PLANNING, IMPLEMENTATION AND EVALUATION OF A REMOTE BETTER LIFE -WELLNESS PROGRAMME FOR OFFICE WORKERS

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ABSTRACT

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People in the modern world are facing multiple challenges in their lifestyle-choices. In addition to personal costs, poor wellbeing can also increase the expenses on workplaces. In the world of smartphones, people seek help from phone applications (Apps). Several of wellness-apps are marketed to promote health and behavior change. However, only minor part of them are based on evidence and behavior change theory. Also, many of the apps are designed for specific targets (PA, nutrition, smoking etc.), but research on holistic programmes have not been reported. The aim of this study was planning, implementation and evaluation of a holistic, remote Better Life -wellness programme. The aim of the programme is to develop sustainable health habits. This research is a feasibility and acceptability study: How did the participants and the coach experience the programme and if there were perceived health benefits. Also, the habit formation was investigated. The intervention model behind the app and the programme is based on Hintsa´s model of wellbeing - Circle of Better Life. It is a hybrid coaching system including phone app and meetings with the coach. The Better Life application (BLA) provides educational information and ways to follow one´s own progress. Meetings with the coach focus on personalized recommendations based on personal needs. The programme lasts 7 months with 7 meetings with the coach. The programme involves seven aspects of wellbeing: core, physical activity, nutrition, sleep & recovery, biomechanics, mental energy and general health. Eight office-workers took part on the programme. The programme was evaluated by the Acceptability questionnaire. Habit formation was studied with the Self-Report Habit -Index. Participants filled out two questionnaires, which measured their subjective feeling of seven aspect of wellbeing. After the programme, they were interviewed to gain deeper understanding on their perceptions of the programme. Quantitative analysis was done using paired sample t-tests. Qualitative data was analyzed through content analysis. Quantitative results revealed good acceptability of the programme. Habits were formed in most areas of the programme after 12 weeks from the beginning of the programme. The Better Life Score indicated that the participants perceived, that their wellbeing increased during the programme. Significant increase was also found in six out of seven topics of the Better Life -survey. The qualitative analysis supported these findings. The programme was perceived to be great driver for change and long and merciful enough to make sustainable changes. The programme increased participants self-awareness and helped to plan their lives to make health supporting decisions. All of the participants would have recommended the programme for their friends. The coach´s role in the programme can be seen important but multiple roles of the coach is something that needs to take into consideration when interpreting the results. The present results suggest that a holistic better life -programme may be a good intervention-mechanism to form healthy habits and sustainable behavior changes, is well accepted and feasible, and ready for full-scale RCT-research for studies on long-term effects.

Key words: Habit, Self-Report Habit -Index, wellness, coaching, app

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ABBREVIATIONS

APP	Mobile application
BCT	Behavior Change Technique
BLA	Better Life -Application
PA	Physical Activity
SRHI	Self-Report Habit -Index
WHO	World Health Organization

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1 INTRODUCTION

In the modern world, people are facing multiple challenges when taking care of their health. It is easy to eat unhealthy food, be inactive and enjoy the world of internet. People are well aware of the official guidelines for exercising or eating healthy. But still only 25% of people from western society lives according to these recommendations (Fuchs 2011). Marcus et. al (2000) have shown that despite the intention, people who start to exercise, drop out within six months on the average. Habit has been defined to be unconscious act excluding the need of intention and thus, have gained a lot of interest in the area of behavior change (Gardner et al. 2019). In workplaces, the costs of people who are not able to work because of sickness are significant (Rissanen 2014). Costs of poor wellbeing can cost even more (Johns 2010). Consequently, behavior change interventions focused at workplaces are worth of studying.

In the western world, almost everyone has smart phones and an access to internet (Internet world stats 2019). People are also seeking help from Phone-applications (apps) to change their behavior making the apps an easy and cost-effective way for delivering interventions (Rubanovich et al 2017). There is a lot of research on physical activity-, nutrition-, smoking-, alcohol reduction- or mental health -interventions but not much research on more holistic mobile-based programmes and only minor percentage of them is based on any theoretical background or use Behavior Change Techniques (BCT) (de Korte et al. 2018).

In this research the aim was to plan, implement and evaluate seven-month remote behavior change intervention programme for office workers. The programme consists of an app including audio lessons to follow the programme with the addition of monthly video-meetings with a coach. The purpose was to study the feasibility and acceptability of the programme: how are the participants and the coach experiencing the programme and are there perceived effects of the programme. Also, the habit formation during the programme was followed. It was a mixed method -study and questionnaires, interviews and researcher´s journal were used to collect data.

2 WHAT IS A HABIT?

2.1 Definition

Gardner et al. (2012) define habit as context-dependent behavioral patterns. A habit is something one repeats so many times that in the end one does not purposefully think when conducting a habitual behavior (Nilsen et al. 2012; 2008). Van t'Riet et al. (2011) adds that behavior needs to be rewarding before it comes a habit. Verplanken & Wood (2006) and Wood & Neal (2009) state that a habit is automatic behavior. It involves repetitions in stable circumstances and cues that lead to automatic behavior. Habit can also be seen as a tendency towards behavior (Quellette & Wood 1998). Gardner (2015) in a review article studied 136 empirical studies and 8 literary reviews and states that habits are either a type of behavior or automaticity or can be thought as tendency of a behavior.

It is also declared that intention, pursuing goals or even motivational factors can be excluded from habitual behavior (Gardner et al. 2019; Wood & Neal 2009). It means that one does not need the intention or motivation to pursue a behavior but conducts it without thinking. After one has reached to a habit-stage with a certain behavior, it also releases energy for multitasking. One can perform a habit and do another behavior at the same time because the cognitive effort used to habitual behavior is decreased (Quellette & Wood 1998; Lally et al. 2010).

In this research a habit is defined to be an automated behavior which happen largely without thinking the behavior.

2.2 How habits are formed

> *"To form a habit, a behaviour must be carried out repeatedly in the presence of the same contextual cues" (Lally et al., 2010)*

Lally & Gardner (2013) states that habit formation requires four steps:

- Decision to take action (intention)
- Intention into an action
- Repetition of behavior
- Repetition in a fashion conducive to the development of automaticity

The first step is to have intention to change behavior. But intention to behave does not necessarily lead into action. More of this phenomenon called intention-behavior-gap in chapter 2.5. But if the intention is carried out into action, repetition of the behavior depends whether the person sees positive or negative outcomes. Satisfaction depends on realistic goals and whether the person perceives that they come closer to what they want to achieve. For example, coach can help in habit formation by focusing attention to one´s goals which the person is depreciating or not even aware. Also, the motivation and reward might have a role in this (see chapter 2.3. Self Determination Theory). If the intention has led to action and repetitions, repetitions need to be in consistent context to lead to habit formation (Kaushal 2017; Lally & Gardner 2013).

Duhigg (2012) has presented the neurological loop of habit including three main points: a cue discharges a routine which gives a reward (Figure 1).

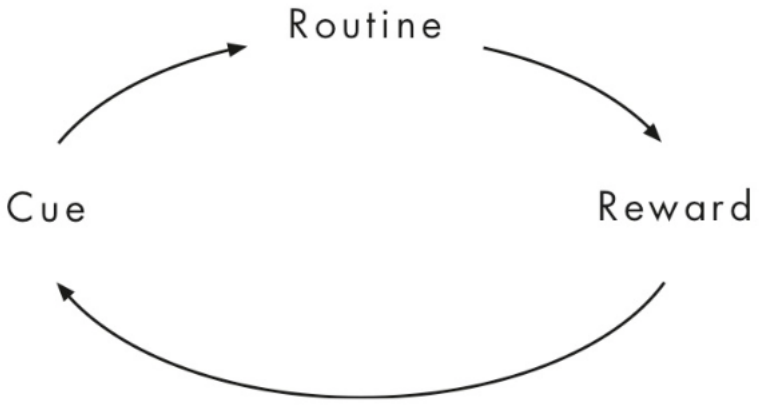

Figure 1. Neurological loop of habit. Adapted from Duhigg (2012).

Researchers seem to agree on cue-routine-association but see reward in different ways. If the reward is intrinsic (pleasure, satisfaction) it probably helps reaching sustainable habit. But if the reward is extrinsic (money, things) it can have even negative effect on habit formation. Although, extrinsic reward can be helpful if it is not the goal of a behavior or it can be seen facilitating the evolve of a habit (Deci et al. 1999).

Planning and self-monitoring seem to be an effective way to enhance habit formation. And not only planning of what, when and how to perform a behavior but also coping-planning (Sniehotta et al. 2005). Coping-planning is a procedure how to cope if something goes unexpectedly and it not possible to conduct a behavior. Gardner et al. (2019) states that if a behavior is a habit, it does not necessarily need the intention, motivation or awareness to act. They might be needed when forming a habit but not necessarily afterwards.

As a biological phenomenon, habit is a strong neural circuit related to basal ganglia in the brains (Graybiel 2008). The brain is very flexible for change and habit can be compared to a muscle: the more we exercise something, the stronger the muscles, or in this case neural circuits, grow. But if this is an unhealthy habit, it takes lots of energy to change it. Also, genetics seem to play role in exercise habits. Stubbe et al. (2006) conducted a large twin-study from seven countries and 85,198 participants and showed that one might inherit exercise habits from parents. The researchers implied that it can be a result of the genes that effect on the acute mood effects of exercise, high exercise ability, high weight loss ability and personality.

2.3 Time for a habit formation?

How much time it takes to form a habit? Walter (2017) investigated how long it takes to stabilize a health related -behavior and what affects that process in their 12-week lifestyle intervention study. They used Self-Report Habit -Index (SRHI) and noticed that the habit formation happened during 6 to 9 weeks when the behavior was done at least 4-times per week. Continuity and consistency were the most reliable parameters to predict habit formation. Also, mood was seen to affect it. Lally et al. (2010) reported that it took 66 days on average to reach the plateau of habit when measuring habit with SRHI but the variation was large (18-254 days). They also

noticed that despite the fact that the participants were motivated, half of them failed to form habits.

Is habit formation disrupted if one misses one time conducting behavior? Lally et al. (2010) states that a missed time decreases the automacity in the short-term but not in the long-term if it happens once. But if the missed timeframe is a week or more, it has a negative effect on habit formation (Armitage 2005).

2.4 Theories of behavior change

There are multiple behavior change theories. Sheeran (2016) made a meta-analysis from different theories and the elements that they include (Table 1). As seen from table 1 most theories presented focus on attitude. Also, self-efficacy and intention are relevant in almost all the theories.

TABLE 1. Behavior change theories and parameters that they include.

Health behavior theory	Attitude	Norm	Self-efficacy	Intention	Additional variables
Extended parallel process model	✓		✓	✓	Threat appraisal
Information-motivation-behavioral skills model	✓	✓	✓	✓	Information, behavioral skills
Health action process approach	✓	✓	✓	✓	Risk perception, action planning, coping planning, barriers, resources
Health belief model	✓		✓		Perceived susceptibility, perceived severity, health motivation, cues to action
Protection motivation theory	✓		✓	✓	Perceived vulnerability, perceived severity, fear
Prototype/willingness model	✓	✓		✓	Prototype perceptions, willingness
Social cognitive theory	✓	✓	✓	✓	Impediments
Theory of reasoned action	✓	✓		✓	
Theory of planned behavior	✓	✓	✓	✓	Actual control
Transtheoretical model	✓		✓		Processes of change

There are also several different cognitive and motivational strategies to form habits: Goal setting, Action planning & intention implementation strategies (Gollwitzer 1999; Gollwitzer & Sheeran 2006; Sheeran & Orbell 1999), Barrier management strategies (Krämer & Fuchs 2010), Self-efficacy & motivational strategies (Fuchs et al.2011) as well as strategies to bridge the Intention-behavior-gap (Sniehotta et al. 2005). Walter (2016) discovered, when studying these strategies in the context of diet and exercise behaviors, young adults (under 35 years) used

strategies more than older participants in the field of PA. They also noticed that females used different strategies than men in PA and diet. Action planning strategies were used in both, diet- and PA -behaviors, and they were found also to be the most effective ones. Also, acute barrier management was used especially in PA and it was found useful in PA but not in eating. Precautionary barrier management was used more in diet behaviors and was found useful in the short term. Enhancing self-efficacy / motivation and goal-setting strategies were found effective but not many of the participants used these strategies.

Planning was seen as the most important factor for parents to increase their exercising habits (Mailey et al. 2016). Coping skills were also seen as an important ability to keep exercising habit going (e.g. if it is raining, I am going to do home-exercise instead of jogging outside). Sniehotta et al. (2006) findings support the importance of planning. They concluded that in addition to action planning (when, where, and how to act) also coping planning was important (how to face possible barriers). However, Parschau et al. (2014) did not find a relationship between planning and PA with the sample of 484 obese women and men. However, they reported self-efficacy and social support to be linked to PA.

As seen from table 1, self-efficacy has seen to be an important factor of behavior. Bandura´s (1997) self-efficacy theory thought that self-efficacy beliefs are the primary determinant to one´s motivation to achieve one´s goal and that leads to certain behavior. High self-efficacy can also help to overcome barriers (Bandura 1997). If one is confident to do something, obstacles in the way might feel minor. The theory is based on social cognitive theory where people are seen to be a proactive part in their environment rather than passive responders. Figure 2. introduces four factors of which influence the feelings of self-efficacy. Bandura (1997) states that past performance is the most important factor of self-efficacy. It is something that we have done ourselves and if we have succeeded it gives us confidence to succeed again. Vicarious experiences influence our self-efficacy through monitoring others and comparing ourselves to them. Verbal persuasion is something that e.g. coaches carry out when they give a pep-talk before competition. According to coaches it is the most important tool for them to influence an athlete´s self-efficacy (Feltz 2008, 10). Physiological states mean the interpretation of how one is feeling about their body. For example, an athlete might feel that his/her increased heart rate is telling that they are ready for competition. The other might feel the same physiological

response as a sign of nervousness and which might affect their efficacy-beliefs and their performance negatively.

