SeAMK

SEINÄJOEN AMMATTIKORKEAKOULU
SEINÄJOKI UNIVERSITY OF APPLIED SCIENCES

Tämä on alkuperäisen artikkelin rinnakkaistallenne (kustantajan versio).

Viite:
Valkosalo, S., Hoffrén-Mikkola, M. & Johannsen, L. 2020. BaltCityPrevention - promoting health, technology and participation. Teoksessa: S. Päällysaho, P. Junell, J. Latvanen, S. Saarikoski & S. Uusimäki (toim.) Seinäjoen ammattikorkeakoulu 2020: Osaamista strategian vahvuusaloilla. Seinäjoki: Seinäjoen ammattikorkeakoulu. Seinäjoen ammattikorkeakoulun julkaisusarja A. Tutkimuksia 33, 508 - 517.

BALTCITYPREVENTION - PROMOTING HEALTH, TECHNOLOGY AND PARTICIPATION

Sanna Valkosalo, MA, Project Manager
SeAMK School of Health Care and Social Work

Merja Hoffrén-Mikkola, Ph.D., Principal Lecturer
SeAMK School of Health Care and Social Work

Levke Johannsen, MA, Research Associate
Flensburg University of Applied Sciences, Institute for eHealth and Management in Healthcare

1 INTRODUCTION

In the BaltCityPrevention project, introduced briefly in Table 1 below, the Baltic cities and regions have committed to face the common challenge and tackle the lifestyle related diseases. A problem is that the current prevention measures are often not tailored to suit the users' needs. Therefore, the BaltCityPrevention project (from now on BCP-project) had two main goals; firstly, to develop and test user-oriented methods and applications and to implement prevention and health promotion interventions. Secondly, to have a participatory approach when planning for interventions, new methods and applications. To achieve these goals, the BCP-project created a new intervention model (from now on IM) for public health authorities to support the planning, implementation, and evaluation of prevention and health promotion interventions. This model represents the cutting edge in the utilization of digital solutions (e.g. mobile applications) as part of health promotion activities and the strong involvement of the target and user groups in the planning of interventions.

Table 1. BaltCityPrevention (BCP) -project in a nutshell.

BaltCityPrevention	Baltic cities tackle lifestyle related diseases
Programme	Interreg Baltic Sea Region Programme 2014-2020
Fund	European Regional Development Fund
Partners	14 partners from 6 Baltic Sea region countries
Lead partner	Flensburg University of Applied Sciences
Budget	About 2.7 million EUR
Duration	From 1 Oct 2017 to 30 Sept 2020
More information	www.baltcityprevention.eu www.betterprevention.eu

The key elements of this new IM are the participation of the users and the co-creation process that involves users, public health authorities (PHAs) and small and medium-sized enterprises (SMEs). The BetterPrevention Networking platform ([ref. 21.8.2020]) was created to disseminate the results, to establish the intervention model and to help the PHAs to use and apply the IM in their everyday work. This article introduces these key elements of the project.

As the main goal on the project level was to develop the interventions and health promotion, the target group of the project were public health authorities (PHAs). They are responsible for initiating and implementing health promotion programs in the cities or in the municipalities in their area of responsibility. At the starting phase of the project, the project partners interviewed several PHAs in the Baltic Sea region and it was discovered that PHAs have sufficient expertise on the health behavior of people, but they often lack experience in using and applying new technologies and user-oriented approaches.

For this reason, the aim for the BCP-project was also to initiate smoother cooperation and interaction between PHAs and small and medium-sized enterprises (SMEs). The potential cooperation partners for the PHAs could be e.g. small start-up companies that are involved in the development of new technologies. The BCP-project developed and launched two new methods to facilitate active cooperation between PHAs and SMEs: firstly, the Business Catalogue *eHealth SMEs for partnership* [ref. 28.8.2020], was created to present the potential partner SMEs and secondly several matchmaking events in the Baltic Sea region were organized during the project lifetime (3 years). The aim of the developed Business Catalogue and the matchmaking scheme (that institutionalizes the matchmaking

events) was to strengthen the collaboration between PHAs and SMEs so through these methods the aims for the project were met.

2 BCP LIFESTYLE INTERVENTION MODEL

Lifestyle related chronic diseases (also called as noncommunicable diseases) are a major public health challenge worldwide. 71 % of all deaths are attributable to these diseases. The amount has increased 10 % in 10 years. Therefore, disease prevention and health promotion measures are needed to counteract this burden. Modifiable health behaviors, such as tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol, all increase the risk of chronic diseases. (World Health Organization 2018.)

