

## Original Article

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

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**Abstract:** Underpinned by the Healthy Universities settings concept, this paper presents a holistic intervention approach, called ARK, to improve the health and well-being of academic staff. ARK (a Norwegian acronym for work environment and climate study) has been conducted in 18 universities and university colleges in Norway. The survey has collected information on employees' perceptions 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 programme. The aim of this paper is to present the ARK project and provide suggestions on how to conduct a health-promoting intervention programme in a university setting based on the experience and knowledge acquired from ARK. This understanding can inform and inspire the planning of future Health Promoting University initiatives to meet the distinctive needs of its employees.

**Keywords:** Healthy University, health promotion, intervention, psychosocial work environment

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## Introduction

The Ottawa Charter for Health Promotion suggests that health is created and lived 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 settings approach within higher education, there is a lack of any formal programme for Healthy Universities (2) or guidelines on how to implement a healthy settings approach into 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 can be promoted. The health and motivation of workers is critical for universities and colleges to deliver a high-quality service (2). Building upon the Healthy Universities settings' line of thought, the aim of the present study is to present a holistic intervention approach, called ARK, aimed at improving the health and well-being among university employees.

### *Healthy Universities*

The concept of Healthy Universities, sometimes also called Health Promoting Universities, addresses a healthy settings approach for higher education

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*(This manuscript was submitted on 29 November 2017. Following blind peer review, it was accepted for publication on 18 May 2018)*

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institutions. Although not clearly defined, Healthy Universities aim 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’ (4). This implies not only a university 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 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 of the higher education ‘market’. Other potential benefits are greater 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 their economies are vital for a sustainable knowledge-based economy (5), a health promotion approach to universities is crucial.

In 1998, the World Health Organization (WHO) published a working document for Health Promoting Universities, suggesting important concepts, experiences and frameworks for action (7). Although this document raised awareness about 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, the most common items of work targeted the health problems of young people, such as 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 as initiatives that address behaviour risk factors only is also reflected in approaches to health promotion in general (8). Dooris et al. (5) argued that a ‘pathogenic’ perspective and a

focus on health problems facing universities needs to be complemented by a more salutogenic perspective and research that focuses on strengthening positive health assets and potential. Elimination of the risk of illness and infirmity does not automatically ensure motivation. There is growing consensus 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 the investigation and implementation of interventions addressing 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 in order to make 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 promotes knowledge exchange and learning across universities and university colleges, and that by collecting data and storing these in a common database 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 Programme, with survey responses from over 15,000 participants, and even more people participating in the intervention programme. Figures

from 2015 indicate that the sample was equally distributed across gender with 54% women and 46% men, and that age was distributed as follows: under 30 years, 9.8%; 30–39, 23.2%; 40–49, 27.2%; 50–59, 24.3%; and 60 years or older, 15.5%. About 38% had an academic position, 12% were doctoral research fellows, 45% were technical/administrative staff and 5% had a position as a leader. The ARK Intervention Programme and its corresponding KIWEST (Knowledge Intensive Work Environment Survey Target) questionnaire were translated and adapted to Swedish and implemented as a pilot study at a university college in Sweden in autumn 2017. The KIWEST questionnaire was also translated into English and Dutch.

### *Development of ARK*

A work group, a steering group and a reference group with representatives from human resource management, scientific employees, organizational psychologists and practitioners, were created to develop a tool for systematic mapping of the psychosocial conditions that would: (a) cover the most important psychosocial working environment factors; (b) generate the basis for working environment interventions; (c) be adapted to the special characteristics of the university sector; and (d) satisfy the statutory requirement for systematic and documented Health, Environmental and Safety (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 determined 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 ( $n = 70$ ), and then on a whole university ( $n = 5600$ ). The final Intervention Programme was launched for the university sector's use in 2013 and consisted of: (a) the KIWEST questionnaire; (b) Fact Sheets I and II, giving key information about the unit size, etc., and a self-evaluation of the implementation process and actions completed; (c) structured guidelines for follow-up results from KIWEST and about how to conduct feedback meetings; and (d) the ARK Research Platform, a database for storing data from completed surveys.

