

# Healthy Universities. The development and implementation of a holistic health promotion intervention program especially adopted for staff working in higher educational sector: the ARK study

Siw Tone Innstrand<sup>1\*</sup> and Marit Christensen<sup>2</sup>

*<sup>1</sup>NTNU Center for Health Promotion Research  
Department of Public Health and Nursing,  
Norwegian University of Science and Technology*

*<sup>2</sup>Department of Psychology  
Norwegian University of Science and Technology*

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\*Corresponding author. E-mail: [siw.tone.innstrand@ntnu.no](mailto:siw.tone.innstrand@ntnu.no)

**Abstract:** Underpinned by the Healthy Universities settings concept, this paper presents a holistic intervention approach, labelled ARK, to improve the health and well-being among academic staff. ARK (a Norwegian acronym for work environment and climate study) has been conducted among 18 universities and university colleges in Norway. The survey has collected information on the employees' perception of the psychosocial work environment, well-being, and health from over 15.000 respondents. Further, it has provided valuable information and experiences on organizational development processes on how to successfully implement a health promoting intervention program. The aim of the present paper is to present the ARK project and provide suggestions on how to conduct a health promoting intervention program in a university setting based on the experience and knowledge collected from ARK. This understanding can inform and inspire the planning of future health promoting university initiatives to meet the distinctive needs of its employees.

## INTRODUCTION

The Ottawa Charter for Health Promotion suggests that health is created and lived by where people learn, work, play, and love (1). Universities provide an ideal setting to promote health and well-being to students, staff, and the wider community through their education, research, knowledge exchange, and institutional practices. Although there has been a growing interest in applying a healthy setting approach within higher education, there is a lack of any formal program for Healthy Universities (2) or guidelines on how to implement a healthy setting approach into best practice within higher education (3). Moreover, since most health-related reviews, guidelines, and policy documents (and hence health related interventions and activities) within higher education have focused on students (2), we know less about how the health and well-being of the employees in higher education that can be promoted. The health and motivation of workers is highly significant for universities and colleges to deliver high-quality service (2). Building upon the Healthy Universities settings line, the aim of the present study is to present a holistic intervention approach, labelled ARK, aimed at improving the health and well-being among employees at universities.

## **Healthy Universities**

The concept of Healthy Universities, sometimes also labelled Health Promoting Universities, addresses a healthy setting approach for the higher education institutions. Although not clearly defined, Healthy Universities aims to “create a learning environment and organisational culture that enhances the health, well-being and sustainability of its community and enables people to achieve their full potential” ([www.healthyuniversities.ac.uk](http://www.healthyuniversities.ac.uk)). This implies a university not only defined by the absence of illness, but a community in which people can thrive and flourish (5).

There has been a growing interest in Healthy Universities as the universities, policy-makers, and stakeholder organizations recognize the beneficial impact of higher education on the health and well-being of students, staff, and the wider community (2). In particular, the Healthy University approach has the potential of enhancing the quality, reputation, and distinctiveness in the higher education “market”. Other suggested benefits are student recruitment, enhanced staff performance and productivity, and improved health among students and staff, leading to institutional and societal productivity and sustainability (2). In fact, a recent study conducted among Norwegian academic employees suggests that employee work engagement is related to productivity as measured by an increase in publication points on an aggregated level (6). Thus, in times when universities are increasingly exposed to market trends in which the universities economies are vital for a sustainable knowledge-based economy (5), a health promotion approach to universities is significant.

In 1998, WHO published a working document for health promoting universities, suggesting important concepts, experiences, and frameworks for action (7). Although this document raised awareness of the potential for Healthy Universities, it did not result in any formal programme (2). In general, knowledge on how to implement a Healthy University approach remains poorly documented (3). In a systematic review, Suárez-Reyes and Van den Broucke (3) identified nine intervention studies describing the implementation of the Health Promoting University concept. In these studies, most common items of work targeted the health problems of young people, like prevention of alcohol and drug abuse, mental health, healthy eating, sexual health, road safety, physical activity, and smoking. Unfortunately, this limited understanding of health promotion strategies that address behaviour risk factors only is also reflected in approaches to health promotion in general(8). Dooris, Doherty, and Orme