Lifestyle intervention is a specific set of activities developed with an intent of producing health behavior change for a person or a group of individuals. This is the user group of intervention. In many cases, lifestyle intervention methods are not tailored individually or based on user group, but rather similar traditional methods are applied for everyone. Therefore, in some cases, the cost-effect relationship may remain poor and not sustainable, long term, changes in health behavior are achieved. There are some promising results however, regarding intervention outcomes when intervention methods are tailored personally (Eaton et al. 2016). The idea in BCP project was to include user group extensively to intervention planning and facilitate methods that allow their inclusion. The idea was that customizing the interventions better would overcome the barriers to change, improve the outcomes of change and increase the efficiency for change. That may lead to more sustainable changes in health behavior.

BCP project developed an innovative lifestyle intervention model (Intervention model for health behaviour change 2019) (thereafter called BCP lifestyle intervention model) to support public health authorities (PHAs) in prevention of lifestyle related chronic diseases. It should serve as a tool to build capacity for future developments of lifestyle interventions. PHAs are professionals that can affect other people's health behaviors and carry out lifestyle interventions. Depending on country of living, organizational structure, user group and intervention topic, PHAs are health professionals (e.g. in municipalities), public health nurses (e.g. in schools), physiotherapists, psychologists and teachers. BCP lifestyle intervention model is built upon existing frameworks on lifestyle interventions, but it combines different methodologies and tools in an innovative way. The idea was to build an easy to use model for PHAs. The model is developed both for individual and group level interventions. During BCP project, PHAs tested the BCP lifestyle in-

tervention model with one user group: children and adolescents. However, the intervention model is built so that it can be applied to other user groups (e.g. elderly or families) as well.

2.1 Innovative components

Innovative components in BCP lifestyle intervention model as compared to other existing intervention models are 1) participatory and user-oriented approach, 2) co-creation process during intervention development and 3) new technologies (e-tools) for increasing intrinsic user motivation. The intervention model is designed as a detailed guide for planning and implementing lifestyle interventions. It includes toolboxes (Toolbox, [ref. 21.8.2020]) that help intervention planning and implementation as well as a checklist and an online course (Learn how to customize lifestyle interventions, [ref. 21.8.2020]) to support PHAs in their work.

Participatory and user-oriented approach means that the needs and preferences of the user group are considered during intervention planning. PHA should know his/her user group thoroughly. BCP lifestyle intervention model includes a toolbox to help with assessment of user needs (Toolbox, [ref. 21.8.2020]). Things to consider when planning the lifestyle intervention are as follows:

- What are the problems and needs of the user group?
- How does the user group address the problem?
- How the problem needs to be framed in order to be relevant for the user group?
- Is the user group motivated to engage activities of the intervention?

Co-creation process during intervention development means that the user group should be included in all stages of intervention development (planning phase). This includes the selection of intervention methods, planning the intervention details such as intervention time and duration as well as piloting, evaluating the pilot and modifying the methods and intervention details based on it. All these stages are part of intervention planning phase and user group's opinions and views on them are relevant and increase the effectiveness of the intervention.

BCP lifestyle intervention model considers new technologies (eTools, Apps) as lifestyle intervention methods, supports redevelopment of existing eTools to match the needs of the user group and the creation of new eTools via co-creation process between PHAs, SMEs and user groups. Toolbox was created to support the creation of new eTools (Toolbox, [ref. 21.8.2020]).

2.2 Overview

Figure 1 shows the overview of the BCP lifestyle intervention model (Intervention model for health behaviour change 2019).