The theoretical underpinning of ARK is the JD-R model (9–11), (see Figure 1). In short, 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-demanding work environments, work motivation increases and well-being improves (14,15). Thus, the ARK Intervention Programme focuses on both stresses and resources in the work environment and arranges for a participatory approach in which the employees discuss the pros and cons of their work environment and develop actions for what they would keep and improve based on the screening using the KIWEST questionnaire. More specifically, the implementation of the ARK Intervention Programme is divided into five phases as seen in Figure 2, which is inspired by the work of Nielsen et al. (16).

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

#### *Phase I*

The initial phase aims to prepare the organization for the implementation of ARK and the adaptation of its processes to the pertinent needs and issues of the individual organization. Risk assessment, distribution of responsibility and a collaborative progress plan are created. As suggested by many studies and as experienced during 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 promotional video of the ARK Intervention Programme made by faculty management in one of the universities was sent to all employees by email, which increased the response rate significantly. As part of the preparation, Fact Sheet I is sent to all unit managers and filled in by the manager in co-operation with a safety representative.

#### *Phase II*

The KIWEST measure plays an essential part in the screening phase and is specially adapted to the job demands and resources of academics. The psychometric properties of the measure have proved to be valid and reliable (18). A set of standard analyses (e.g. average scores) is calculated for each defined organizational unit (e.g. faculty, department,

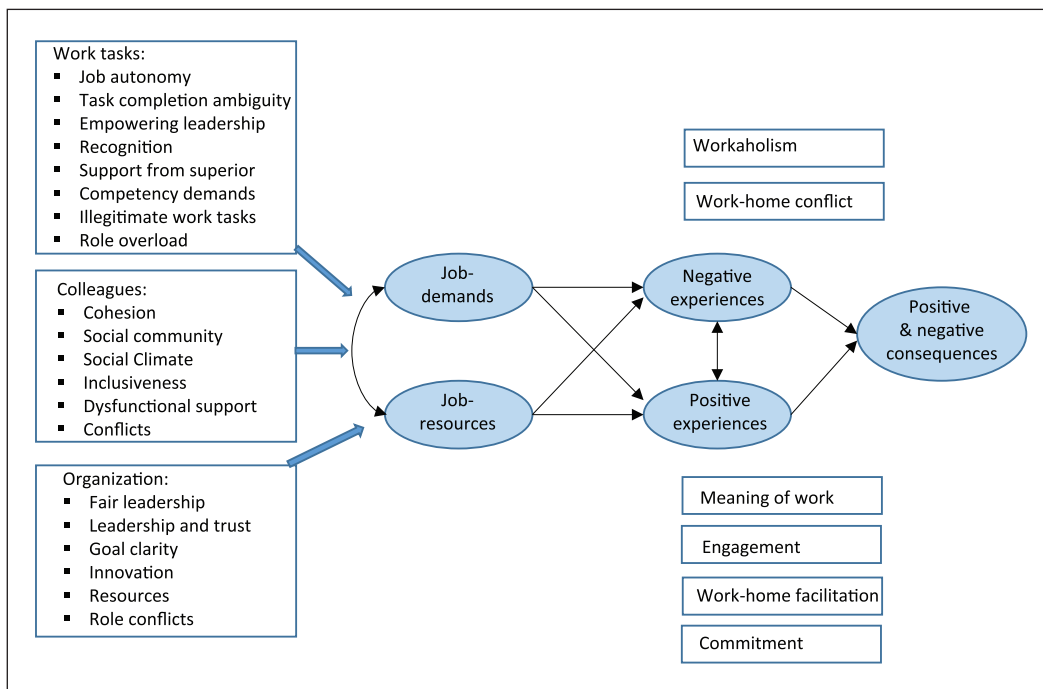


Figure 1. KIWEST and the JD-R model (13 p. 8).