(5) argue that a “pathogenic” perspective and a focus on health problems facing universities needs to be complimented by a more salutogenic perspective and research that focuses on strengthening positive health assets and potentials. Elimination of the risk of illness and infirmity does not automatically ensure motivation. There is a growing agreement that in order to help employees thrive and organizations survive, knowledge about both health impairment *and* motivational processes is required, as a healthy individual and a healthy culture are strongly and mutually connected to healthy profits for the organization. Building upon the theoretical framework of the Job Demand-Resources (JD-R) theory (9-11), the ARK intervention programme offers a holistic approach to Healthy Universities by targeting both obstacles and possibilities in the university sector. Moreover, in line with health promotion initiatives, it provides a bottom-up approach “enabling people to increase control over their health and its determinants, and thereby improve their health” (12).

## **ARK**

ARK is a comprehensive plan for investigation and implementation of interventions regarding the work environment in higher education. ARK is a Norwegian abbreviation for “Arbeidsmiljø og klima undersøkelser” (work environment and climate survey). The development of ARK was founded by the Norwegian Council for Higher Education and initiated by the four largest universities in Norway, who wanted to collaborate on making a common work environment survey specially adapted to the university sector and its challenges and needs.

The idea was that a common work environment survey opens knowledge exchange and learning across universities and university colleges, and that by collecting data and storing these in a common databank freely available for research, new knowledge and knowledge exchange arise. ARK has a steering committee to which academic and administrative personnel from several universities and university colleges contribute. A learning and experience conference is arranged annually for all parties involved.

Since 2011, 18 universities and university colleges have joined and used the ARK intervention program, currently embracing responses from over 15.000 participants in the surveys, and even more people participating in the intervention program. Figures from 2015 indicate that the sample was equally distributed across gender with 54% women and 46% men, and age distributed as follow; under 30 year (9,8%), 30-30 year (23,2%), 40-49% year

(27,2%), 50-59 year (24,3%), and 60 year or older (15,5%). About 38 % had an Academic position, 12 % was a Doctorial research fellow, 45 % was Technical/administrative staff and 5 % had a position as a leader. The ARK intervention program and its corresponding KIWEST (Knowledge Intensive Work Environment Survey Target) questionnaire were translated and adopted into Swedish and implemented as a pilot at a university college in Sweden in autumn 2017. The KIWEST questionnaire was also translated into English and Dutch.

- **Development of ARK**

A workgroup, a steering group, and a reference group with representatives from human resource management, scientific employees, organizational psychologists, and practitioners was created to develop a tool for systematic mapping of the psychosocial conditions that would: 1) cover the most important psychosocial working environment factors, 2) generate the basis for working environment interventions, 3) be adapted to the special characteristics of the university sector, and 4) satisfy the statutory requirement for systematic and documented HES activities with psychosocial factors (13). The development of the KIWEST questionnaire was based on the outcome of these meetings, a literature review, and qualitative interviews. It was desired that the questionnaire should be sector specific, theory driven, and consist of previously validated measures. The KIWEST questionnaire was pilot tested on a small sample before a full survey with survey feedback was tested first at one faculty (n=70), then on a whole university (n=5600). The final Intervention Programme was launched for the university sector's use in 2013 and consists of: 1) Knowledge Intensive Work Environment Survey Target (KIWEST) questionnaire; 2) Factsheets I and II, giving key information about the unit size, etc., and a self-evaluation of the implementation process and actions completed; 3) a structured guideline for follow-up results from KIWEST and how to accomplish feedback meetings; and 4) the ARK Research Platform, a database for storing data from completed surveys.

The theoretical underpinning of ARK is the JD-R model (9-11), figure 1. Briefly, the model states that health will be impaired when prolonged exposure to high psychosocial demands is paired with inadequate resources. Conversely, when adequate resources are provided in high work demand environments, work motivation increases and well-being improves. In addition, research suggests that job resources buffer the impact of job demands on strain (e.g., 14,15). Thus, the ARK intervention programme focuses on both strains and resources in the work environment and arranges for a participatory approach in which the employees discuss the

pro and cons of their work environment and develop actions for what they would preserve or improve based on the screening by the KIWEST questionnaire. More specifically, the implementation of the ARK Intervention Programme is divided into five phases as visualized in Figure 2, inspired by the work of Karina Nielsen et al. (16).