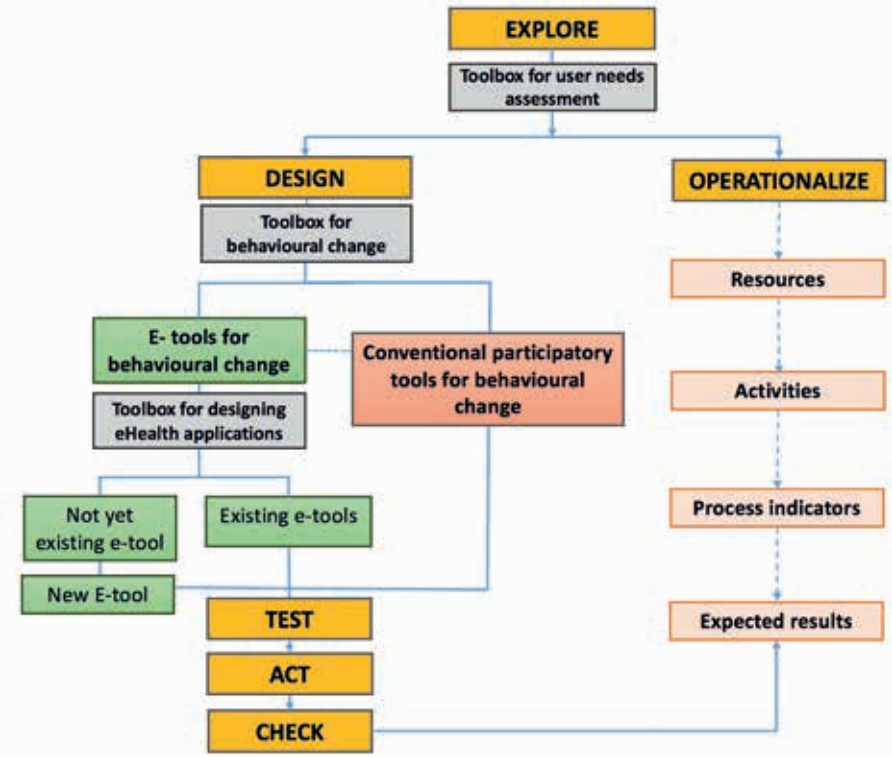

Figure 1. Overview of the BCP lifestyle intervention model (Intervention model for health behaviour change 2019).

The intervention development begins with intervention planning phase and in the first stage by starting to explore the situation and identifying the problem of the user group. There are different methods that can be used during this process and these are gathered into the *User needs assessment -toolbox* (Toolbox, [ref. 21.8.2020]). As mentioned, intervention is a specific set of activities developed with the intent of producing health behaviour change. During *design* stage of the intervention planning phase one must select the most effective methods to accomplish health behavior change. Methods need to be evidence-based as well as appropriate for a user group and context. Methods may include e.g. training sessions, provision of preventive services, youth advocacy events etc. as well as eTools to increase user motivation. *Toolbox for behaviour change* can be used when selecting effective methods and *Toolbox for designing eHealth applications*

help when designing new eTools (Toolbox, [ref. 21.8.2020]). (Intervention model for health behaviour change 2019.)

To ensure that the intervention operates well into practice, the development of a logic model is necessary. During this process intervention resources (inputs), activities, and process indicators (outputs) are aligned with planned results (outcomes). This is done during the *operationalize* stage of the intervention planning. Testing (also called as piloting) the intervention with planned activities is crucial before starting the *acting* phase when the implementation of the whole intervention by including all participants of the user group is carried out. Each intervention must be completed with the *checking* phase when the achieved results are carefully evaluated by using well-planned methods and finally disseminated to both stakeholders and the user group of the intervention. (Intervention model for health behaviour change 2019.)

2.3 Piloting and case example

In a 16-month pilot phase, six PHAs from Finland, Germany, Poland, Estonia, Latvia and Lithuania tested and evaluated the developed BCP lifestyle intervention model. Each country and each PHA addressed a different intervention topic (physical activity, mental health problems, obesity, smoking, substance abuse). This approach made it possible to create a greater overview of possible intervention ideas and facilitate learning. As mentioned before, it was decided to select children and adolescents as the user group for the pilot phase in each country. However, the intervention model was designed in such a way that it can be applied to any user group. Throughout the pilot process, the intervention model was discussed and adapted repeatedly.

The Finnish project group including Seinäjoki Social and Primary Health Care Centre in cooperation with Seinäjoki University of Applied Sciences (SeAMK) planned and implemented a pilot project to promote quitting the use of tobacco products among 16 - 17 years old adolescents (user group). This work was carried out in one vocational school in Seinäjoki and the needs and preferences of the vocational school students were determined using the focus group interview method. The analysis of the user group interviews gave the idea for creating a new eTool (mobileApp) to support those, who want to quit and/or reduce the use of tobacco products. Students who were motivated to stop smoking and/or using snus visited the school health nurse (SHN). In the individual appointments, the SHN discussed with the students by using motivational interview method. When needed, the students were tested with the breath carbon monoxide monitor and got nicotine replacement therapy (chewing gum or tablets) if they were

addicted to nicotine. The Finnish project group and the SME Valakia Interactive planned together the content for the new mobile application EiNi and the SME constructed a prototype. The prototype was further developed together with the user group in a workshop. The EiNi application was presented on the mobile application stores (Android, iOS) in December 2019. Students tested the app for a couple of weeks. After that, the usability and the user experiences of the app were discussed in a new workshop. The app was updated, and the new features were added based on the students' feedback. During the piloting period, 10 students quit using tobacco products with the support of the school health nurse.