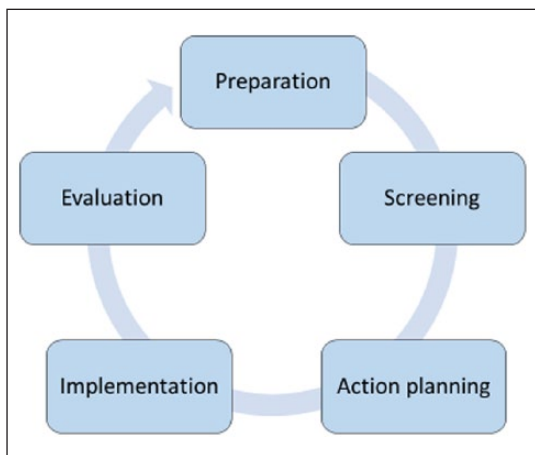


Figure 2. The five phases of an ARK process.

section) by representatives at ARK and given in a report to each unit. Figures from this report are 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 externally trained facilitator. This varies between units and across different universities, but needs to be determined 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 and made freely available for research. This research and these findings provide feedback 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,

they are asked to develop appropriate interventions. Initial experience indicates that these actions most often are concerned with improving information and communication systems, organization of work/work tasks and meetings, career development and skill enhancement, or fostering 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. 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 the ARK Intervention Programme should be transferred from the process facilitator to the unit's management, if the process facilitator running the feedback meeting was someone other than the unit manager.

#### *Phase V*

Finally, to evaluate the whole process and complete the follow-up processes, Fact Sheet II, an electronic questionnaire, is distributed to all unit managers. Fact Sheet II is answered by the manager in collaboration with the safety representative, and involves a self-evaluation of the implementation process and actions completed in the ARK Intervention Programme. All information from the processes and experiences of the unit managers and other associates is gathered to further improve the ARK Intervention Programme. The written evaluation and the experiences are an essential part of the preparation phase the next time the Intervention Programme is to be conducted. The ARK process is repeated at regular intervals of two or three years, and the work on the psychosocial work environment should be systematic and continuous. For more information, see *The ARK Intervention Programme: Who – What – How* (13).

## **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 practice. The present paper responds to this need by describing the implementation of the

ARK Intervention Programme, sharing experiences and discussing 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, such as the need for cultural tailoring, expected beneficial outcomes and potential.

In a systematic review on the implementation of a Health Promoting University, Suárez-Reyes and Van den Broucke (3) argued for the need for cultural tailoring or adaptation 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 universities at the local level. This cultural adaptation may be applied both superficially by adjusting language and using familiar images, and more profoundly 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). On one hand, in the ARK Intervention Programme, superficial cultural adaptations are ensured by tailoring the KIWEST questionnaire to the university culture and language. Profound cultural adaptations, on the other hand, are achieved by relying on the bottom-up process of 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 result of the alignment of a top-down commitment by the university authorities with bottom-up action (3). This is consistent 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 planning, implementation and evaluation have been the factors ensuring the successful adaptation of and commitment to the ARK Intervention Programme in each institution and department. The ARK Intervention Programme offers a tool and a theoretical framework which each university and college adapted to their culture and needs. In ARK, the implementation of the intervention programme requires 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 programme is to empower the members of the community to embrace health and a healthy work environment in their daily lives and practices. Statements such as ‘this has given us a tool and framework affording us the opportunity to talk about our work environment and guiding us in how to do so’ indicate it is not only what comes out of the intervention but also the processes in which the employees participate and take responsibility for their own working environment that are important. Moreover, the positive approach and focus of resources (as opposed to what is wrong and not working) is pointed out by many to be a more suitable approach to target the work environment. The evaluation at the local level is done by reviewing Fact Sheet II. This ensures continuity and a commitment to the follow-up process. Thus, the ARK Intervention Programme is made for and by the university sector and aims to improve the health and well-being of the employees of universities and university colleges by means of a bottom-up approach. This aligns with the concept of 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: (a) the integration of health in the culture, structures and processes of the university; (b) the improvement of the health of its members; and/or (c) the improvement of service, academic performance and 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 address psychosocial work environment factors through systematic interventions. The use of the JD-R model has created a common awareness of health within universities 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 a way of thinking about the work environment appreciated by universities. Secondly, 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 health. A more feasible approach is the combination