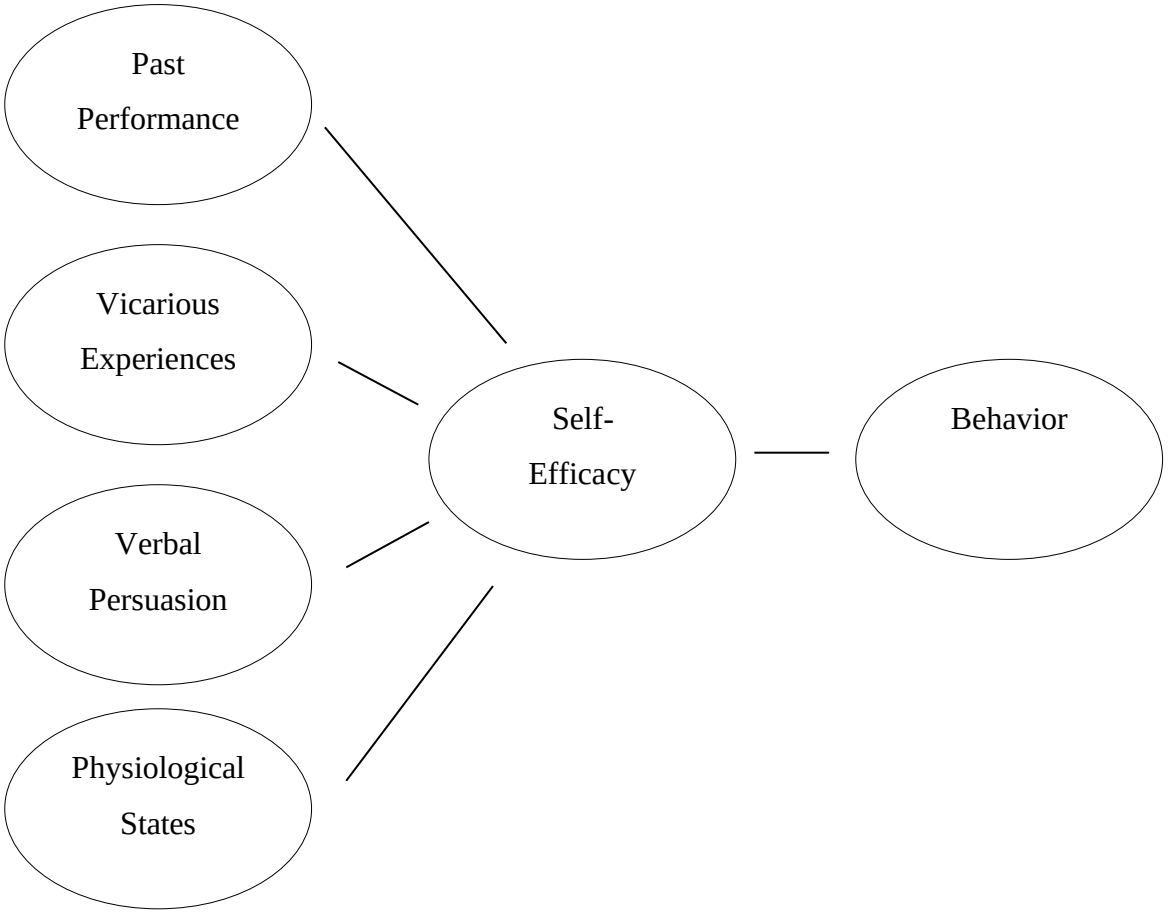

FIGURE 2. Self-efficacy theory. Modified from Bandura (1997). The four categories (Past performance, Vicarious experiences, verbal persuasion and Physiological states) affect one´s feelings of self-efficacy and again to behavior.

Motivation and especially rendering the motivation into action have a big role on behaviour change. Ryan & Deci (2000) have studied motivation and they mention that a person has an active role determining where to go in one´s life and what goals to set for oneself. They focus on three of the basic psychological needs that affect one´s motivation: feeling of autonomy, feeling of competence and feelings of relatedness. One has to feel that he is capable of engaging in an activity that is in line with one's interests and values. One also has to feel confident enough and feel that one has a good chance to succeed in task. One important aspect is also that

a human being is a gregarious animal: it wants to be in contact with other people. When these 3 needs are fulfilled, according to Ryan and Deci (2000) one is self-motivated and feel mentally healthier. Chatzisarantis et al. (2008) noticed that perceived autonomy was linked to PA-behavior via attitudes and intention.

Figure 3. represents the different stages of motivation adapted from Ryan and Deci (2000). Amotivation is a stage where one has no motivation. If one is intrinsically motivated, the behavior feels interesting and enjoyable. Between these two is extrinsic motivation with four different categories. External regulation means that one is doing something because of being afraid of punishment or rewarded by doing it. In introjected regulation one is trying to save one´s self-esteem by doing something. In identified regulation one feels that something is important and that is the reason for carrying out an action. On integrated regulation one feels that the action is in coherence to one´s values or goals in life. These different stages can change during time although one would engage the same action.

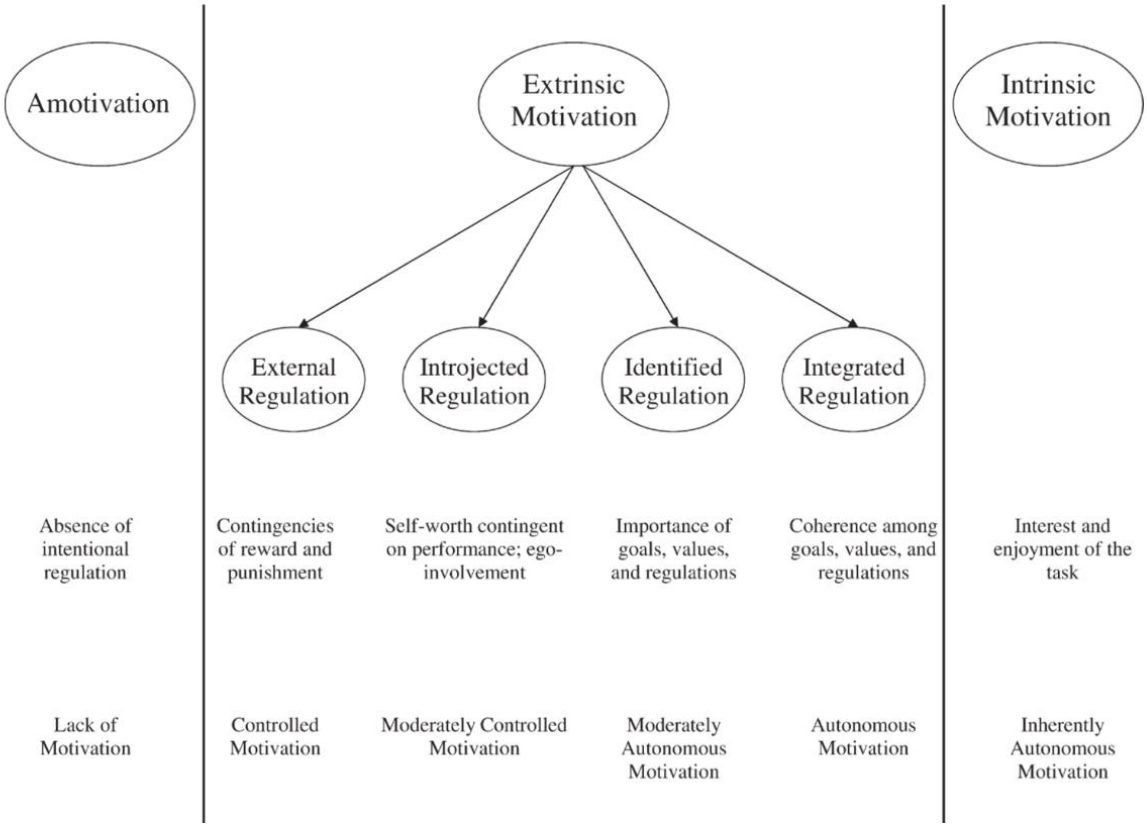

FIGURE 3. Different stages on motivation on self-determination theory (Ryan & Deci 2000).

Fuchs et. al (2011) focused more on a clinical aspect of sport and had 220 participants from an orthopedic rehabilitation clinic. They were teaching cognitive-behavioral strategies such as goal setting, action planning, barrier management, and self-monitoring to participants. They noticed that a Motivation-Volition-based (MoVo-model in figure 4.) concept which was targeting on increasing physical exercise with orthopedic patients led to long-term behavior change in exercising. They also noticed a decrease in feeling pain than the control group (Fuchs et al. 2011).

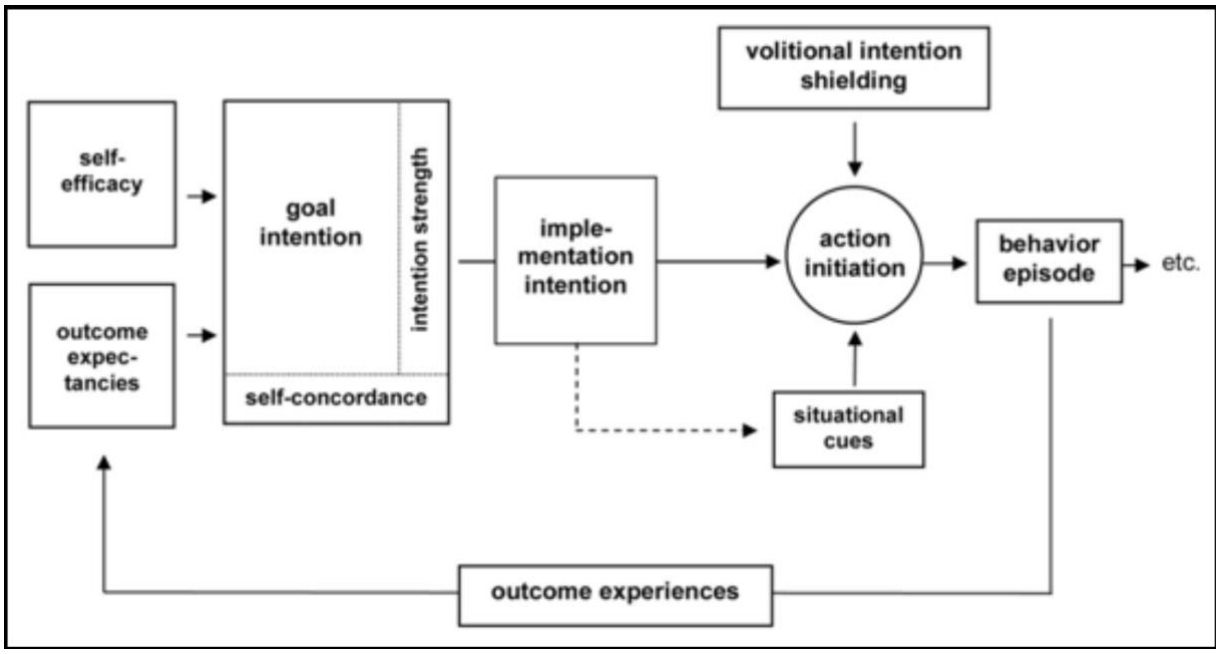

FIGURE 4. Motivation-Volition-model adapted from Fuchs et al. 2011, 795. In this model self-efficacy and outcome expectancies have an impact on one's goal intention. Goal has to be in self-concordance, and it affects to implementation intention. Before the actual action happens, one needs situational cues and volitional intention. The behavior and how the person perceives and experiences it influences outcome expectancies and feeling of self-efficacy.

There are numerous models and theories to explain behavior change but in the field of behavior science there were difficulties to replicate and measure behavior change. To answer this problem, Abraham and Michie (2008) defined 26 behavior change techniques (BCTs). Michie et al. (2011) proceeded in their research and introduced a behavior change wheel (Figure 5)

which was developed from 19 different frameworks of behavior change and can be thought of as an umbrella framework for behavior change and a systematic way of doing interventions. It is a three-layered system centered by Capability, Opportunity, Motivation – Behavior -model (COM-B) (see figure 5). The second layer consists of nine intervention functions and outer layer policies supporting these functions. (Michie et al. 2013). Intervention functions are taxonomies which Michie et al. (2013) expanded to 93 BCT-taxonomy from 26. It includes 16 different groups of interventions like Goals and planning, Feedback and monitoring and Social support. All of these groups involve a different number of behaviors change techniques for example goals and planning include *goal setting* and *action planning*, or self-belief includes *self-talk* or *focus on past success* amongst other things. For full list of taxonomy see appendix 1.

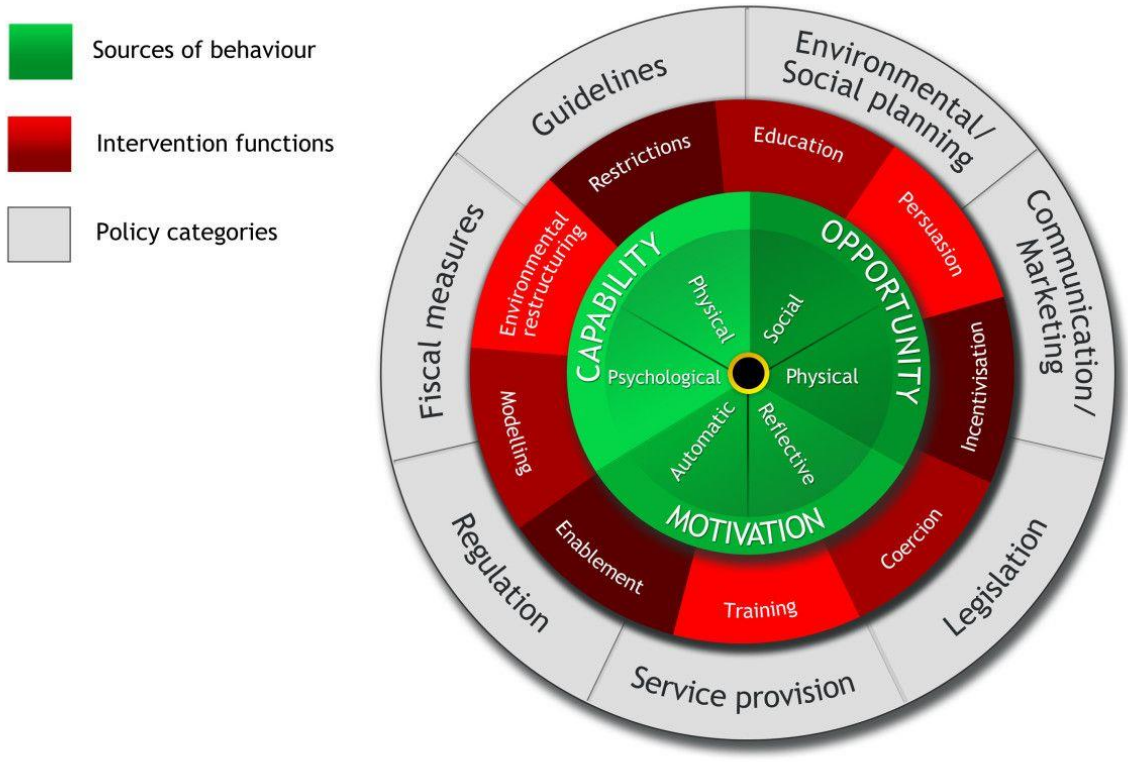

FIGURE 5. Behavior change wheel (Michie 2011)

2.5 Barriers in a habit formation

There are several mental or physical barriers to prevent habit formation. Intention has stated to be a good predictor of behavior (Gollwitzer 1999; Gollwitzer & Sheeran 2006; Sheeran & Orbell 1999). However, there is a phenomenon called intention-behavior-gap. It happens when one is intending to change behavior or start a new one but does not act upon the intention. Rhodes & Bruijn (2013) found out in their meta-analysis with 3899 participants in the field of PA that 42% of the intenders we successful to execute the intended action whereas 36% were not. The study included also non-intenders of which 2% actually performed PA although they were not intended to do so. The rest (21%) were not executing any PA because they were not intended to. Rhodes & Dickau (2012) explained the difference between the intention and actual behavior with motivational flux. The more stable the intention, the more consistent was behavior. Other things mentioned were perceived control/self-efficacy, planning, extraversion, habit and environmental proximity to recreation. Gender, agreeableness, openness, body mass index and ethnicity were not seeing to affect behavior of PA.