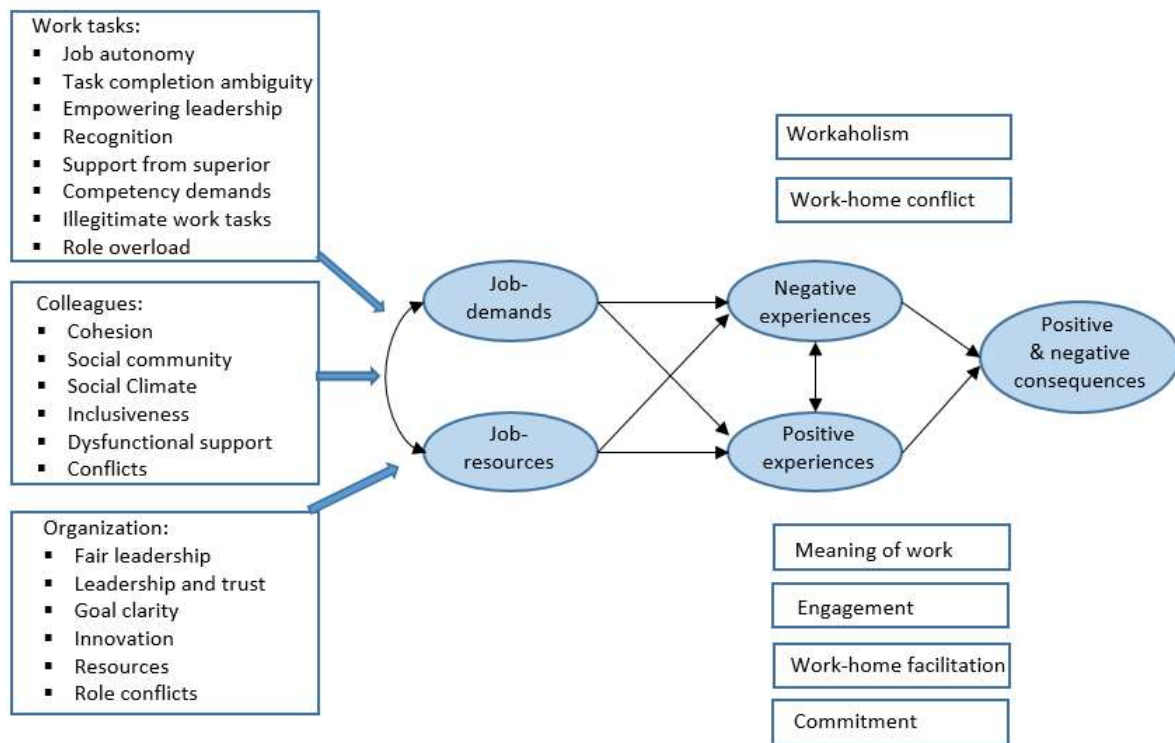


Figure 1. KIWEST and the JD-R model (13, p. 8).

- **Implementation of ARK – the five phases**

Phase I. The initial phase aims to prepare the organization for implementation of ARK and adopt its processes to the pertinent needs and issues in the individual organisation. Risk assessment, distribution of responsibility, and an agreed progress plan are created. As suggested by many studies and experienced by the ARK implementation, good anchoring and readiness for change in management, as well as well-defined goals, good communication routines, and “progress plans”, are highly crucial for the process to be successful (16,17). For example, a promotion video of the ARK Intervention programme made by the faculty management send on email to all employees by mail increased the response rate significantly in one of the universities. As part of the preparation, Fact Sheet I is sent to all unit managers and filled in by the manager in cooperation with a safety representative.

Phase II. The KIWEST measure plays an essential part in the screening phase and is especially adopted to the demands and resources experienced among academics. The psychometric properties of the measure have proved to be valid and reliable (18). A set of standard analyses (i.e. average scores) is calculated for each defined organisational unit (i.e. faculty, department, section) by representatives at ARK and given in a report to each unit. Figures from this report is presented at feedback meetings for all the staff at each unit by a process facilitator. This process facilitator can be the unit manager, a human resource representative at the university or an external trained facilitator. This varies from each unit and across different universities but needs to be clarified in the preparation phase. A short film explaining the theoretical background (the JD-R model) is made in English and Norwegian (see Supplementary materials below) to facilitate these feedback meetings. All data are stored in a common data bank and made freely available for research. These research and findings provide a feedback loop of knowledge to the ARK intervention programme on how to enhance the health and well-being of its community, and hence its sustainability.