of an effect evaluation, with an evaluation of the processes of the intervention (17, 19–21). By using the RE-AIM framework to assess the public health impact of health promotion interventions, Glasgow *et al.* (22) argued that dimensions such as reach, adoption and implementation are especially crucial in evaluating programmes intended for wide-scale dissemination. Currently, Fact sheets I and II in the ARK Intervention Programme give key information about the unit size, etc., and a self-evaluation of the implementation process and actions completed. However, 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 *et al.* (23). Finally, Suárez-Reyes and Van den Broucke (3) assess improvement of services, academic performance and conditions for good health in the evaluation of the effectiveness of an intervention programme pertaining to 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–life balance (24). Similarly, by using data from ARK, Christensen *et al.* (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 is the potential of ARK?

Exploring the potential for a national Healthy University programme, Dooris and Doherty (2) found that the two most frequently highlighted perceived benefits related to such a programme would be (a) the potential for increased networking and learning from others, and (b) the provision of an accepted common baseline, a national standard or standardized approach. A conference for people involved in the implementation of the ARK Intervention Programme is arranged annually.



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 use of ARK outside of Norway also allows the possibility for international comparisons and knowledge exchange across countries. Moreover, in reference to creating Healthy Universities, it has been suggested that gaining a better understanding of what works, for whom and in which contexts, is required, and more research and evaluation to create benchmarking data are needed (2). ARK does provide such benchmarking data by collecting all data from participating universities and university colleges in a common database, freely available to all researchers who want to research the psychosocial work environment in universities or explore the implementation of health promotion interventions in academia. The ARK Intervention Programme is usually conducted annually and will be scaled up and provide longitudinal data in the future.

Is ARK compliant with the Healthy University objectives? The answer is yes and no. At a systemic level, ARK has managed to integrate health and the awareness of a healthy work environment within the university culture. It is carefully adapted 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 within 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 and a national standard for Healthy Universities. The empowerment and training of the universities to use the ARK Intervention Programme promotes 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 indicators, such as 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 (e.g. political decisions and regulations) and locally (e.g. merging processes) might affect the health and well-being of the employees as well, and are hard to control for. A better approach is to combine such measures with a

process evaluation. Thus, we advise the participants not to 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. 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 University objectives implies a whole university approach that involves students, employees and the wider community, ARK does not respond to this criterion 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 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 of creating a whole university approach for Healthy Universities. Such a psychosocial approach should also be complemented by knowledge of how the physical environment might benefit the working, living and learning environments at universities. The 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 (2).

## Conclusion

Healthy Universities is an ambiguous and broad concept consisting of many aspects that need to be addressed 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 strategy, empowering the university to take action and take responsibility for its members' health and well-being. So far, the strength of the use of ARK lies in the following: (a) it utilizes a theoretical model that illustrates 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 potential; (d) it provides a systematic approach to the implementation process; (e) it is in line with health promotion initiatives as it uses a bottom-up

approach; (f) it provides sector-specific reference data (benchmarks); and (g) it establishes a safe and structured communication channel in the work environment and an awareness of the psychosocial work environment. With these strengths ARK might serve a pioneering example of 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 practices related to Healthy Universities for the future.

#### *Conflict of interest*

The authors declare that there is no conflict of interest.

#### *Funding*

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

#### *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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