Barriers can also be age-related. Lee et al. (2008) studied elderly people and stated exercising habits and found that restraints in physical condition of elderly people are often seen as barriers for exercising. Also, the attitudes and beliefs about the costs and benefits were thought to prevent them from exercising. Exercise was seen to be effective for others but not for themselves. Physical activity was also seen very vigorous and hence would not fit for them anymore (Lachman et al. 1997; Lachman 1991). Elderly people perceived their health too poor for exercising. One significant barrier for elderly people was also the fear of falling (Arfken et al. 1994; Howland et al. 1993). Also lack of will power (Newsom et al. 2004) and time management and scheduling time for exercising (King et al., 1992) were stated barriers for PA.

One significant barrier for exercising in adults is parenthood. Lack of time, guiltiness of leaving from home, household duties and fatigue are well-known obstacles for parents (Rhodes et. al 2014, Berge et. Al 2011; Hull et al. 2010).

There are many barriers preventing the habit formation. Age, domestic status or life situation can affect to it. Barriers can be physical, for example PA cannot be carried out because of an injury. They can also be mental, and it seems that half of intentions will not lead to actual action and thus prevent a habit formation.

2.6 How to change a habit?

It takes energy to make decisions (Vohs et al. 2014). To change habits, it could be beneficial to try shape the environment so that forming healthy habits would be as easy to conduct and existing unhealthy habits hard to reach. Self-discipline is one option when trying to change habits, but willpower has been appointed to be limited resource (Baumeister et al. 1998; Baumeister et al. 2007; Gailiot et al. 2007; Hagger et al. 2010). Although, Oaten & Cheng (2006) point out that it is possible to strengthen willpower. Later, there has been lot of debate about ego depletion and its existence (Hagger et. al 2016).

Van Triet et al. (2011) claim that powerful interventions in diet research should focus on changing the situational cues that trigger the behavior, trying to inhibit the response of a habit or changing related incidentals. The cue-response association is the key to prevent the habit from occurring (Lally & Gardner 2013). Paths to disrupt this association is to compromise the exposure of a cue involved in a habit (Verplanken et al. 2008). Changing the environment so that the cue does not exist in a new environment seemed to be better way to break the habit than trying to consciously change it (Gardner et al. 2019). Lally et al. (2010) suggest that one should bind a wanted behavior to certain events that happen daily. That is not possible always and another option is to change the response to the cue (Wood & Neal 2009). For example, when I usually go to eat snack, I drink water instead (replacement).

Planning the action can be effective to influence behavior change. Shiehotta et al. (2005) states not just the planning of behavior itself (action-planning) but also preparing on how to act on difficult moments (Coping-planning) is important.

Also, it is difficult to change anything if one is not aware of his/her acts. Michie et al. (2009) stated that interventions that included self-monitoring were significantly more effective than ones without it. Self-monitoring together with feedback can be even more effective. Also, accepting the negative feelings, which required less energy than suppression, and still continue doing what was important, were helpful mechanism for change (Alberts et al. 2010). Neal et al. (2011) presented one very concrete way of disrupting a habit in eating. They studied eating habits at cinema with popcorn. They noticed that when changing the dominant hand to non-dominant hand, led to less eating.

New research propose that behavior should be divided in sequences that follow each other (Gardner et al. 2019). For example, going to the gym after work usually needs preparing steps like getting the gym-bag, packing it and taking it to work. The intervention should focus on the start point of that process. Preparatory work before going in the gym was a strong predictor of habit formation also on Kaushal et al.'s study (2017).

3 MEDIA-BASED BEHAVIOR CHANGE INTERVENTIONS

In Europe and North-America the internet-usage is almost 90% of the population (Internet world stats 2019) so behavior change -applications developed for phones have been seen as cost-effective way for reaching people. Internet and phone-apps are relatively new media to use behavior change interventions. People seek for different healthy apps and use several of them on daily basis, especially apps that are free. The most common reasons for use of health apps were recording the health-data or trying to build a new habit (Rubanovich et al 2017). Wantland et al. (2004) noticed that web-based interventions showed more improvement in exercise time, knowledge in nutrition and weight-loss maintenance than non-web-based methods. Also, workplace-interventions seem interesting as people spend a lot of time at workplace and the costs of sick leaves in Finland only are 3.4 billion euros annually (Rissanen 2014). It is not only the absenteeism which causes costs, but it is also estimated that presenteeism costs equally as much. Presenteeism means that people are sick or unable to work but they still go to work. Johns (2010) states that the costs of presenteeism are even more than absenteeism. It has also estimated that people with good wellbeing are 19% more productive than people with poor wellbeing (O.C. Tanner Institute 2016).

The following section will review different web-based techniques for behavior change by the view offered by Abraham & Michie (2008) and Michie et al. (2013) discussed in chapter 2.4. First there will short review about different techniques but because the fast arising number of phone applications, the main focus is in the apps. The matter will be discussed primary from workplace-perspective.

3.1 Different methods for web-based intervention delivery

Webb et al. (2010) performed a review about web-based interventions and the usage of theory and behavior change techniques in those. They found that three theories were used more than others: theory of planned behavior (TPB), Social cognitive theory (SCT and transtheoretical model (TTM) but the use of theory of planned behavior was found more effective than the other two. They also stated that interventions that used multiple behavior change techniques were

more effective than ones with less use of techniques. The most effective techniques were stress management and communication skills training. Also relapse prevention/coping planning, facilitating social comparison, goal setting, action planning, and provision of feedback on performance had positive effect on behavior change. They also stated that it is beneficial to use various ways of delivering the intervention. The best way to support the internet-intervention was to support it by having a chance to contact an advisor (or peer) when needed or with scheduled meetings with an advisor. Also, SMS or email as additional method of delivery had small effects to behavior change (Webb et all 2010).

Brannon et al. (2015) noticed that modelling, for example, watching videos on how perform an action, was effective way for behavior change in children (6-13y). For adolescents BCTs like providing consequences for behavior, providing information on other's approval, prompting intention formation, self-monitoring, and creating a behavioral contract were the best predictors of behavior change. Interesting on their results were that although giving instructions was used in almost half of the apps, it had negative impact on interventions.

McDermott et al. (2016) noticed that BCT *provide information on the consequences of behaviour in general* was seen to have positive impact on intention but not in behavior. BCT *provide feedback on performance* had negative impact on behavior and *relapse prevention/coping planning* had negative impact on intention. Unlike Webb et al (2010), Mcdermott et al. (2016) found that BCTs which were based on social cognitive theory had better effects on intention than theory of planned behavior.

Nowadays, there are lots of means to communicate via computer-based solution. One of the biggest advantages is to reach people far away with low costs. Koivulahti-Ojala (2017) reported 90% savings for companies using Skype when teaching technology. It has also been noticed that with low costs, the quality does not have to suffer. There is growing evidence suggesting that the provision of mental health services over the internet is both clinically efficacious and cost effective (Eysenbach 2012). Abrams et al. (2014) stated that richness in data can be compromised if using only text-based method compared to online audiovisual or face-to-face-meetings. But in the same time there were not much difference between face-to-face-meeting

and online audiovisual-meetings. Simon (2006) agrees with this view. Satisfaction to instant-message communication was lower than face-to-face or videoconference communication but there was not difference in face-to-face and videoconference-communication.

The biggest challenge in Karpova et al.'s (2009) study about computer-mediated communication, was that the non-verbal cues were missing when having meetings online. In the video-based communication, the lack of eye-contact was found troublesome with multiple participants. They noticed that using different types of technology depending what they wanted to accomplish, was more helpful than using just one. (Karpova et al. (2009). Denstadli et al. (2013) stated that it is useful to apply both of these techniques (F2F and video). When building new ties or doing complex tasks, it is better to meet face to face. But if there are already pre-existing ties and one is working on explicit tasks, online meeting can be useful.

3.2 Phone applications

New phone apps are constantly developed, and they can be cost-effective way to reach potential persons for interventions. Mobile apps have stated to be well accepted (Payne et al. 2015; Deady et al. 2018). There are multiple apps involved in health interventions and next chapter will review them primary on workplace settings.

Physical Activity-apps

Dunkl & Jimenez (2017) studied how the leaders perceived the app-based methods at workplaces because they can be seen as promoters of PA in workplaces. They noticed that leaders with positive attitude towards health promotion and young leaders were using apps more than their peers. They also noted the importance of experts. Leaders were more intent to get feedback from an expert rather than from app which underlines the role of a coach in interventions.

De korte et al. (2018) wrote a review article about BCTs used in apps to reduce sedentary behaviors in the group of office workers. They concluded that BCTs had minor role in apps.

On average 7 out of 26 taxonomies were used and they concluded that apps needed better planning to help people to change their behavior. Yang et al. (2015) presented similar results (6.6 BCTs per app). When studying 127 apps from an App store, 1 – 28% included some theory background (Covan et al 2013). Usually the paid apps included more BCTs than free apps (Yang et al 2015; Direito et al 2014).

Buckingham & al (2019) concluded in their systematic review that mobile apps might be effective tool for promoting physical activity in workplaces. They also noted that there was a slope of using the app in the long run and engagement was poor.

In the field of PA, Direito et al. (2014) stated that app-interventions can accomplish to reduce sedentary behavior time in their systematic review. Apps can be beneficial for increasing PA and especially walking (Direito et al. 2014; Walsh et al. 2016). Webb et el. (2011) noticed that people can affect to others and mimic stair walking. If a person was using stairs at the office, it could have led to others to take the stairs too. Modave et al. (2015) compared PA-apps to official guidelines of physical activity and noticed that very few of them were evidence-based and met the criteria set for PA by ACSM. Self-monitoring at least one part of the intervention seemed to have best effect (Michie 2009). There were also apps for preventing injuries but like noticed in the other apps, there were little evidence-based content in these apps or even false information (van Mechelen et al. 2014). There were short-term effects noticed when investigating PA-apps but Direito et al. (2014) questions if the PA- apps are supporting the behavior change in longer-term.

Nutrition-apps

In the field of nutrition, Han et al. (2019) found good results on workplace intervention using weight control -app. Short-term decreases in bodyweight and metabolic factors were discovered but long-term were not followed in this research. Beleigoli et al. (2019) stated in their systematic review that web-based interventions were more effective in short-term weight-loss than nontechnology-based interventions but there was no difference in long-term. Balk-Møller et al. (2017) conducted a 9-month web- and app-based intervention with workers in health care.

The intervention was focusing on losing weight, increase in exercise and smoking. They noticed minor changes in participants weight, fat percentage and waist circumstance. They stated that even though the changes were minor they were still beneficial for health (weight -1,01kg, p=0,03; fat percentage -0.8%, p=0.03; waist circumference -1.8 cm, p=0.007).

Haapala et al. (2009) found that sms-service was effective in short- and long-term weight-loss. However, in Shaw & Bosworth's (2012) systematic review, there were no long-term effects. When investigating mobile-based intervention, Bacigalupo et al. (2012) found significant short-term but no long-term effects on weight. When comparing self-monitoring in mobile apps and "older" methods, the app-interventions seemed to be more effective than earlier shapes of self-monitoring (diary, website) (Carter et al. 2013; Patel et al. 2019). Lyzwinski (2014) shares this finding in her systematic review. She also stated that the apps investigated in her review comprised a lot of theory and BCTs. The usual theories involved were Social Cognitive Theory, Elaboration Likelihood Theory, Control Theory, and Goal Theory. The Apps also included minimum of five different BCTs which undermine the importance of theory background in the apps.

Sleep & recovery apps

There are many kinds of sleep apps available. One can measure sleep length & structure, when to wake up in proper time or the apps can record snoring or sleep talking. Ong & Gillespie (2016) summarized that sleep apps were good when recording sleep time but the analysis on sleep structure still remained limited. Van Drongelen et al. (2014) conducted a mobile-based study with pilots to increase their sleep time and quality. They focused on PA, nutrition and exposure on daylight -instructions and noticed promising results on fatigue and sleep quality. Lorenz & Williams (2017) and Gruwez et al. (2017) stated that the quality of the sleep recording apps was not in that level that they could be used in clinical surroundings.

M-health apps

Deady & et al (2018) showed promising results when using mental health -app among office workers with 90% of the participants informing better mental fitness after using an app. Also, the sick days in past month decreased and workplace -productivity increased. Scherr & Goering (2019) stated that m-health apps were a good tool for spreading information about mental health. Arean et al. (2016) showed that apps can be helpful with moderate state of depression but not more severe states. Harrison & Goozee (2014) covered the mental health iPhone apps and noticed that the scope and utility are in poor stage. Although, single apps with good acceptability were mentioned (Ahtiainen et al. 2013), there was little evidence-based mental health apps available. Grist et al. (2017) expressed their worry about the safetyness of mental health apps because they have not been scientifically evaluated before release. One area that seemed promising to increase mental health were Mindfulness-apps (Flett & al. 2018).

As a conclusion, there are a lot of apps available which promote health and behavior change. However, only minor percentage of them are based on any theoretical background or use BCTs. It seems natural that use of theories and BCT´s are correlating with the financial effort in app development. In addition, there is a lot of research about physical activity-, nutrition-, smoking- (ie. Hoeppner et al. 2016), alcohol reduction- (ie. Crane et al. 2015) or mental health -interventions but not much research about holistic mobile-based programmes.

4 PURPOSE OF THE STUDY

The aim of this research is the planning, implementation and evaluation of BLA programme. This is an acceptability and feasibility study. In addition, the purpose is to study possible habit change during the programme and perceived effects and acceptability of the programme.

Research questions in detail:

- How is the program experienced by the participants and the researcher-coach?
- Do the health habits change during the programme?
- What are the participants´ perception of the effects of the BLA-programme on their life, working experience and well-being?

5 METHODS

5.1 Research design

Present study is a feasibility and acceptability study. However, it is also possible to see the study as an educational action research where the intervention programme is planned, implemented and evaluated. Both the participants and the coach are learning during the intervention.

This study utilized mixed methods. Quantitative component of the study included questionnaires to assess participant´s perceived effects of the programme and the habit formation during it. Qualitative component of the study comprehended data from the interviews conducted at the end of the programme. As data analysis is a fundamental phase in research the selection of the methods should be carefully chosen (Flick 2014). In this study, mixed method was selected to obtain a comprehensive picture of the results. While the quantitative data gives objective information, the qualitative data can offer more depth in understanding the subject of interest. The aim of content analysis is to present detailed information of the substance (Schreier 2014). Also, the number of participants that could be recruited to the programme limits the selection of method.