2.4 Dissemination and establishment

An online course (Learn how to customize lifestyle interventions, [ref. 21.8.2020]) was created to help PHAs to learn and adopt the BCP lifestyle intervention model in a short time. This is important because PHAs very often have limited time to adopt new methods and plan interventions. Online course and three toolboxes that are parts of intervention model as well as the checklist to help intervention planning can all be accessed through created BetterPrevention Networking platform ([ref. 21.8.2020]). Networking platform was created to share stories of best practices and learning points related to health promotion and disease prevention and to connect between PHAs from all over the Baltic Sea. In order to disseminate the results of the conducted pilots and facilitate learning, manual for PHAs was conducted in English, and then translated into all six languages of project partners. However, these manuals are not published yet when writing this article. These manuals are later stored to BetterPrevention Networking platform.

3 PHA AND SME COLLABORATION

3.1 Business Catalogue

The BCP project aims at bringing the health IT SMEs and PHAs together. It is important to strengthen the collaboration between SMEs and PHAs, since the PHAs need latest innovations and technology to support their work and SMEs need the expertise to meet the needs of their partners and customers.

According to a survey conducted in the BCP-project (GoA 4.2., [ref. 28.8.2020]) more than half (53 %) of the SMEs operating in the eHealth was interested in finding suitable partners and contacts from the PHAs. The survey reviewed how eHealth SMEs operating in Baltic Sea region countries viewed the cooperation with the PHAs. Altogether 37 SMEs answered (eight from Finland, five from Estonia, six from Latvia, eight from Lithuania, one from Poland, five from Germany and four

from Denmark). According to the results, most of the SMEs (54 %) had already cooperation with PHAs. From those SMEs who did not yet have cooperation, even 88 % was interested in doing cooperation in the future. Therefore, there is an obvious need for contacts. (GoA 4.2., [ref. 28.8.2020].) For this reason, a catalogue with health IT SMEs was provided (eHealth SMEs for partnership, [ref. 28.8.2020]). This catalogue is developed to map competencies and products of health IT SMEs in the Baltic Sea Region. The clusters operating especially in the eHealth sector are also welcomed to join. The catalogue was updated throughout the project lifetime and is accessible for all SMEs operating in this line of business.

3.2 Matchmakings

The main aim of the matchmakings was to facilitate the cooperation between PHAs and potential partner SMEs. Several matchmaking events were organized during the project lifetime and different methods for organizing the events were tested. The original idea was to organize the matchmaking events e.g. in the BarCamp format, which enables and supports open knowledge exchange. The main idea was to use such formats and methods that support free exchange of knowledge and interaction. However, these formats seemed also to set challenges for the project team, as e.g. the BarCamp format is not so widely known everywhere. According to the BarCamp principles, the events are open to everyone and they have neither a set agenda nor rules. The idea is that all the participants participate equally; there are no spectators but only active participants in the BarCamp events. (Dennerlain et al. 2015.)

The BarCamp format supports interaction and free exchange of ideas that both form a good base for the fruitful cooperation and co-design. However, it is also quite challenging for the transnational project to attract participants for the international event, if the agendas are quite loose and open. The matchmaking events were decided to hold as side events of the regular project meetings. This arrangement, though convenient, easy and practical for the organizers, also set its challenges since there are still big differences concerning English skills and abilities to network. That is why all the different formats such as BarCamp, Hackathon, etc. were tested and used in slightly moderated way.

The cities and regions for the project meetings were unfortunately often not the places with many suitable SMEs and start-ups. As the SMEs and start-ups are often just starting their operations, they have limited resources of both time and finances, so it is not possible for them to travel to or participate in these events, even though the need for finding contacts and customers was seen as highly important in the conducted survey. (GoA 4.2., [ref. 28.8.2020].) In that respect, the COVID-19 crisis also had some positive impacts on the BCP-project, Due to

COVID-19 crisis the project team was forced to test new approaches, as the live events had to be cancelled. The first webinar instead of the project meeting and matchmaking was organized in spring 2020. Since the actual meeting was supposed to be in Tallinn, the Estonian project partners took the main responsibility for organizing the webinar. The webinar attracted more participants than live matchmakings, so this method turned out to be quite successful. This experience showed that the webinars are good solutions for developing and improving transnational networking.

