. J.; Lang, C.; Long, K. Z.; Ludyga, S.; Masanja, H.; Muller, I.; Nqweniso, S.; Okumu, F.; Probst-Hensch, N.; Puhse, U.; Steinmann, P.; Traore, S. G.; Walter, C.; Utzinger, J.

Author(s) at UniBasel [Bonfoh, Bassirou](#) ; [Coulibaly, Jean](#) ; [Long, Kurt](#) ; [Probst Hensch, Nicole](#) ; [Steinmann, Peter](#) ; [Utzinger, Jürg](#) ; [Pühse, Uwe](#) ; [Gerber, Markus](#) ; [Müller, Ivan](#) ; [Lang, Christin](#) ; [Ludyga, Sebastian](#) ; [Gall, Stefanie](#) ; [Beckmann, Johanna](#) ;

Year 2020

Title Effects of school-based physical activity and multi-micronutrient supplementation intervention on growth, health and well-being of schoolchildren in three African countries: the KaziAfya cluster randomised controlled trial protocol with a 2 x 2 factorial design

Journal Trials

Volume 21

Number 1

Pages / Article-Number 22

Keywords Children, Côte d'Ivoire, Dual disease burden, Health, Multi-micronutrient supplementation; Placebo, Physical activity, South Africa, Tanzania, Well-being

Mesh terms Accelerometry; Anthelmintics, therapeutic use; Child; Child Development, physiology; Child Health; Child Welfare; Cote d'Ivoire; Dietary Supplements; Exercise, physiology; Female; Health Education, organization & administration; Helminthiasis, prevention & control; Humans; Male; Micronutrients, administration & dosage; Physical Fitness, physiology; Quality of Life; Randomized Controlled Trials as Topic; Schools, organization & administration; South Africa; Tanzania; Treatment Outcome

Background In low- and middle-income countries, infectious diseases remain a key public health issue. Additionally, non-communicable diseases are a rapidly growing public health problem that impose a considerable burden on population health. One way to address this dual disease burden, is to incorporate (lifestyle) health promotion measures within the education sector. In the planned study, we will (i) assess and compare physical activity, physical fitness, micronutrient status, body composition, infections with soil-transmitted helminths, *Schistosoma mansoni*, malaria, inflammatory and cardiovascular health risk markers, cognitive function, health-related quality of life, and sleep in schoolchildren in Côte d'Ivoire, South Africa and Tanzania. We will (ii) determine the bi- and multivariate associations between these variables and (iii) examine the effects of a school-based health intervention that consists of physical activity, multi-micronutrient supplementation, or both. **Methods** Assuming that no interaction occurs between the two interventions (physical activity and multi-micronutrient supplementation), the study is designed as a cluster-randomised, placebo-controlled trial with a 2x2 factorial design. Data will be obtained at three time points: at baseline and at 9 and 21 after the baseline assessment. In each country, 1320 primary schoolchildren from grades 1–4 will be recruited. In each school, classes will be randomly assigned to one of four interventions: (i) physical activity; (ii) multi-micronutrient supplementation; (iii) physical activity plus multi-micronutrient supplementation; and (iv) no intervention, which will serve as the control. A placebo product will be given to all children who do not receive multi-micronutrient sup-

plementation. After obtaining written informed consent from the parents/guardians, the children will be subjected to anthropometric, clinical, parasitological and physiological assessments. Additionally, fitness tests will be performed, and children will be invited to wear an accelerometer device for 7 to objectively assess their physical activity. Children infected with *S. mansoni* and soil-transmitted helminths will receive deworming drugs according to national policies. Health and nutrition education will be provided to the whole study population independently of the study arm allocation. Discussion The study builds on the experience and lessons of a previous study conducted in South Africa. It involves three African countries with different social-ecological contexts to investigate whether results are generalisable across the continent.

Publisher BioMed Central

ISSN/ISBN 1468-6708 ; 1745-6215

edoc-URL <https://edoc.unibas.ch/74215/>

Full Text on edoc Available;

Digital Object Identifier DOI 10.1186/s13063-019-3883-5

PubMed ID <http://www.ncbi.nlm.nih.gov/pubmed/31907019>

ISI-Number WOS:000514647500002

Document type (ISI) Journal Article