5.2 Participants

The participants were selected from an It-company which consists of around 450 employees. To obtain a heterogonous sample, participants were chosen to reflect different sections of the company. The aim of was to have 6-10 participants. The most important criteria for selection was motivation to follow the programme. The other criteria were to select people with different ages and from both sexes. An invitation was sent through company's internal website (Appendix 2). The researcher was also introducing the study on company´s internal fair. When a person was interested to attend, he/she was asked to write a motivation letter to the researcher. From the first announcement, there was 2.5-week time to write the motivation letter. Reminders were sent two times on the last week before deadline. 20 employees replied, 10 females and 10

males. The researcher also worked in the same company than the participants, so he ruled himself out from the selection of the participants and three-person selection committee was recruited. One of the three persons was working for the company which offered the programme and had several years of experience about the coaching at this company. Another person had owned a coaching company and had several years work experience as a coach. Last one had worked for company offering the programme also and studied sport and exercise psychology and philosophy. The information about the selection committee was send to the people who had applied by sending the motivation letter. Permission was asked if their letter can be shown to committee anonymously and if they still wanted to add or modify their application. The applicants were given one week to finalize their application and give permission to show their letter to the committee.

First, the participants were divided into two groups by gender. Then the three-person selection committee compared the motivation letters from different age groups and decided the most suitable for this kind of coaching based on their goals for the programme. Five females and five males were then selected for the study. The selected participants were then sent the notice of privacy and data protection (Appendix 3) and asked to sign consent for research (Appendix 4). The participants were then offered the Better Life App (BLA) and meetings with the coach free of charge.

Participant´s mean age was 46 years ranging from 29 to 64. Six of the participants had an Android -operating system on their phone, four of them had IOS. Two of the participants worked in manager-position, rest of them were specialists in different sections in the company (developers, testers, security, communications). Two of the participants dropped out during the programme for personal reasons.

5.3 Background of the researcher / coach

When conducting a qualitative study, the researcher-employee-coach history might affect to interpretation of the data and so it is worthy to introduce the researcher. My educational and occupational experience lies in It & economics where I have two degrees (Bachelor of Business Administration; Master of Economics). I have been working as a manager in an It-company for

over 10 years. I have also background in biology of physical activity and have a Master´s Degree in Coaching and Fitness Testing from the University of Jyväskylä. Currently, I am a master´s student of a Sport and Exercise Psychology at the University of Jyväskylä. I have also studied psychology and nutrition and during the study, took one 5 ects course of acceptance and commitment therapy.

This is the 4th thesis that I have been carrying out. The experience of the previous studies were helpful when conducting research and analyzing the results. However, this was the first study where I handled and analyzed qualitative data. The role of a coach was familiar to me beforehand. I had been a coach in floorball few years and before the study started, practiced as a wellness coach in a company, which focuses on sleep and recovery. I was trained for being a coach in the programme by the company who offered the programme for the participants, yet it was my first time to perform as a coach for the current setting.

As a conclusion, I had relevant experience to organize the intervention and conduct a mixed method study but as a novel coach for this programme.

5.4 The intervention programme

The intervention method included the Better Life App (BLA) and meetings with the coach. The model behind the app and the programme is based on Hintsa´s model of wellbeing (Hintsa Performance 2018): Circle of Better Life (COBL) (figure 6). According to Hintsa (Saari 2015), the performance is byproduct of wellbeing and Hintsa´s motto is: Better life – Better performance. The programme focuses on holistic wellbeing. It is a hybrid coaching system including phone app and meetings with the coach. The application provides educational information and ways to follow one´s own progress. Meetings with the coach focus on personalized recommendations based on personal needs. The programme lasts seven months and was delivered in 6-week sprints. It included seven meetings with the coach. The aim of the programme is to develop sustainable health habits.

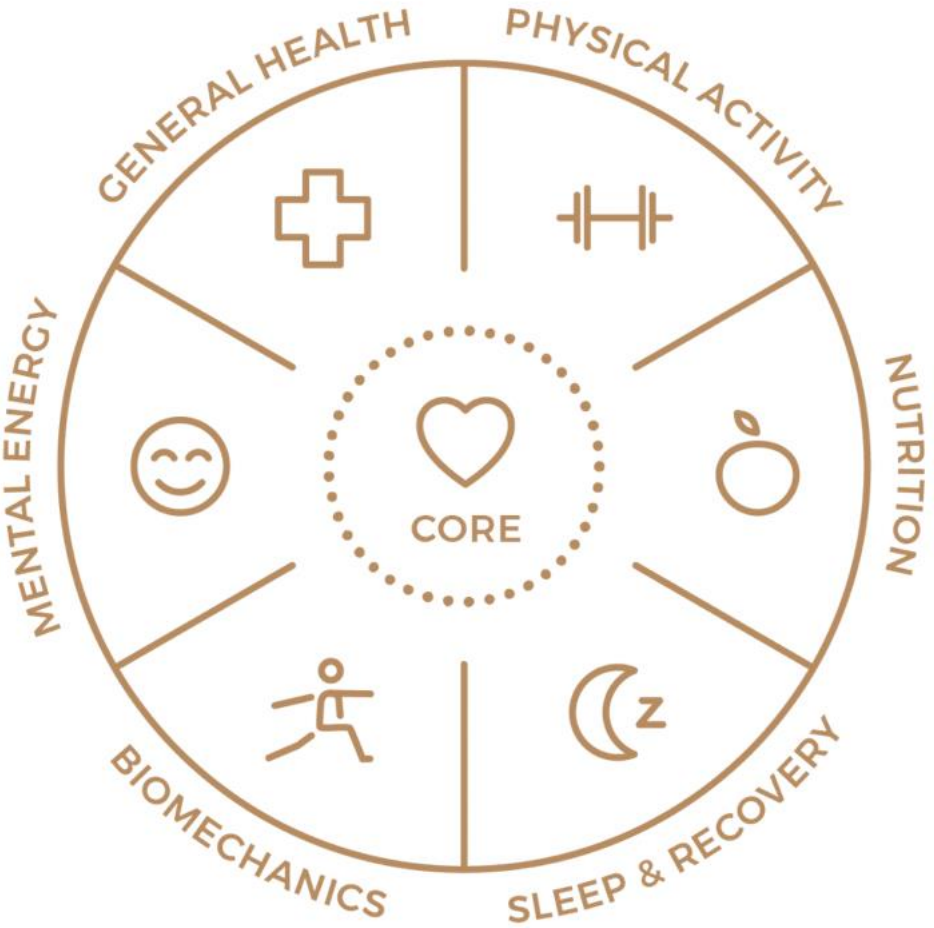

FIGURE 6. The Circle of Better life. (Hintsa performance 2018)

The programme involves seven aspects of wellbeing described in figure 6: core, physical activity, nutrition, sleep & recovery, biomechanics, mental energy and general health. The idea is that circle keeps moving only if every part of the circle is functioning. Core involves questions from identity and inner motivation, and it is the foundation for every aspect of the circle. Physical activity includes information about endurance, strength and mobility training. Nutrition focuses on healthy diet to gain optimal performance. It includes areas of disease prevention, energy production, immunity and how diet effects on physical and mental performance. Sleep and recovery -part of the circle covers the importance of sleep, how to maintain balance between work and rest and how improve the quality of recovery. Biomechanics includes aspects of movement control, mobility, injury reduction and enabling physical activity. Mental Energy works on how to manage oneself and how to keep positive

energy balance. General Health consists understanding of one´s health and learning healthy habits which would lead to better wellbeing.

The Better Life -Application was launched before this research started. The coach was trained by Hintsa before the study and planned the sessions according to this training. The meetings went along with these plans but varied with different participants and their interests. Also, the coaching style is individual for every coach. The Better Life -measures (survey and score) were designed for the BLA programme before the research and used as they were. The measures for acceptability and habit change were modified by the researcher to fit the needs of this research.

At the beginning of the program, participants downloaded the Better Life -app to their phones. The BLA included audio lessons and some additional material on the elements of COBL. Participants had coach´s appointment on monthly basis with video-call. Coach´s role on these meetings was to discuss the matters the participants felt important, set goals, follow the progress and give personalized recommendations. The participant had also chance to send messages to the coach with the app´s chat-function whenever during the programme. The coach also approached participants to ask how they were doing and inquired the participant´s progress on set goals.

The coaching style went along with guidelines by Ryan and Deci (2000) and Michie (2013) introduced earlier in chapter 2.3. It tried to increase participant´s motivation especially by supporting their autonomy in decision making and setting the goals individually for them. In the final session, the programme was concluded and the participant and the coach examined how to proceed after the programme.

5.5 Measures and data collection

This was a mixed method study with qualitative and quantitative features. Qualitative component included semi-structured interviews which were made after the programme (Appendix 5). All the participants were Finnish, so the interviews were done in Finnish. The names were changed for the reporting.

As a researcher-coach, I also wrote a journal about my experiences and feelings during the programme, especially after every coaching meeting. I described how I felt to start the programme as a new coach and how I experienced that the programme proceeded. I also pointed out what I noticed on the participants progress during the programme and what I found and did not found working during the programme. The researcher´s log was 5 pages / 1589 words long.

The programme included quantitative measures (Better life -questionnaire, Better Life -assessment). In addition, online-questionnaires were used to gather more information (acceptability-questionnaire, SRHI). The following will introduce used data collection more precise.

The Better Life -survey (copyright Hintsa Performance) consisted 7 * 7 questions about each element of the circle of better life described earlier. It used 5-point likert scale and included questions like "*I feel that I am in control of my life", My daily life involves a lot of physical activity and exercise" or "My diet is made up of healthy good quality foods and drinks"*. The participants filled out this survey in the beginning and after the programme.

Better Life -score (copyright Hintsa Performance) was quick evaluation in the BLA which included seven simple questions, one for each element of the circle of better life such as "*Do you feel that you get sufficient sleep and general recovery each day?*". The assessment was done by estimating one´s current state on 1-10-scale. Better Life -score was calculated as a sum of these figures.

Measure for acceptability (Hankonen et al. 2017) included ten questions pattern for perceptions of the participants about the programme. The questionnaire contained 8 questions with assessment from 1 totally disagree to 7 totally agree. Two open questions followed if the participant wanted to give reasons for their answers. The participants filled out the questionnaire following every sprint and after the programme. The whole questionnaire is presented in appendix 6.

Self-report habit Index (Verplanken & Orbell 2003) was a questionnaire made for assessing habit formation. It included 12 questions about the automacity of the behavior. The questions were adapted to measure habits of PA, nutrition, sleep & recovery, biomechanics and mental energy. The scale was translated to Finnish with normal backtranslation procedures in the FiDiPro-IMPAct study. It was filled out 5 times during the study: in the beginning of the study and after every sprint. The questionnaire is presented in appendix 7. According to Lally et al. (2010) there was no pre-defined cut-off a habit. The scores over 21 were not necessary a habitual behavior but the scores under it cannot be seen as a habit. Lally et al. (2010) stated that habit could be seen when there is a plateau in scores. Gardner, Brujn & Lally (2011) found that habit strength could be discovered at the SRHI midpoint. There has also been debate if the SRHI is a valid tool for measuring habit due to its subjective point of view (Hagger et al. 2015).

5.6 Data analysis

Quantitative data was collected through online-questionnaires and also the app provided quantitative data of the participant´s perceptions of the programme. Quantitative analyses included paired sample t-test to compare pre- and post-intervention results from Better Life -score, Better life -survey, Self-Reported Habit -Index and the Acceptance of the programme. Aim was also to test if there would be change in step-count, but after the intervention started, the measures seemed so vague that it did not seem purposeful the analyze them. The participants reported that they forgot to keep phone always with them or they had bought wearables which changed the measuring technique from the beginning, so the step-count was left out from analysis. Also, the amount of sleep, weight and amount of physical activity was optional for participants because for example weight was seen something that the coach did not want to emphasize particularly and so there was not reliable data available and they were also left out from analysis.

Qualitative data was gathered by semi-structured interview and writing coach´s journal. The collected data was then analyzed by content analysis. Recurring themes were found and brought to analysis. The coach´s journal was analyzed in chronological order.

5.7 Ethical issues

Privacy and confidentiality of the participants were handled with care. When selecting the participants, the application letters were anonymous. After the selection, the application letters were disposed. Before the study and the intervention-programme started, the selected participants signed an informed form where they were told about how data would be handled and secured and that they could withdraw from the study at any point. The privacy statement of the university and two companies involved in this study were as attachment of consent form (appendix 3,4.). The participants received unique numbers what they could use answering the online questionnaires. Gathered data was held in secured workstations and servers.

As the researcher also held the position of coach, there might be response-bias in results. One question was concerning about how the meetings with coach went and although the participants had unique numbers to answer anonymously, there might be bias in responses. Other ethical issue concerning coaching in the programme was that, the researcher / coach had been employee of the company over 10 years before the intervention and was a colleague of the participants. He knew some of the participants beforehand. That might have been advantage in some cases were there was not need of getting to know each other but it can be also seen disadvantage when the participants and the coach were colleagues. Although, the participants were informed that all the discussions will be held trustworthy, the familiarity of the participants with the researcher-coach may have affected the answers in an unknown way. Also, the fact that the researcher started working in the company which offered the programme can be seen conflicting.

5.8 Trustworthiness

Credibility of the research refers to reflecting results in real life. The quantitative and qualitative ways to collect the data were used to gain more depth understanding the phenomenon at hand. Validated questionnaires were used and analyzed with universally agreed qualitative tests. In data collection, different methods were used to gain more broad perspective.

The research´s *transferability* was tried to assure by giving the overall description about the whole process: the selection of the participant, a method used, participant´s and coach´s background etc. This was done to enable the use of the programme in the future with other participants. The research can be implemented with other participants as well as it is done in this research.

Dependability. The things that supported the repeatability of the quantitative study were the programme-structure and especially the phone app. Programme followed the same steps for every participant. They listened same audio lessons on the programme and the sprints were the same for everyone. The things that might lead to altered results is the fact that group participating in the programme is always different. Although, the BLA consisted the same material for everyone, the participants had big role of deciding where they wanted to focus on the programme. Participants set the goals for themselves where they wanted to focus on and what they wanted to pursue. They also decided the sprint order and in what order they listened the podcasts. Other issue that could have affected to reliability, is the role of the coach. I was performing as a coach for the first time in this programme and was learning at the same as were the participants. If the programme was coached by a senior coach that it may have affected to results. This difference might occur with any two coaches because every coach has their own coaching style and emphasizes different areas on their coaching.