4 CONCLUSIONS

Children and adolescents (user group) were asked to evaluate the methods used during BCP project pilots. Methods included both traditional ones e.g. focus group, world café and a quiz as well as eTools and methods used when planning them. Regarding the project objective of including participation of the user group in the intervention development, the results are very positive since user group stated that the participatory approach was implemented well in all pilot projects. Children and adolescents rated traditional intervention methods from "average" to "very good" in all asked criteria that were 1) increase of knowledge, 2) participation opportunities, 3) method, 4) mediation, 5) group harmony and 6) suitability). Regarding eTools, methods such as motivational interviewing, design thinking and SCAMPER were used to generate the app ideas. User group rated these methods from "good" to "very good". Therefore, it is worth using these methods also in future interventions. PHAs were asked to evaluate the developed BCP lifestyle intervention model. PHAs stated that the intervention model was logically and scientifically sound and it provided good guidance for planning an intervention. Nevertheless, the PHAs felt that they need support when implementing it to their work. The tested methods and tools were mostly rated "good" by the PHAs, and they recommend the reuse of the methods and tools.

The one aim for the BCP project was to facilitate and smoothen the cooperation between PHAs and SMEs. This challenge was faced by creating the Business Catalogue and by organizing matchmaking events that allowed interaction and finding contacts. It was a good solution to test different formats with the matchmaking events. For example, in Liepaja (Latvia) the BCP-project organized a Hackathon sprint that lasted 24 hours. In the Hackathon sprint, the project teams first introduced few problems and then the teams (students, start-ups etc.) had 24 hours' time to develop solutions to these problems. This Hackathon sprint led to the development of the AmberFit solution, as the Latvian project partners saw the potential in one presented solution and wanted to cooperate and develop the

solution further together with the start-up. This kind of success stories show that there is a huge potential in this kind of matchmaking events.

The BCP-project team was forced to test also webinar-format due to COVID-19 crisis. As already stated before, it was easier to attract participants to the webinar than to regular matchmaking events. The webinar was successful, yet the matchmaking as such (with more informal and interactive format) could not be arranged. However, one must also consider that in spring 2020, many areas had very strict restrictions and people were at home under the so-called lockdown, so as the all other events were cancelled, people had a lot of time to participate in the webinars. Yet, it is obvious that webinars have huge potential, and new ways of organizing virtual matchmakings should be explored further as well. At the end of the BCP-project the project team developed a virtual matchmaking tool together with an Estonian SME. This tool was introduced and tested during the BCP-project's final conference webinar in August 2020, and it serves this purpose after the project has ended, as virtual matchmaking is a solution much needed in the future.

BIBLIOGRAPHY

BetterPrevention Networking Platform. [Undated]. [Website]. BaltCityPrevention Project. [Ref. 21.8.2020]. Available at: https://betterprevention.eu/index.html

GoA 4.2. Needs and requirement analysis of SMEs: Evaluation of the results. [Undated]. [Online publication]. Project BaltCityPrevention WP4. [Ref.28.8.2020]. Available at: https://baltcityprevention.eu/fileadmin/user_upload/PDF-Dateien/WP4_GoA_4.2_Needs_and_requirement_analysis_of_SMEs_FINAL_120919.pdf

Dennerlein, S., Gutounig, R., Kaiser, R., Barreiros, R. & Rauter, R. 2015. Knowledge strategies in organisations: a case for the Barcamp Format. Conference paper. doi:10.13140/RG.2.1.4145.5846.

Eaton, C. B., Hartman, S. J., Perzanowski, E., Pan, G., Roberts, M. B., Risica, P. M., Gans, K. M., Jakicic, J. M. & Marcus, B. H. 2016. A randomized clinical trial of a tailored lifestyle intervention for obese, sedentary, primary care patients. Annals of family medicine 14 (4), 311 - 319. doi:10.1370/afm.1952.

eHealth SMEs for partnership. [Undated]. [Online publication]. BaltCityPrevention. [Ref. 28.8.2020]. Available at: https://baltcityprevention.eu/fileadmin/user_upload/PDF-Dateien/BaltCityPrevention_Business_Catalogue.pdf

Intervention model for health behaviour change. 2019. [Online publication]. BalticCityPrevention. BetterPrevention 7.1.2019. [Ref. 21.8.2020]. Available at: https://betterprevention.eu/fileadmin/user_upload/PDFs/2019_10_Betterprevention_FINAL.pdf

Learn how to customize lifestyle interventions! [Undated]. [Website]. BetterPrevention Networking Platform. [Ref. 21.8.2020]. Available at: https://h5p.betterprevention.eu/

Toolbox. [Undated]. [Website]. BetterPrevention Networking Platform. [Ref. 21.8.2020]. Available at: https://betterprevention.eu/toolbox.html

World Health Organization. 1.6.2018. Noncommunicable diseases. [Website]. [Ref. 21.8.2020]. Available at: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases