

KEIGAAF

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Impact paragraph

Conclusions of this dissertation

The main goal of this dissertation was the implementation and evaluation of KEIGAAF. The KEIGAAF intervention was a flexible and context-based physical activity and nutrition intervention implemented in primary schools located in low socio-economic neighborhoods in Eindhoven, the Netherlands.

An essential element of this intervention was mutual adaptation in intervention development and implementation. During mutual adaptation, top-down and bottom-up forces meet and are combined. The navigation between top-down and bottom-up influences was not an easy process, given the myriad of factors influencing the implementation of a flexible and context-based intervention. This mutual adaptation resulted in a tailored intervention on the promotion of physical activity behavior and healthy nutrition in primary schools. Implementing such an intervention consists of a long-term process (taking up at least one year of preparation and two years of implementation), the involvement of multiple stakeholders and, skilled advisors to support the implementation.

The KEIGAAF intervention led to improvements in children's BMI z-score and moderate-to-vigorous physical activity (PA) behavior after two years, especially children of vulnerable populations. The most favorable results concerning children's BMI z-score and PA behavior were seen when working groups implemented a comprehensive PA approach. In a comprehensive PA promotion approach, PA is promoted during physical education, during school hours (e.g., during recess and during educational hours, for example, in the form of energizers), and before and after school (e.g., after school sports and active transportation to school). Staff are involved in this approach as well as the community and parents [14]. Not all schools were able to implement a comprehensive approach. The ones that had the most vulnerable population (in terms of ethnicity and educational level of the parent) and in need for improvement in sedentary and PA behavior succeeded in implementing such approach.

The studies described in this dissertation have generated knowledge for science and for practice on the implementation and evaluation of school health promotion. In addition, the implementation of the KEIGAAF intervention has led and will lead to social changes. Firstly, the implementation and evaluation of the KEIGAAF intervention has provided new insights for (school) health promotion, which will hopefully lead to improvements within this field. Secondly, the implementation of the intervention resulted in changes within the participating schools. The scientific and social impact of this dissertation are described in this paragraph.

Scientific impact of this dissertation

The results presented in this dissertation are published in scientific journals and presented at (inter)national conferences. The results are valuable for scientific researchers in the field of school health promotion and practitioners working at organizations that develop and/or implement school-based interventions, such as the National Institute for Public Health and the Environment, Municipal Health Services, JOGG and, (municipal) sports organizations. The researchers and practitioners working in the field of school health promotion are moving from traditional top-down theory-based interventions towards more bottom-up context-based interventions. In a top-down intervention, health professionals implement an intervention package and require implementation according to the intervention protocol. Whereas, in a more bottom-up intervention, school staff, parents, local professionals and children are involved in the development and implementation of the intervention. For many years, the theory-driven, top-down intervention was considered to be the golden standard in school health promotion, given the fact that it leads to optimal use of expert knowledge and the implementation of evidence-based interventions. However, in recent years, research on school-based health promotion has shown that a specific intervention package does not fit all school environments and that more flexibility is required in school-based interventions to ensure that the intervention fits school' needs and opportunities. The studies on the implementation and effectiveness of the KEIGAAF intervention confirm the importance of bottom-up involvement and emphasize the added value of context-based school health promotion. The results support researchers and practitioners in moving from top-down interventions to more bottom-up interventions that interact with the local context. In addition, the studies presented in this dissertation might challenge the view of researchers on appropriate research designs to evaluate these context-based interventions.

The implementation of the KEIGAAF intervention provides a practical example of school health promotion in line with the School Health Promotion framework of the World Health Organization. It shows how to implement the theoretical principles of the framework: (1) health education at school; (2) changes to the physical and social school environment; and (3) involvement of parents and the wider community in the promotion of children's health behaviors [37]. The insights into the implementation of KEIGAAF also shows the time, effort and preconditions needed to implement these principles. Besides, it shows the difficulties with implementing some of these theoretical principles, such as the involvement of the whole school environment and the implementation of healthy policies in an environment that has educational goals as main responsibility.

Social impact of this dissertation

The implementation of the KEIGAAF intervention has led to changes within the school environments of the intervention schools. Most changes were small and easy to incorporate in current practices, while some required more effort to implement. In the end, they all contributed to changes within children's BMI z-score and PA behaviors. Six schools were able to continue these changes within the second year of implementation and guaranteed to continue these in the upcoming years. These schools are currently being supported in the implementation of KEIGAAF by school health promoters of the Municipal Health Service of Brabant Zuidoost. The activities implemented in the intervention schools are being transferred to other schools via the school board of the intervention schools and other stakeholders of the intervention, such as the Municipal Health Service of Brabant Zuidoost, the municipality and the local sports support organization.

The results of the KEIGAAF intervention are being disseminated via symposia, like the Day of Sports Research (in Dutch: 'Dag van het Sportonderzoek') and the end symposium of the Healthy Primary School of the Future. People that are interested in the KEIGAAF intervention, including schools, can obtain more information on the intervention or contact the project leader via the website www.eenlevenlangbewegen.nu of the lectorate of Move to Be of Fontys University of Applied Sciences, School of Sports Studies. On this website, the KEIGAAF intervention is shown as best practice. An animation video is presented in which the mutual adaptation approach is explained. The KEIGAAF intervention acts as inspiration for multiple (research)projects and partners of Fontys University of Applied Sciences, School of Sports Studies.

Additionally, the mutual adaptation approach is embedded in the bachelor programs Sport Studies and Physical Education, and the master program Sports and Physical Education of Fontys University of Applied Sciences, School of Sport Studies. By implementing the approach in these programs, future and current physical education teachers and sports professionals are educated on a combined top-down and bottom-up approach, the importance of mutual adaptation, and obtain practical and scientific skills concerning the implementation and evaluation of this approach. In the future, this will lead to community-involved (school) health promotion in which these current students will play an important role as advisors and/or researchers.

Concluding, the studies presented in this dissertation contribute to the development and implementation of effective context-based primary school interventions aimed at the improvement of energy balance-related behaviors of children.