Confirmability refers to the fact that results are analyzed objectively and not just from researcher´s perspective. The quantitative questions lie upon the validated questionnaires, but the qualitative part of the study is more open for interpretation of the results. Although the outcomes of the data were tried to handle as objectively as possible, there was room for bias especially if thinking the many roles of researcher-coach-employee.

6 RESULTS

6.1 Quantitative analysis

6.1.1 Sprints by subject

The participants filled out an acceptability-questionnaire after every sprint and at the end of the programme. The summary of all the 4 sprints and the whole programme is shown in figure 7. The means and SDs are presented in appendix 8.

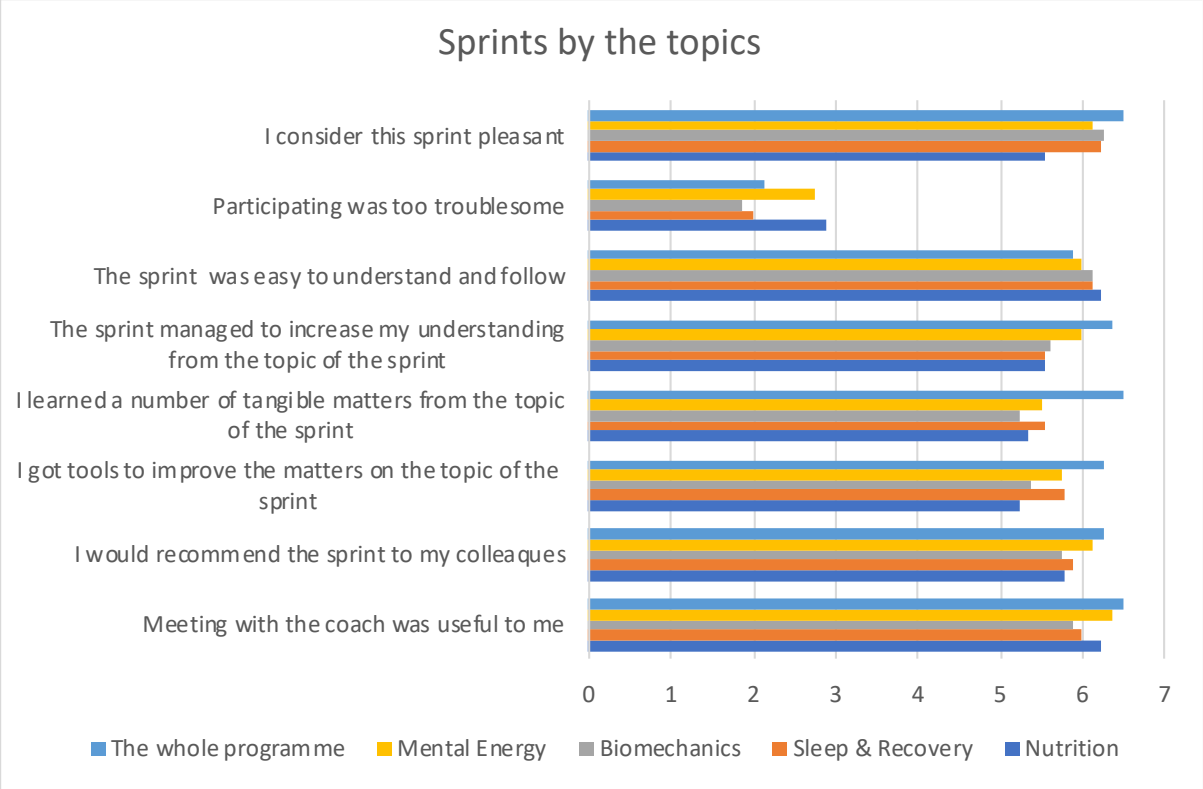

FIGURE 7. Means of the acceptability of the 4 sprints and the programme (n = 8, min = 0, max =7)

The participants perceived the programme in a positive way. The average scores in all the questions were over 5 (on a scale 1-7) and the differences between the sprints were minor. The

second “negative” question “participating was too troublesome” had the average score under 3 which shows that the participants did not perceive the sprints too troublesome. Consequently, there were largest differences in answers in this question.

Participants found the sprints pleasant. Nutrition-sprint was seen little less positively than others. However, the mean 5.6 is still a positive evaluation. The whole programme was seen as very pleasant (6.5/7). Nutrition and mental energy -sprints were seen more troublesome than other sprint but all together the sprints were not seen demanding. All the sprints were valued easy to understand and follow. Mental energy -sprint increased the understanding little more than other sprints. Participants were able to learn tangible matters from the sprints and also got tools to improve the matters they were dealing in different sprints. Participants thought the meetings with the coach were useful to them and they would have recommended the sprints to their colleagues.

Overall the programme was seen very positive (AVG > 6 and SD < 1 in all but one question (the sprint was easy to understand and follow 5.9; 1.7)).

6.1.2 Sprints in order

The participants did not carry out the sprints in the same order. The BLA-app recommended the order of the sprints depending how the participant answered to Better Life -questionnaire. Usually the first sprint was selected on the subject what the participant felt to be the most problematic, second sprint was the second problematic and so on. In figure 8. are the results when analyzing the sprints in the order they were completed.

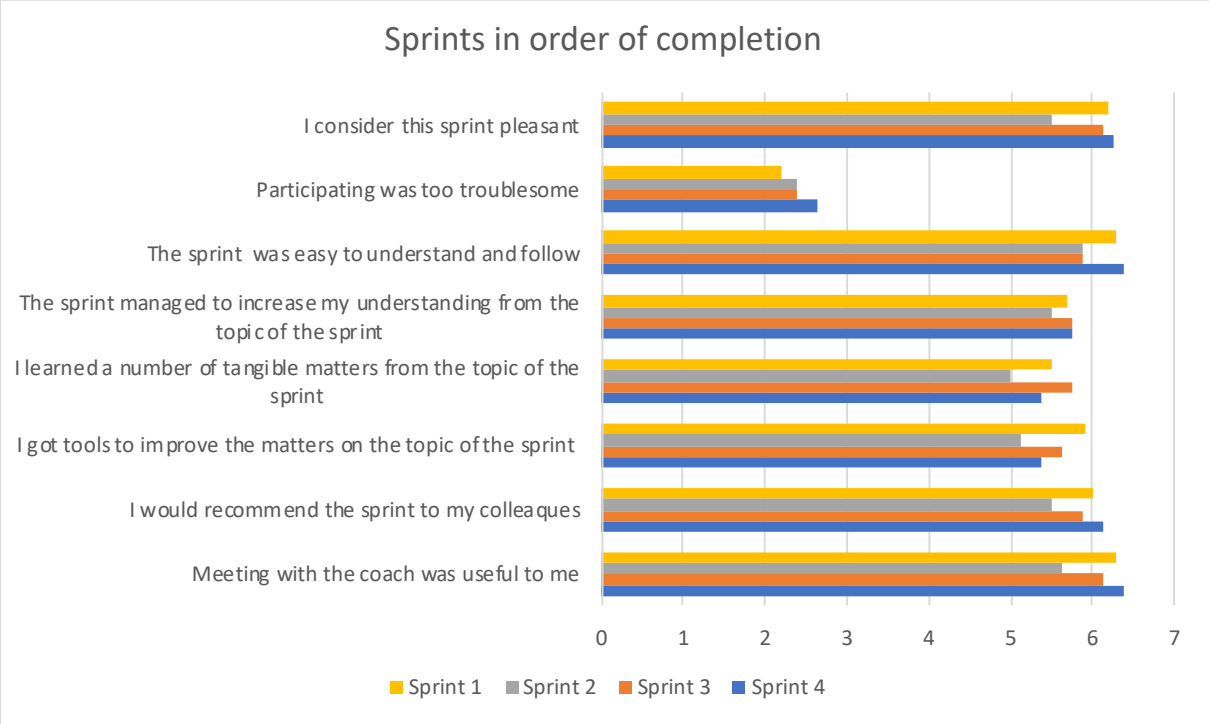

FIGURE 8. Means of the acceptability of the sprints in the order they were completed (n=8, min = 0, max =7)

The first and the last sprint were held the most positive in almost all categories / questions. The second sprint was thought to be the least positive, although it also had the average score over 5 in all categories. Also, the SD was the largest in the second sprint (see appendix 8.).

6.1.3 Self-Report Habit -Index (SRHI)

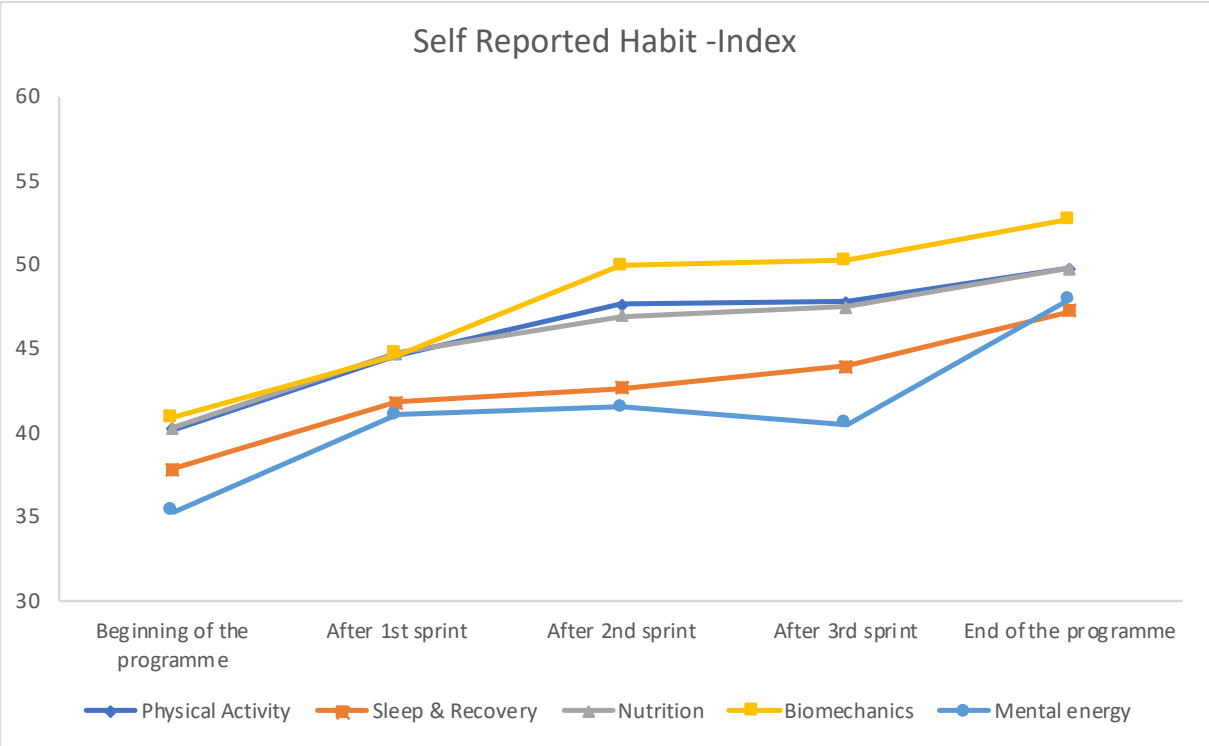

FIGURE 9. The results of Self-Report Habit -Index (n = 8, min = 0, max = 60)

The scores of Self-Report Habit -Index (Figure 9.) increased in all areas during the programme. However, the mental energy -scores had a lower point in the fourth survey point than in third. The steepest curve upwards can be seen in the beginning of the programme. There was a plateau between the second and third sprint excluding the mental energy which according to Lally et al. (2010) describes habit formation. The last survey point had highest scores in all categories. All the scores were over 21 which is kept the minimal score of possible habit. There is no pre-defined cut-off of a habit. In this survey the strongest habit became in the area of biomechanics. The means and SD´s are presented in the appendix 9.

The dependent variables t-test (TABLE 2.) showed that increase in the elements measured for SRHI were statistically significant ($p \leq 0.05$) between the first and last survey point with the exception of physical activity.

TABLE 2. SRHI results at the first and last survey point (n = 8).

Topic	First measurement		Last measurement		Sig.(2-tailed)
	Mean	SD	Mean	SD	
Physical Activity	40.63	13.99	49.75	5.20	0.136
Nutrition	39.63	13.63	49.75	6.52	0.019
Sleep & Recovery	39.25	13.19	47.25	8.83	0.044
Biomechanics	42.00	13.16	52.63	5.45	0.068
Mental Energy	37.00	10.04	47.88	9.45	0.029

6.1.4 Better Life -score

The application invited participants to assess their subjective feeling about the seven aspect of the programme on a scale of 1-10 on several occasions during the programme (table 3). Consequently, the participant's perception about their wellbeing increased during the programme. Dependent variables t-test showed that all the Better Life -variables increased from the first to the last measurement. Increases varied from 10 – 25 %. Statistical significance was < 0.05 in all elements but GH and core.

TABLE 3. Better Life -score – at the first and last survey point (n = 8).

Topic	First measurement		Last measurement		Sig.(2-tailed)
	Mean	SD	Mean	SD	
General Health	7.3	1.8	8.6	0.5	0.054
Physical Activity	6.0	1.9	8.5	0.5	0.004
Nutrition	6.4	2.4	8.5	1.1	0.028
Sleep & Recovery	5.9	2.6	8.0	1.1	0.031
Biomechanics	7.5	1.9	8.5	1.2	0.050
Mental Energy	6.9	1.6	8.1	1.5	0.049
Core	7.8	2.3	8.8	1.3	0.086
Total	47.6	6.3	59.0	5.5	0.001

6.1.5 Better Life -survey

The participants filled out Better Life -survey in the beginning and at the end of the programme. The results were higher in all the categories after the programme and standard deviations were smaller in most of the categories (TABLE 4). Statistically significant increase was found in all topics but sleep & recovery and core.

TABLE 4. Better Life -survey – at the first and last survey point (n = 8).

Topic	First measurement		Last measurement		Sig.(2-tailed)
	Mean	SD	Mean	SD	
Physical Activity	3.28	0.68	3.84	0.55	0.006
Nutrition	3.31	0.66	3.66	0.35	0.007
Sleep & Recovery	3.34	0.65	3.76	0.66	0.112
Biomechanics	3.89	0.59	4.13	0.51	0.012
Mental Energy	3.25	0.31	3.73	0.55	0.008
General Health	4.15	0.62	4.46	0.59	0.006
Core	3.71	0.49	3.91	0.59	0.207

6.2 Qualitative analysis

6.2.1 Coach´s experiences and perceptions

The coach´s journal indicates that there was feelings of excitement but also nervousness in the beginning. The enthusiasm to start the programme and the job the coach had pursued for a long time can be seen from the journal´s first notes.

> *"I´m so excited that I woke up at half past three to write this. It´s nice to get started soon!"*

> *" I sent a message to the first participant. She said that she is a bit nervous which I replied that no worries, me too ☺ I think it took a bit pressure of the start from both of us"*

The arrangement of being in a role of coach but also co-worker of the participants was troubling.