Phase III. The results from the survey are presented in survey feedback meetings, where they are interpreted and discussed by the employees. The employees are asked to identify three things they are satisfied with and would like to preserve, and three things that can be improved. After prioritizing these different needs of action they are asked to develop appropriate interventions. Initial experience indicates that these actions most often are on improving information and communication systems, organization of work/work tasks and meetings, career development and skills enhancement, or nurture social support and relationships.

Phase IV. To secure the implementation of actions it is recommended that the action plans and the progression are communicated and discussed. In example, a clear deadline should be set for when actions are to be completed and by whom. In this phase, the responsibility for further implementation of ARK Intervention Programme should be transferred from the process facilitator to the unit's management if the process facilitator used in the feedback meeting were someone else as the unit manager.

Phase V. Finally, to evaluate the whole process and secure the follow-up processes, Fact Sheet II, an electronic questionnaire, is distributed to all managers of units that have had their own follow-up process. Fact Sheet II is answered by the manager and safety representative in collaboration and provides a self-evaluation of the implementation process and actions completed in the ARK Intervention Programme. All information from the processes and experiences from the unit managers and other associates is gathered to further

improve the ARK intervention program. In example, is this written evaluation and experiences an essential part in the preparation phase next time the Intervention Program is to be conducted. The ARK process is repeated at regular intervals of two or three years, and the work with the psychosocial work environment should be systematic and ongoing the entire time. For more information see The ARK Intervention Programme Who – What – How (13).

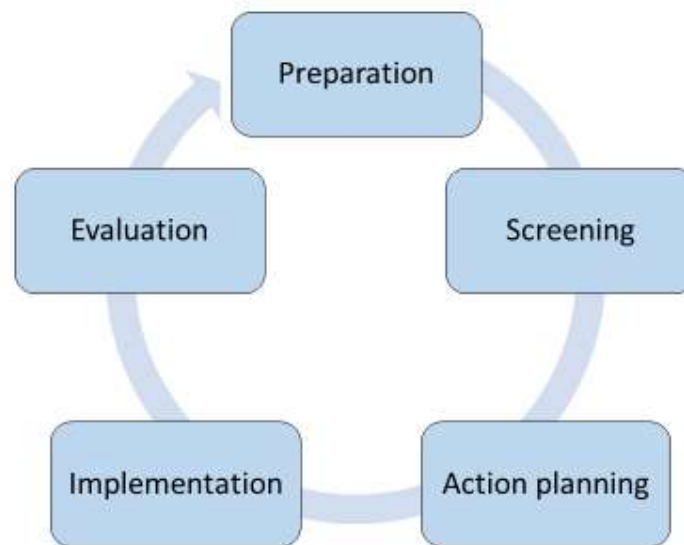


Figure 2. The five phases of an ARK process

## DISCUSSION

Despite a growing interest in the Healthy University approach, there is a lack of literature on the content of a healthy university and how to implement such an approach into best practice. The present paper responds to this need by describing the implementation of the ARK intervention program, shares experiences, and discusses the potential of ARK as a healthy university initiative. The following discussion aims to frame the ARK intervention programme in light of existing knowledge and previous suggestions on how to implement a healthy university, like the need for cultural tailoring, expected beneficial outcomes, and potentials.

In a systematic review on the implementation of a Health Promoting University, Suárez-Reyes and Van den Broucke (3) argue for the need of cultural tailoring, or adaption to local



culture. Cultural differences relate not only to different countries or institutions, but might also be found between different departments and research groups within the universities at the local level. This cultural adaption may be done both on the surface by adjusting language and using familiar images, or more deeply through the recognition of the culture and the reinforcement of values, beliefs, and behaviours. Whereas the former are assumed to improve the acceptance of the programme, the latter may influence its effectiveness (3). In the ARK intervention program, surface culture is ensured by adapting the KIWEST questionnaire to the university culture and language. Deep culture, on the other hand, is demonstrated by relaying on a bottom-up process the interpretation of the survey results and the development of actions. In general, it has been argued that the success of the implementation of a Healthy University programme is the alignment of a top-down commitment by the university authorities with a bottom-up action (Dooris, 2002 in 3, p. 54). This agrees with the experience from the ARK project. A steering group with representatives from different universities and colleges, as well as the active involvement of a reference group in the planning, implementation, and evaluation have been the success factors ensuring the adaption and commitment of the ARK intervention programme to each institution and department. The ARK intervention program offers a tool and a theoretical framework in which each university and college have adapted to their culture and needs. In ARK, the implementation of the intervention program takes different actions. Some train their own human resource representatives to arrange the feedback meetings, while others train their leaders or hire consultants to support the feedback processes. Nevertheless, the goal of the ARK program is to empower the members of the community to embrace health and a healthy work environment into their daily lives and practices. Statements like “this has given us a tool and a framework for how and the possibility to talk about our work environment” indicate it is not only what comes out of the interventions but also the processes in which the employees participate and take responsibility for their own working environment. Moreover, the positive angle and focus of resources (in contrast to what is wrong and not working) is pointed out by many to be a more safe and suitable approach to target the work environment. The evaluation on the local level is done by reviewing Fact Sheet II. This is secure continuity and a commitment to the follow-up process. Thus, the ARK intervention program is made for and by the university sector and aims to improve the health and well-being of the employees at universities and university colleges by means of a bottom-up approach. This aligns with a health promotion initiative, but does the implementation of ARK promote health?

The conceptual framework of Healthy Universities suggests that the expected outcomes or the result of an implementation programme should be demonstrated by: (I) the integration of health in the culture, structures, and processes of the university; (II) the improvement of the health of its members; and/or (III) through the improvement of service, academic performance, and improved conditions for good health (3). The ARK intervention programme touches upon these three facets. First, embedded in the Norwegian health and safety at work act, ARK is a response to the Labour Inspection Authority requirement to improve systematic work with psychosocial working environment factors at universities. The use of the JD-R model has created at universities a common awareness of health as more than the absence of illness. The positive focus on possibilities and how to enhance resources to create motivated and engaged employees has been an appreciated way of thinking about the work environment. Second, regarding whether or not ARK has improved the health of its members, it has been argued by many researchers that the effectiveness of workplace interventions cannot be assessed by looking only at final outcomes, such as only looking at health. A more feasible approach is the combination of an effect evaluation with an evaluation of the processes of which the intervention takes part (17,19-21). Introducing the RE-AIM framework to assess the public health impact of health promotion intervention Glasgow and colleagues (22) argue that dimensions such as reach, adoption, and implementation are especially crucial in evaluating programs intended for wide-scale dissemination. Currently, Factsheets I and II in the ARK intervention Programme, gives key information about the unit size, etc., and a self-evaluation of the implementation process and actions completed. However, in order to understand what works for whom in which circumstances ARK is currently developing a tool for helping leaders with the implementation process as well as assessing the process as perceived by the employees; this is inspired by the work of Randall, Nielsen, and Tvedt (23). Finally, Suárez-Reyes and Van den Broucke (3) ask for improvement of service, academic performance, and improved conditions for good health in the evaluation of the effectiveness of an intervention programme on Healthy Universities. In general, investment of human capital has proven to be beneficial for organizational outcomes. For example, recent findings from ARK suggest that perceived inclusiveness in academia is positively related to organizational commitment, work engagement, and improved work-home balance (24). Similarly, by using data from ARK, Christensen, Dyrstad, and Innstrand (6) found work engagement to be related to productivity as measured by an increase in publication points on an aggregated level. This is valuable knowledge as there is a lack of studies on productivity benefits related to psychological

aspects in the work environment. As ARK has a focus on the beneficial aspects of the psychosocial work environment and on how to preserve and improve these resources, there is reason to believe that the programme will beneficially affect academic performance in years to come. So, what are the potentials of ARK?

Exploring the potential for a national Healthy Universities programme, Dooris and Doherty (2) found that the two most highlighted perceived benefits related to such a programme would be (1) the potential for increased networking and learning from others, and (2) the provision of an accepted common base line, national standard, or standardized approach. An experience and learning conference for people involved in the implementation of the ARK intervention programme is arranged yearly. Building upon different topics related to the implementation process (see figure 2), interactive workshops and related lectures are provided for knowledge exchange and further development of ARK. The utilization of ARK outside of Norway also brings the possibility for international comparisons and knowledge exchange across countries. Moreover, with reference to creating Healthy Universities, it has been suggested that gaining a fuller understanding on what works, for whom, in which contexts, and why there is a need for more research and evaluation in order to make benchmarking data is needed (2). ARK does provide such benchmarking data by collecting all data from participating universities and university colleges in a common data bank, freely available to all researchers who want to research the psychosocial work environment at the university or to explore the implementation of health promotion interventions in academia. The ARK intervention programme is usually conducted annually and will expand the sample further and provide longitudinal data with several time lags in the future.

Is ARK compliant with the Healthy Universities objectives? The answer is yes and no. At a systematic level, ARK has managed to integrate health and the awareness of a healthy work environment within the university culture. It is carefully adopted to the culture of the university both in the development of the questionnaire and in the implementation of the interventions. The continuity of the ARK process and the integration of ARK among most of the largest universities and colleges in Norway, with knowledge exchange and learning across institutions, creates a platform for networking and a common tool for Healthy Universities with knowledge exchange and a national standard. The empowerment and training of the universities to use the ARK intervention process secures involvement, commitment, and continuity. Another objective of the Healthy University approach is the

improved health and well-being of its members. This can be easily evaluated by exploring change in important health indicators, like engagement, meaning, commitment, and health within the KIWEST questionnaire after the implementation of an action. However, changes in the university structure both at a national level (i.e., political decisions and regulations) and locally (i.e., merging processes) might affect the health and well-being of the employees as well, and is hard to control for. A better approach is to combine such measures with a process evaluation. Thus, we advise the participants to not pay too much attention to actual figures and instead use ARK as a guiding tool and a way of discussing their work environment with colleagues. Nevertheless, integrating and improving health within the university culture, as with any other culture, is a long-term process in which results cannot be immediately observed.

However, if compliance with the Healthy Universities objectives implies a whole university approach that embraces students, employees, and the wider community, ARK does not respond to this directly as it currently targets the staff. Yet, the indirect effect of a healthy and productive staff would affect the students and the wider community as well.

Nevertheless, ARK could be easily adapted to the learning environment of the students and the experience from its systematic approach would benefit the wider community, as suggested by Stanton et al., (25). We are currently collaborating on a student survey with Healthy Workplaces at UC Berkeley, with the aim to create a whole university approach for Healthy Universities. Such a psychosocial approach should also be complemented by the knowledge of how the physical environment might benefit the working, living, and learning environments at universities. Extension of such knowledge and research could contribute to the health and sustainability of the wider community, in line with the aims of a Healthy University approach (see 2 p. 96).

## **Conclusion**

Healthy Universities is an ambiguous and broad concept consisting of many aspects that need to be approached before it becomes a tangible reality. ARK offers a systematic approach on how to implement interventions in a university setting by using a bottom-up approach, empowering the university to take action and responsibility for their members' health and well-being. So far, the strength of the use of the ARK lies in the following: (a) it utilizes a theoretical model that visualizes the associations between variables and enables the

possibility to analyse and plan for actions; (b) it is sector specific; (c) it has a salutogenic perspective focusing on strengthening positive health assets and potentials; (d) it provides a systematic approach to the implementation process; (e) it is in line with health promotion initiatives as it provides a bottom-up approach; (f) it provides sector specific reference data (benchmarks); and (g) it establishes a safe and structured communication channel for the work environment and an awareness of the psychosocial work environment. Through this light ARK might serve as a pioneer and an example for good practice for other institutions that want to place the health and well-being of their employees on their agenda. It is hoped that the present study will stimulate health-promoting initiatives and encourage more research and best practices on Healthy Universities for the future.

### **Supplementary materials**

ARK webpage: <https://www.ntnu.no/ark> (most material in Norwegian, some English material)

ARK the film:

<https://www.youtube.com/watch?v=7SpNwY7gobU&index=2&list=PLUHTGp7T4Zn8yPeDpg2cba64KOPlahKzH>

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