> *"The programme is starting soon and it was a bit weird to see the participants in our company´s pre-Christmas-party."*

> *"my pilot participant said that it can be hard to be a coach and co-worker because you are working in the office with the same colleagues. What if someone reveals something from a colleague you both know?"*

It was tried to be tackled with preparing emphasize the confidentiality in the programme:

> *"Note to myself: emphasize the fact to the participants that whatever they say is totally confidential"*

The journal included few times the support of the colleagues who had given advices along the way.

> *"Person x gave me some good tips and helped me to reflect my way of coaching. I realized that I can´t plan everything and I must throw myself into the meetings without knowing exactly how it is going to go."*

The journal contained positive notes from coaching experience and analyzing why the meetings felt successful. The coach perceived that the participants might have become more familiar with themselves or their thoughts. The participants who were a lot like the coach raised also some worries:

> *"The participant is very similar with me and we could talk about sports all the time. This can be a possibility but also a threat. The customer speaks with sports-terms and they are good when using metaphors, but did we actually talk about "the real things" or did the sport-talk take too much time?"*

During the programme, the coach received feedback from the participants which the coach perceived positive and gave confidence to move forward.

> *"It´s nice to see how small things like buying a water bottle had a big impact on the participant´s life"*

The coach was also glad to see a possible spillover-effects:

> *"The coachee had told about the programme to his/her friends and there could be some spillover effect seen here"*

All in all, the feelings of the coaching were very positive along the way:

> *"This coaching is so great!"*

Also, the things affecting the coaching negatively were analyzed for example poor sleep or too many meetings at the same day. The meetings starting loo late in the afternoon causing energy level drain on the coach and the participants were mentioned several times.

> *"I slept poorly last night, and I feel it affected to my role as a coach"*

> *"I felt that poor sleep had negative impact on the participant when having a meeting. The meeting was at three o´clock which made it even harder for us to reflect"*

There were also comments on the irritation of the coach. The feeling of irritation of a participant not moving forward in the programme caused some feeling of worry of own actions.

> *"Why do I feel irritated? Can they see it from me? I have said that everything is voluntary so why do I feel to say it´s not. I was irritated before the meeting because the participant hadn´t listened podcasts according to schedule. The participant had a good*

reason and we had excellent conversation after we solved that out. Maybe I should take this as a lesson from ACT: I can see that I´m irritated, I can still act differently and according to my values to help people"

There was also a period of time where the coach had lots of things going on in his personal life (moving to a new apartment and working in two companies). At that time, the effort put in coaching decreased. The reactions of the participants were concerning the coach afterwards.

"Today the participant wrote to me: "Great to hear from you! I thought you had disappeared!""

"I have noticed that if the coach hasn´t been around for the participants, it has effect to others but not everybody. Have I´ve been able to teach them how to proceed? This programme doesn´t last forever, what could I do to help them?"

There was also mentions about the technical problems which affected to conversations especially with one of the participants. In the beginning, the app had minor problems that caused extra work but after it everything was perceived to work smoothly. The instant messaging service -problems were mentioned few times in journal. The participants were often participating the meetings using their work-computers and the instant messaging service offered by the company was sometimes interrupting conversations.

During the programme, the company which participants were working, was acquired. The journal included many notions about the many questions and unawareness among the participants when the acquisition emerged.

6.2.2 Interviews

Interviews were organized after the last meeting by the researcher-coach. It involved semi-structured questions about the programme. When asking how the participants perceived the programme, everyone had positive picture about it. Many of them described that it fitted their

situation in life and had positive impact on it. They appreciated the length and structure of the programme. It was perceived to be long enough to make sustainable changes and focusing on one subject at a time helped them to reach their goals. It was also said that the programme was comprehensive. Increase in self-awareness was also mentioned. In addition, the meetings with the coach were perceived in a positive way.

> *"The programme was a great driver for change" (Pirjo)*

> *"Self-awareness has increased. In the long run it affects that I think myself as a whole" (Antti)*

> *"The programme was interesting and brought up good perspectives. Interesting things and kicked me onwards" (Antero)*

In the beginning of the programme, there was confusion about how the programme and coaching works, but it was perceived to be positive in the end.

> *"First I thought there would be more of telling what to do. But it was good when I had wake up myself. Maybe I was more committed when I had to think myself what to do. When I was writing a journal, I noticed what could I try" (Marjatta)*

> *"I feel that the programme was logical, not imposing. It was more like: we have thought and studied this, and you can change your life in better direction like this. But it´s up to you and you can be yourself" (Pirjo)*

Although the app was felt to be a good tool for majority of the participants, three people also mentioned downsides: the app increased their screen time. One participant reported that did not like to use the app and stopped it after few weeks but still continued the programme with the coach. He liked the idea of doing changes in sprints and focusing on one area of wellbeing at a time and setting goals with coach.

"I had mixed feelings when listening a podcast at night where they say to not to use devices at night" (Pirjo)

"I didn´t like the app, daily tips and notifications were even irritating" (Ville)

The content of the app was said to be good by the majority of the participants. One subject told that nutrition-podcasts would need developing. One participant mentioned that people in the podcasts were "superhumans" and it was not easy to relate to them.

When asking about changes in participants health behavior majority of them mentioned at least one changed health behavior. They mentioned they had become more aware of their behavior, increased their physical activity, slept more, changed nutrition habits, worked less in the evening times and had more energy after work. One mentioned the biggest change was drinking more water which was perceived as huge impact in participant´s life. Many of participants said that programme was "merciful" and "just a little more" -thinking was great aspect of the programme.

Five of the participants said they had more PA and four of them said they had not used elevator since the programme started if it was possible to take the stairs. Six of the participants said they had made changes in their nutrition. Five of them said they had taken better care of their sleeping.

"There has been lots of little changes during the programme without even noticing" (Marjatta)

"The best thing is when you go to bed early, you woke up automatically without alarm" (Antti)

"I´ve noticed that everything is between my ears. I´ve become aware of my own time of resistance to change and it is about 2-3 weeks. When I´ve noticed that it´s not a long time, the habit formation comes a lot easier" (Pirjo)

One of the subjects said that there was not changes, but he had been living healthy life before the programme.

When asking the participants' opinion if the programme has had effects to their working life, five of them said yes, one that it had indirect effect and two thought it had not had any effect to their working life. Many of them mentioned that sleeping more had effects to their working.

> *"maybe the effect can be seen when I sleep more, I´m able to perform better and I´m in better mood at work" (Jesse)*

> *"I´m in a good mood at work and somehow I have more relaxed way of doing things. Joy of work and the way I respond to things have changed" (Pertti)*

> *"When I sleep more, I am cooler at the office. I get rid of work more easily when I´m off work. I´m more switched-on when I have recovered well" (Pirjo)*

One of the things the participants said affected their behavior, was planning.

> *"When I pack my things in the evening before, I usually go to gym. Because of this, I don´t stay late at work" (Marjatta)*

> *"You start to think the day before or Sunday evening the programme of the week. Planning the things ahead has made a difference that there are not so much sudden things that I need to react." (Antti)*

The participants did not feel that their involvement in the programme had changed their peers who were not involved. Only stair climbing was mentioned few times. Participating the programme had also caused some envyness on their peers.

"It´s really hard to say if it has effects to my colleagues. Maybe. You can see it a little when I take the stairs, and someone follows me" (Pertti)

"I have noticed that some of my peers has followed me when I take the stairs. It has also caused some envyness when I´ve told about the programme" (Jesse)

When asking about the technical side of the programme six of them felt the app and other systems were handy to use and they supported the coaching.

"Zoom worked fine, like skype" (Ville)

"Once we had troubles with zoom and we used phone instead" (Jesse)

They also had some development ideas:

"There could be a computer-version of the app. It was hard to write longer text with your phone" (Antero)

"The scheduling system was easy to use itself, but it would be nice if you could do everything from the same system" (Ville)

"Could there be different levels in PA-videos? Some of them were hard to perform" (Pirjo)

"It would have been easier to do it in Finnish" (Marjatta)

"There could have been a possibility to copy PA-activities, when I had recurring performances which I could have easily just copied. When I bought apple watch during the programme, it helped a lot when everything went straight to app" (Pirjo)

"Maybe you [coach] could have used the chat more" (Pertti)

"The people in podcasts feel to be "superhumans. It´s hard to relate"

Every one of the participants perceived the meetings with the coach positively. There could have been more of the meetings, at least in the beginning. One of the participants brought up that the group chat could have been more used by the coach.

"They were good. They were individual. Your interest came across genuinely. Good sessions" (Antti)

"Meetings were great! I liked them because the things were talked through and otherwise, I would just leave them" (Helena)

"They made me to think stuff" (Marjatta)

All but one participant had positive picture about the meetings been held via zoom and not face-to-face. The participants perceived that it was as good as face-to-face or even better when one did not have to travel anywhere to have a meeting. There were more technical troubles with one of the participants and face-to-face-meetings would have been better in his opinion. The easier cancellation policy in remote meetings was mentioned. If one would have to travel somewhere to the meetings, it would probably raise the bar for cancellation.

All but one of the participants perceived that the programme was effortless to carry out. One participant who felt the programme harder to perform described things about research-questionnaires which made the programme burdensome to carry out and not the actual intervention programme.

"I felt this programme interesting the whole time" (Pirjo)

"[Participating was] Real easy. Probably because the changes happened little by little. There was time to assimilate" (Marjatta)

Every one of the participants perceived their future after the programme positive and described carrying on what they have learned or done during the programme. They mentioned the possibility of conducting the programme again and listening the podcasts once more.

"I´ve been very performance centered and the programme has helped me to realize that I don´t have to measure everything but I can enjoy the doing itself" (Pertti)

"I´ve realized, I don´t have to perfect. 80-20 rule" (Pertti)

All of the participants would have recommended the programme for their friends and some of them had already done that. Participants thought the programme would fit to anyone who is interested to participate. One participant mentioned the costs of the programme.

"These [programmes] are not free and I´ve thought that if this wasn´t free, how much would I have paid to have this. If it would have come from my pocket, I probably wouldn´t have paid. If we don´t talk about the money, I would definitely recommend this to anyone." (Antti)

When asking if they wanted to add something in the end of the interview, many of them were grateful that they had a chance to participate in the programme.

"It was nice that I could participate. It´s been the expedition to yourself. I wouldn´t have done this by myself" (Helena)

"Thank you so much that I´ve been able to participate. I´ve really liked this. There is so much in this programme what makes you think. Philosophical side which makes everything more fun" (Pertti)

“I will miss the programme. There hasn´t been a moment that “never again”. In other programmes it´s always been like “great, now I can get rid of this.” (Pirjo)

7 DISCUSSION

The aim of this study was plan, implement and evaluate a seven-month remote wellness-programme for office-workers. This chapter discusses the results by research question at a time. The limitations and future considerations are also reviewed.

The program experience by the participants and the researcher-coach

According to this study, the programme was perceived very positively by every participant who finished the programme and it was found useful in forming healthy habits. This led to better perceived wellbeing. The acceptance of the programme was high according to quantitative analysis and interviews were supporting these results. This is in concordance with the literature in the app usage (Payne 2015). The engagement in the programme was also in good level which dissimilates with earlier literature (Buckingham et al. 2019). Although, this programme had more features than apps in Buckingham et al.'s (2019) review. Also, the coach´s motivation for coaching is shown from the qualitative analysis.

The programme was considered to be pleasant and feasible to conduct. However, two of the participants pulled out from the study for personal reasons. Those participants may have perceived the programme too burdensome to carry out. The results in questions such as "learning increased understanding of the topic", "learning tangible matters" and "getting tools to improve matters on the topics in the programme" were good (over 5 out of 7) but in lower level than in other questions. The participants described obtaining ideas from the podcasts but some of them reported that the content of the audio lessons was too familiar for them. Therefore, it was perceived that receiving new knowledge was not so important in this programme but how to change behavior. The nutrition-sprint was a good example of this. Although, the nutrition-sprint was perceived the least attractive sprint, six of the participants reported a changed behavior in that area. One of the participants described that when one knows lots about nutrition, the audio lessons can feel useless and that may have been the reason for the lower scores in nutrition-sprint.

The second sprint had the lowest scores on the acceptability -questionnaire. This may have been due to the burst of the first sprint and then a downshift after that. Also, there was a downshift on coaches work on second sprint and which might have affected on the results. During the time, the participants were concerned about the situation: “I was worried where the coach is?”. If the lower scores were due to downshift of the coach, the role of a coach might be thought essential for this kind of coaching. This view was supported by one participant who stopped using the BLA but still continued the programme with the coach.

The BLA was stated to be supporting by majority of the participants. Although, some of the podcasts were perceived valueless depending of the earlier knowledge of the subject on the topic. Even though the app was perceived supporting, the participants had development ideas to advance it further. The biggest disadvantage in the use of BLA was increased screen time. It caused mixed feelings because the aim was to decrease screen time. There were no technical problems in the meetings except with one of the participants. Both, the coach´s journal and the interview with a person were describing it. In a remote coaching, working technique is essential. Other software used in the programme was well accepted.

The participants stated that there was no difference between computer-mediated communication compared to face-to-face-meetings. Due to co-worker -role, coach and the participants had seen each other face-to-face at least once before the study started. This differs from Better Life -coaching which is usually conducted without face-to-face -meetings. This research is in accordance with earlier literature with computer-mediated communication working as well as face-to-face -meetings when one has already bound a tie with fellow communicator (Denstali et al 2013). Also, the fact that keeping meetings with the advisor can make the programme better functioning (Webb et al 2010; Dunkl & Jimenez 2017) was supported.

Meetings with the coach were perceived useful by the participants. The participants stated that there could have been more meetings at least in the beginning of the programme. Coaching experience was similar. From coach´s perspective, there was a feeling of excitement and nervousness before the study, but it was perceived positive and leading to better results. The

coach perceived that in a new situation help, tips and support from colleagues and peers to develop coaching are beneficial. The coach´s journal was experienced to be a good tool to keep on track and obtain new ideas. Although, in busy times, it was forgot easily. The more the programme progressed, the more confident the coach felt in the meetings. That was helping the coach to conduct the meetings better and with open mind. The framework of the meetings was done beforehand, but it was noticed that giving room for floating conversation led to better results than following the framework with discipline. However, it led to troubles in time management and proper combine with free conversation and time tracking should be found. The role of a coach / co-worker was troubling the coach especially in the beginning of the programme but was not perceived to lead any insurmountable barriers.

The participants discovered that when there were no direct commands given, the more committed they were changing their behavior. That increased thinking of their own situation in life and what could be done differently. This reinforces the Brannon et al (2015) view, that giving instructions will have negative impact on interventions. All of the participants would have recommended the programme for their friends or colleagues which indicates that they perceived the programme beneficial for them and their wellbeing.

Change of the health habits during the programme

In this research, the SRHI showed upgoing trend through the programme. There was a plateau after second and third measuring point which according to Lally et al. (2010) describes a formed habit. Although, at the last measuring point, all the scores were still increasing. Thus, the habit formation happened after 80 days the programme begun (vs. 66 days by Lally et al. (2010); 6-9 weeks by Walter (2017)). When comparing the results to literature with one area of wellbeing, the half of the participants formed healthy habits similar to Lally et al. (2010). However, every participant formed some healthy habits because the programme was holistic and not intervening just one aspect of wellbeing.

The scores in SRHI were high already in the beginning of the programme (> 21, which is a cut for a habit to form (Lally et al. (2010)). The participants may have already had healthy habits

in the areas of the programme. Standard deviation of SRHI was high, which describes that people were different looking from the wellbeing perspective used in this programme. This was deliberate on participants selection. The original questionnaire was in English and translation to Finnish may have affected to results (appendix 7.) Also, the questions were hard to from. SRHI was also very laborious to fill. Each participant filled out 5*12 questions five times in total (at the beginning and after every sprint) during the programme. It may have affected their motivation to response every question with thought and time. One of the participants perceived the programme laborious because of questionnaires. Hagger et al. (2015) question the use of SRHI because of its subjective nature. They argue if people themselves can assess a habit formation.

There was a upgoing trend in PA in the results of SRHI and the view was supported by the interviews. Like in previous research, also this study confirmed that walking was effective way to increase PA (Direito et al. 2014; Walsh et al. 2016). In this study, walking and climbing stairs was reported to become a habit during the programme. Many of the participants stated that they did not use escalator after they begun the programme. In addition, to increase participant´s PA, by choosing stairs, participants might have encouraged other employees, that were not part of the intervention to increase their physical activity (vs. Webb 2011). Few of the participants reported their peers behaving this way.

Surprisingly, Biomechanics had the highest level in SRHI. Assumption before the study were that office workers would have both neck and shoulder - and lower back -problems. The question in biomechanics was more about taking care of the whole musculoskeletal system to be able to perform daily tasks and not a question about a neck pain. Some of the participants described to have these problems but it seemed not to be common among the participants, so the interviews backed up the phenomenon seen from SRHI.

According to SRHI, the habits in healthy eating and taking care of getting enough sleep and recovery increased or became sustained. Also, taking care of the balance of their life was in higher level in the end of the programme than in the beginning (Figure 9). The participants stated that the programme and the sprints were long enough to assimilate the information and

make more sustainable changes. As a conclusion, the trend was very positive on habit formation and participants had positive direction during the programme on forming healthy habits.

Participants´ perception of the effects of the BLA-programme on their life, working experience and well-being

The increased Better Life -score indicated that the participants perceived their well-being to increase during the programme. The assessment was built in a way that a respondent could see the earlier results and that might have affected to their response tendency. The Better Life – survey was organized before and after the 7-month programme and might have been more objective measurement. Although, the trend was similar between the two questionnaires and participants perceived their well-being increasing during the programme on both of the questionnaires.

The study supported the earlier research about self-monitoring and planning to be key aspects to behavior change (Mailey et al. 2016; Michie 2009; Sniehotta 2006). In accordance with earlier literature (Kaushall 2017; Gardner 2019), planning and preparatory work was effective to change behavior in this study also. Packing the gym clothes the night before or planning the calendar with reminders, helped the participants to pursue their goals.

One of the programme motto was that "No one is perfect, but anyone can be a little better, one day at a time". The findings (Table 3.) in this study supported the view that small changes done by sufficient time and focusing on one matter at a time are useful. Participants supported this view in interviews. They perceived that all the small things done in a day have positive effects to their overall wellbeing which affects to their life and working experience positively. Also, this study stated that the changes in one area of wellbeing could be useful making changes in other areas easier to perform. The programme was also mentioned "merciful" and behavior changes were easier to make because the smaller alteration. Recently published new health recommendations in PA in Finland are guiding people to same direction (UKK-instituutti 2019).

The outcomes of this research imply that holistic coaching programme can work better than focusing on just one area in wellbeing. This study suggests also the findings that programmes supported by science and programmes using BCTs would be more functional than the apps without these (Grist et al. 2017; van Mechelen et al. 2014; Modave et al. 2015).

Limitations

The most prominent limitation of the current study is the small number of the participants; hence the results have to be interpreted with caution.

Also, the multiple roles of the coach is a limiting factor. The role of a co-worker could have affected to a level of conversation between the participant and the coach /co-worker. The confidentiality was emphasized during the meetings, but it might not have been easy to open up to a colleague. The researcher being also the coach could have affected to participants' feedback of the programme, especially the ones dealing with the coaching meetings. Also, one factor is that during the programme, the coach started working for the company who offered the wellbeing programme for the participants. This could be seen conflicting and especially interpretation of the qualitative data could be biased because of that. Although, the results were tried to analyze objectively and with the researcher´s point of view. They were analyzed with the principle that objective interpretation of the results would be the most beneficial to everyone involved in the study.

The acquisition of the company, where the participants worked during the programme, might have had an impact to participants during the programme. Unawareness of the situation in the company and their role in the future were affecting to some of the participant's mental energy negatively.

Future considerations

This was an acceptability and feasibility study. With larger number of participants, it would be interesting to research the effectiveness of the programme in a randomized controlled study and

measure objectively physical activity, sleep, general health, days off from work and so on. Also, follow up after the programme would be fascinating to study. Also, it might be interesting to compare setup used in this study to a programme conducted without the coach and further, programme without the app still keeping the idea of sprints in the background. Additionally, it would be interesting to conduct a research with independent coach.

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Appendix 1. Behavior change taxonomy

BCT Taxonomy (v1): 93 hierarchically-clustered techniques

Page	Grouping and BCTs
1	**1. Goals and planning**
	1.1. Goal setting (behavior) 1.2. Problem solving 1.3. Goal setting (outcome) 1.4. Action planning 1.5. Review behavior goal(s) 1.6. Discrepancy between current behavior and goal 1.7. Review outcome goal(s) 1.8. Behavioral contract 1.9. Commitment
3	**2. Feedback and monitoring**
	2.1. Monitoring of behavior by others without feedback 2.2. Feedback on behaviour 2.3. Self-monitoring of behaviour 2.4. Self-monitoring of outcome(s) of behaviour 2.5. Monitoring of outcome(s) of behavior without feedback 2.6. Biofeedback 2.7. Feedback on outcome(s) of behavior
5	**3. Social support**
	3.1. Social support (unspecified) 3.2. Social support (practical) 3.3. Social support (emotional)
6	**4. Shaping knowledge**
	4.1. Instruction on how to perform the behavior 4.2. Information about Antecedents 4.3. Re-attribution 4.4. Behavioral experiments
7	**5. Natural consequences**
	5.1. Information about health consequences 5.2. Salience of consequences 5.3. Information about social and environmental consequences 5.4. Monitoring of emotional consequences 5.5. Anticipated regret 5.6. Information about emotional consequences
8	**6. Comparison of behaviour**
	6.1. Demonstration of the behavior 6.2. Social comparison 6.3. Information about others' approval
9	**7. Associations**
	7.1. Prompts/cues 7.2. Cue signalling reward 7.3. Reduce prompts/cues 7.4. Remove access to the reward 7.5. Remove aversive stimulus 7.6. Satiation 7.7. Exposure 7.8. Associative learning
10	**8. Repetition and substitution**
	8.1. Behavioral practice/rehearsal 8.2. Behavior substitution 8.3. Habit formation 8.4. Habit reversal 8.5. Overcorrection 8.6. Generalisation of target behavior 8.7. Graded tasks
11	**9. Comparison of outcomes**
	9.1. Credible source 9.2. Pros and cons 9.3. Comparative imagining of future outcomes
12	**10. Reward and threat**
	10.1. Material incentive (behavior) 10.2. Material reward (behavior) 10.3. Non-specific reward 10.4. Social reward 10.5. Social incentive 10.6. Non-specific incentive 10.7. Self-incentive 10.8. Incentive (outcome) 10.9. Self-reward 10.10. Reward (outcome) 10.11. Future punishment
15	**11. Regulation**
	11.1. Pharmacological support 11.2. Reduce negative emotions 11.3. Conserving mental resources 11.4. Paradoxical instructions
16	**12. Antecedents**
	12.1. Restructuring the physical environment 12.2. Restructuring the social environment 12.3. Avoidance/reducing exposure to cues for the behavior 12.4. Distraction 12.5. Adding objects to the environment 12.6. Body changes
17	**13. Identity**
	13.1. Identification of self as role model 13.2. Framing/reframing 13.3. Incompatible beliefs 13.4. Valued self-identify 13.5. Identity associated with changed behavior
18	**14. Scheduled consequences**
	14.1. Behavior cost 14.2. Punishment 14.3. Remove reward 14.4. Reward approximation 14.5. Rewarding completion 14.6. Situation-specific reward 14.7. Reward incompatible behavior 14.8. Reward alternative behavior 14.9. Reduce reward frequency 14.10. Remove punishment
19	**15. Self-belief**
	15.1. Verbal persuasion about capability 15.2. Mental rehearsal of successful performance 15.3. Focus on past success 15.4. Self-talk
19	**16. Covert learning**
	16.1. Imaginary punishment 16.2. Imaginary reward 16.3. Vicarious consequences

Appendix 2. Invite for the study

Mukaan tutkimukseen?

[redacted] tarjoaa mahdollisuuden lähteä mukaan tutkimukseen, jossa tutkitaan digitaalisen hyvinvointivalmennuksen vaikuttavuutta toimistotyötä tekevien parissa. Valmennus perustuu Hintsa Performancen hyvinvointimalliin.

Kyseessä on n. puolen vuoden valmennusohjelma, jossa viikoittain vaihtuvien teemojen avulla käydään Hintsan hyvinvointimallia läpi heidän lanseeraamansa Better Life –puhelinsovelluksen avulla. Valmennusohjelmaan kuuluu myös kuukausittainen tapaaminen valmentajan kanssa videon välityksellä. Puhelinsovellus on englanninkielinen, mutta valmentajatapaamiset voidaan käydä suomeksi. Lisätietoja valmennusohjelmasta löydät Hintsa Performancen sivuilta: https://www.hintsa.com/services/better-life/.

Tutkimus kuuluu Jyväskylän yliopistossa tehtävään pro gradu –tutkimukseen. Se on tarkoitus aloittaa loka-marraskuussa ja mukaan pääsee 6-10 [redacted]. Mukaan halutaan henkilöitä mahdollisimman erilaisilla taustoilla, joten juuri Sinä olet oikea henkilö hakemaan ohjelmaan. Ainoa valintakriteeri on, että olet motivoitunut puolen vuoden valmennusohjelmaan. Tutkimus vaatii sinulta kerran viikossa n. 10-15min podcastin kuuntelua sekä oman toiminnan reflektointia ja kerran kuukaudessa n. tunnin valmentajatapaamisen. Valmennukseen käytetty aika ei kuulu työaikaan. Vastapalveluksena saat käyttöösi Hintsan Better Life –sovelluksen ja valmentajan, paljon tieteellisesti tutkittua tietoa hyvinvoinnin eri osa-alueista sekä käyttäytymisen muutoksesta. **Tutkijana ja valmentajana tutkimuksessa toimii [redacted] Samppa Karvinen. Kaikki valmennuksessa käytävät keskustelut ja kerättävät tiedot ovat luottamuksellisia.** Tutkimuksesta valmistuva pro gradu -työ on julkinen, mutta henkilökohtaisia tuloksiasi tai valmentajan kanssa käymiäsi keskusteluja ei raportoida kenellekään. Tutkimusasetelman takia tutkimukseen ei voida valitettavasti ottaa mukaan [redacted] työskenteleviä (tarkoitus tutkia mm. etäohjausta).

Jos kiinnostuit, lähetä muutaman lauseen motivaatiokirje 16.9.2018 mennessä Samppa Karviselle sähköpostitse osoitteeseen [redacted]. Kerro kirjeessäsi, miksi juuri sinä haluaisit mukaan tutkimukseen. Tutkimukseen valituille ilmoitetaan ohjelmaan pääsystä 30.9.2018 mennessä

Appendix 3. The notice of privacy and data protection

Tietosuoja-asetus (679/2016) 12-14, 30 artikla

TIETOSUOJAILMOITUS TUTKIMUKSESTA TUTKIMUKSEEN OSALLISTUVALLE

Gradut ja kandidaatintutkielmat

30.11.2018

Tutkimukseen osallistuminen on vapaaehtoista, eikä tutkittavan ole pakko toimittaa mitään tietoja, tutkimukseen osallistumisen voi keskeyttää.

1. Tutkimuksen nimi, LUONNE JA kesto

Tutkimuksen nimi on Hyvinvointivalmennusohjelma toimistotyöntekijöille (Holistic wellbeing programme for office workers). Kyseessä on yksittäinen tutkimus, joka alkaa joulukuussa 2018 ja kestää kesäkuuhun 2019. Tutkimustulokset valmistuvat vuoden 2019 loppuun mennessä.

2. mihin henkilötietojen käsittely perustuu

EU:n yleinen tietosuoja-asetus, artikla 6, kohta 1

☐ **Tutkittavan suostumus**

3. Tutkimuksesta vastaavat tahot

Tutkimuksen tekijä: Samppa Karvinen, [redacted].

Tutkimuksen ohjaaja: Professori Taru Lintunen, Urheilu- ja liikuntapsykologi (sert.) PL 35, 40014 Jyväskylän yliopisto, sähköposti: taru.lintunen@jyu.fi, puh.numero: +358408053960

4. Tutkimuksen tausta ja tarkoitus

Tämän tutkimuksen tarkoituksena on suunnitella, toteuttaa ja arvioida hyvinvointivalmennusohjelma ja tutkia toimistotyöntekijöiden kokemuksia ohjelmasta. Ohjelma sisältää puolen vuoden etävalmennusohjelman ja kuukauden välein valmentajan tapaamisen online-välitteisesti. Tutkimuksesta saadaan tietoa valmennusohjelman koetusta toimivuudesta toimistotyöntekijöillä sekä koetuista vaikutuksista eri elämän osa-alueilla (työ/vapaa-aika). Lisäksi on tarkoitus selvittää miten valmentaja kokee toimimisen valmennusohjelmassa.

Osallistujilta kerätään tietoa kyselyin ja haastatteluin. Haastattelut nauhoitetaan. Tutkijat vastaavat tutkimusaineiston säädösten mukaisesta turvallisesta säilyttämisestä. Aineisto anonymisoidaan, ettei koehenkilöiden nimeä pysty tunnistamaan aineistosta.

Osallistujat saavat käyttöönsä Hintsan Performance Oy:n valmennusohjelman ja tätä varten heidän henkilötietonsa (nimi, mailiosoite) kerätään ohjelmaa kuuluvaa puhelinsovelluksen aktivointia varten. Lisäksi osallistujat voivat merkitä sovellukseen erilaisia tapahtumia kuten fyysinen aktiivisuus, unen määrä, paino, päiväkirjamerkinnät sekä chat-keskustelut valmentajan kanssa. Nämä tiedot tallennetaan Hintsan palvelimille. Henkilötietojasi ei pääse katsomaan kuin ohjelman valmentaja. Hintsan tietosuojailmoitus löytyy osoitteesta: https://www.hintsa.com/yksityisyys/

Lisäksi koehenkilöiltä mitataan Firstbeat-hyvinvointianalyysin avulla sykedataa, joka säilytetään Firstbeat Technologies Oy:n tietokannassa. Firstbeat kerää nimitiedot ja sähköposti-osoitteen. Firstbeat Technologies Oy:n tietosuojailmoitus löytyy osoitteesta: https://www.firstbeat.com/fi/tietosuoja/

Kyselyihin käytetään webropol-ohjelmistoa. Osallistujille jaetaan ennen vastaamista oma id-numero, jolloin nimitietoja ei tarvitse käyttää kyselyihin vastatessa eikä tunnistaminen ole mahdollista kuin tutkimuksen tekijällä.

Tutkimukseen osallistuvat henkilöt ovat IT-yhtiön työntekijöitä ja tutkimukseen osallistuu n. 10 henkilöä.

Tutkimuksessa on välttämätöntä käsitellä nimi- ja biografisia -tietoja tutkimuksen onnistumiseksi. Tietoa säilytetään excel- ja SPSS-taulukoissa, kuva-tallenteina, haastattelulitterointeina ja muistiinpanoina. Lisäksi em. yhtiöt säilyttävät tietoja omissa tietokannoissaan.

5. Tutkimuksen toteuttaminen käytännössä

Tutkimukseen osallistuminen kestää noin 7 -8 kuukautta (7kk valmennusohjelma + loppuhaastattelut).

Tutkimukseen sisältyy puhelinsovelluksen päivittäinen käyttö, kuukausittaiset etävalmennustapaamiset (yht. 7 kertaa), joiden yhteydessä vastataan kyselyihin sekä loppuhaastattelu.

6. Tutkimuksen mahdolliset hyödyt ja haitat tutkittaville

Tutkittavat pääsevät osallistumaan uudenlaiseen etävalmennusohjelmaan. He voivat tulla tietoisemmaksi itsestään ja terveystottumuksistaan. Lisäksi he saavat tietoa stressin ja palautumisen tasapainosta ja liikuntasuoritusten vaativuudesta.

Tutkimuksessa käytettävät menetelmät ovat turvallisia eikä niistä koidu osallistujille fyysistä haittaa. Firstbeat hyvinvointianalyysin mittausvaiheessa iholle voi syntyä ihottumaa, johtuen elektrodien liimapinnasta.

7. Henkilötietojen suojaaminen

Tutkimuksessa kerättyjä tietoja ja tutkimustuloksia käsitellään luottamuksellisesti tietosuojalainsäädännön edellyttämällä tavalla. Tietojasi ei voida tunnistaa tutkimukseen liittyvistä tutkimustuloksista, selvityksistä tai julkaisuista. Loppuhaastattelussa saatua aineistoa voidaan käyttää tutkimuksessa anonyymisti sitaatein ilmaistuna.

Tutkimusaineistoa säilytetään tutkimuksen aikana em. palvelimilla, tutkimuksen tekijän suojatulla ja salatulla työasemalla sekä Jyväskylän yliopiston suojatussa verkossa.

Tutkimustuloksissa ja muissa asiakirjoissa sinuun viitataan vain tunnistekoodilla.

Tutkimusaineistoa säilytetään Jyväskylän yliopisto tutkimusaineiston käsittelyä koskevien tietoturvakäytänteiden mukaisesti.

8. Tutkimustulokset

Tutkimuksesta valmistuu opinnäytetyö.

9. Tutkittavan oikeudet ja niistä poikkeaminen

Tutkittavalla on oikeus peruuttaa antamansa suostumus, kun henkilötietojen käsittely perustuu suostumukseen. Jos tutkittava peruuttaa suostumuksensa, hänen tietojaan ei käytetä enää tutkimuksessa.

Tutkittavalla on oikeus tehdä valitus Tietosuojavaltuutetun toimistoon, mikäli tutkittava katsoo, että häntä koskevien henkilötietojen käsittelyssä on rikottu voimassa olevaa tietosuojalainsäädäntöä. (lue lisää: http://www.tietosuoja.fi).

Tutkimuksessa ei poiketa muista tietosuojalainsäädännön mukaisista tutkittavan oikeuksista.

7.1 Henkilötietojen säilyttäminen ja arkistointi

Henkilötiedot säilyvät em. palvelimilla em. yhtiöiden määrittämän ajan.

Tutkimuksessa tarvittavia henkilötietoja säilytetään tutkimuksen tekijän salatulla ja suojatulla työasemalla, kunnes tutkimus on päättynyt ja opinnäytteen valmistuminen sitä edellyttää. Tutkimustuloksia käsitellään anonymisoituna. Tämän jälkeen aineisto hävitetään.

10. Rekisteröidyn oikeuksien toteuttaminen

Jos sinulla on kysyttävää rekisteröidyn oikeuksista voit olla yhteydessä tutkimuksen tekijään.

Appendix 4. The consent form

SUOSTUMUS TIETEELLISEEN TUTKIMUKSEEN

Minua on pyydetty osallistumaan tutkimukseen Hyvinvointivalmennusohjelma toimistotyöntekijöille.

Olen perehtynyt tutkimusta koskevaan tiedotteeseen (tietosuojailmoitus) ja saanut riittävästi tietoa tutkimuksesta ja sen toteuttamisesta. Tutkimuksen sisältö on kerrottu minulle ja olen saanut riittävän vastauksen kaikkiin tutkimusta koskeviin kysymyksiini. Selvitykset antoi Samppa Karvinen. Minulla on ollut riittävästi aikaa harkita tutkimukseen osallistumista.

Ymmärrän, että tähän tutkimukseen osallistuminen on vapaaehtoista. Minulla on oikeus, milloin tahansa tutkimuksen aikana ja syytä ilmoittamatta keskeyttää tutkimukseen osallistuminen tai peruuttaa suostumukseni tutkimukseen. Tutkimuksen keskeyttämisestä tai suostumuksen peruuttamisesta ei aiheudu minulle kielteisiä seuraamuksia.

En osallistu mittauksiin flunssaisena, kuumeisena, toipilaana tai muuten huonovointisena.

Olen tutustunut tietosuojailmoituksessa kerrottuihin rekisteröidyn oikeusiin ja rajoituksiin.

Allekirjoittamalla suostumuslomakkeen hyväksyn tietojeni käytön tietosuojailmoituksessa kuvattuun tutkimukseen.

☐ Kyllä

Allekirjoituksellani vahvistan, että osallistun tutkimukseen ja suostun vapaaehtoisesti tutkittavaksi sekä annan luvan edellä kerrottuihin asioihin.

_____ _____

Allekirjoitus *Päiväys*

_____ _____

Nimen selvennys *Syntymäaika*

_____

Osoite

Suostumus vastaanotettu

_____ _____

Suostumuksen vastaanottajan allekirjoitus *Päiväys*

_____

Nimen selvennys

Alkuperäinen allekirjoitettu asiakirja jää tutkimuksen vastuullisen johtajan arkistoon ja kopio annetaan tutkittavalle. Suostumusta säilytetään tietoturvallisesti niin kauan kuin aineisto on tunnisteellisessa muodossa. Jos aineisto anonymisoidaan tai hävitetään suostumusta ei tarvitse enää säilyttää.

Appendix 5. The interview questions after the programme

- Mitä mieltä olit ohjelmasta? (How did you feel about the programme?)
- Oliko ohjelmassa jotain mikä toimi hyvin? Entä jotain mitä pitäisi muuttaa?
- Onko terveyskäyttäytymisesi muuttunut ohjelman aikana? Jos niin millä tavalla? Vaikuttiko muutokseen ohjelma vai joku muu asia elämässäsi? (Do you feel you have changed your health behavior? If, how?)
- Oletko omaksunut terveystottumuksia, joista on tullut tapa tämän ohjelman aikana? (Have you obtained health habits?)
- Onko työelämässäsi tapahtunut muutoksia ohjelman aikana? Jos niin mitä ja onko ohjelma vaikuttanut niihin?
- Miten näet tulevaisuuden nyt ohjelman jälkeen? (How do you see the future after the programme?)
- Suosittelisitko ohjelmaa ystävillesi? Jos, miksi? (Would you recommed the programme for others? Why?)
- Onko vielä jotain mitä haluaisit sanoa? (is there someting else you would like to add?)

Appendix 6. Acceptability questionnaire after every sprint / programme

- Pidin edellisestä sprintistä? (lopuksi ”ohjelmasta”)? (I liked the ongoing sprint)
- Osallistuminen oli liian vaivalloista (Participating was too troublesome)
- Sprintin / Ohjelman sisältö oli helppo ymmärtää ja seurata (The sprint / programme was easy to understand and follow)
- Sprintti / Ohjelma onnistui lisäämään ymmärrystäni tämän sprintin aihealueesta (The sprint / programme managed to increase my understanding from the topic of the sprint)
- Opin konkreettisia asioita sprintin aihealueesta (I learned tangible matters from the topic of the sprint)
- Sain työkaluja sprintin aihealueen edistämiseen (I got tools to improve the matters on the topic of the sprint)
- Voisin suositella osallistumista sprinttiin / ohjelmaan kollegoilleni (I would recommend the sprint / programme to my colleagues)
- Tapaaminen valmentajan kanssa oli hyödyllinen minulle? (Meeting with the coach was useful to me)
- Avoin: Haluaisitko perustella jotain vastauksiasi? Kerro lisää: (Open question: Would you like to give reasons for your answers? Tell more:)
- Avoin: Yleiset kommentit (risut & ruusut) ohjelmasta. (Open question: Any general comments about the programme?)

Täysin eri mieltä 1-7 täysin samaa mieltä (Totally disagree 1 – 7 totally agree)

Appendix 7. Self Report Habit -Index -questions

Fyysisestä aktiivisuudesta huolehtiminen (Taking care of Physical Activity) / Riittävästä levosta huolehtiminen (Taking care of Sleep and Recovery) / Terveellisesti syöminen (Healthy eating) / Liikuntaelimistöni kunnosta huolehtiminen (valmius suorittaa päivittäisiä askareita) (Taking care of my musculosceletal system (be able to perform daily tasks) / Elämän eri osa-alueiden tasapainosta huolehtiminen (Taking care of balance of my life) …on jotain mitä (is something)

- … teen usein (… that I do frequenly)
- … teen automaattisesti (… that I do automatically)
- … teen ilman, että minun tarvitsee tietoisesti muistaa sitä (… I do without having to consciously remember)
- … tuntuu omituiselta, jos en tee sitä (... that makes me feel weird if I do not do it)
- … teen ilman miettimistä (… I do without thinking)
- …tarvitsisi ponnistelua etten tekisi sitä (... that would require effort not to do it)
- …kuuluu viikkorutiineihini (... that belongs to my weekly routine)
- …alan tehdä sitä ennen kuin itse asiassa tajuan jo aloittaneeni sen (... I start doing before I realize I´m doing it)
- …kokisin hankalaksi, jos en tekisi sitä (... I would find hard not to do)
- …on jotain, mitä minulla ei ole tarvetta ajatella etten tekisi sitä (... I have no need to think about doing)
- …on tyypillistä minulle (... that is typically “me”)
- …on jotain mitä olen tehnyt jo pitkään (…that I have been doing for a long time)

Täysin eri mieltä 1-5 täysin samaa mieltä (Totally disagree 1 – 5 totally agree)

Appendix 8. The statistics of acceptability questionnaire

Sprints by subject

	I consider this sprint pleasant	Participating was too troublesome	The sprint was easy to understand and follow	The sprint managed to increase my understanding from the topic of the sprint	I learned a number of tangible matters from the topic of the sprint	I got tools to improve the matters on the topic of the sprint	I would recommend the sprint to my colleaques	Meeting with the coach was useful to me
Nutrition	5,6	2,9	6,2	5,6	5,3	5,2	5,8	6,2
SD	1,3	1,9	0,7	1,6	1,5	1,7	1,0	0,7
Sleep & Recovery	6,2	2,0	6,1	5,6	5,6	5,8	5,9	6,0
SD	0,7	0,9	0,8	1,0	1,0	1,1	0,8	0,9
Biomechanics	6,3	1,9	6,1	5,6	5,3	5,4	5,8	5,9
SD	0,9	1,1	1,4	1,4	1,4	1,6	1,7	1,7
Mental Energy	6,1	2,8	6,0	6,0	5,5	5,8	6,1	6,4
SD	0,6	2,1	0,9	0,5	0,8	0,7	0,6	0,5
The whole programme	6,5	2,1	5,9	6,4	6,5	6,3	6,3	6,5
SD	0,5	2,1	1,7	0,7	0,8	0,7	0,9	0,8

Sprints in order

	I consider this sprint pleasant	Participating was too troublesome	The sprint was easy to understand and follow	The sprint managed to increase my understanding from the topic of the sprint	I learned a number of tangible matters from the topic of the sprint	I got tools to improve the matters on the topic of the sprint	I would recommend the sprint to my colleaques	Meeting with the coach was useful to me
Sprint 1	6,2	2,2	6,3	5,7	5,5	5,9	6,0	6,3
SD	0,9	1,3	0,7	1,3	1,3	1,3	0,9	0,7
Sprint 2	5,5	2,4	5,9	5,5	5,0	5,1	5,5	5,6
SD	1,3	1,4	1,4	1,7	1,5	1,8	1,6	1,6
Sprint 3	6,1	2,4	5,9	5,8	5,8	5,6	5,9	6,1
SD	0,6	1,6	1,0	0,9	0,9	1,1	0,8	0,8
Sprint 4	6,3	2,6	6,4	5,8	5,4	5,4	6,1	6,4
SD	0,7	2,2	0,5	0,7	0,9	1,1	0,6	0,7

Appendix 9. The statistics of SRHI questionnaire

	PA	S&R	Nutrition	Biomechanics	Mental energy
Beginning of the programme	40,2	37,8	40,3	40,9	35,3
SD	12,6	13,7	12,2	11,9	9,6
After 1st sprint	44,6	41,8	44,7	44,6	41,0
SD	10,1	11,8	11,2	6,6	9,2
After 2nd sprint	47,6	42,6	46,9	49,9	41,5
SD	6,3	8,9	10,6	6,3	11,6
After 3rd sprint	47,8	43,9	47,4	50,2	40,5
SD	7,5	11,1	6,8	6,5	10,2
End of the programme	49,8	47,3	49,8	52,6	47,9
SD	5,2	8,8	6,5	5,4	9,4