Building an effective short healthpromotion intervention
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In this thesis a body awareness program was developed, implemented and evaluated for chronic aspecific psychosomatic symptoms, using the theory driven approach. CAPS is defined here as individuals who suffer from medically unexplained physical and psychological symptoms for longer than three months.

In Chapter 2 the question is introduced of what theoretical model fits best to serve as a sound development and evaluation towards standardisation of a body awareness program for chronic aspecific psychosomatic symptoms. Theory-driven evaluation and participatory program planning was effectively used to design and evaluate the BAP and its underlying theory. The BAP was developed from initial thoughts or provisional theory to a theoretically embedded intervention. One of the problems that had to be faced is the complexity of tracing the causal path from designing an intervention to long-term health changes. The 3-day residential body awareness program became a standardised and effective intervention for CAPS. Techniques from bio-energetics, haptonomy and relaxation therapy are used in the BAP to increase body awareness, which is seen as the first goal that elicits a process in a chain of intervening mechanisms. Self-efficacy seems to play a crucial role as an intervening mechanism that affects the outcome of improved quality of life. The spiral of problems and symptoms can be broken through by this intervention and participants are more able to cope with stress and or psychosomatic symptoms, resulting in enhanced self-management.

Though balanced and pro-active participation and with the help of an internal evaluator, the BAP was standardised and better equipped for evaluation purposes.
In Chapter 3 the intended short-term outcome of the process and impact variables as described in the theoretical BAP model were tested. The design is a non-control group design with pre- and post-measures (2 months after the program). The sample for this research was formed by 187 participants. Mean age was 42.3 (SD=8.9), 57% female. The results showed the hypothesised effects: decreased stress-related symptoms, increased quality of life, increased self-efficacy, less depressive attribution style and a change of behaviour towards a more physically and socially active lifestyle. Most of these measured changes can be interpreted as clinically relevant outcomes with medium-to-large effect sizes. Personal pre-training goals were attained by 85% of the participants. Spouses also confirm the found effects. Evaluation of the BAP gives enough evidence to conclude that this program leads to positive short-term effects in CAPS. Participants react more adequately to disturbances between daily workload and the capacity to deal with this load. They are more capable of coping with stress and psychosomatic symptoms, resulting in more effective self-management.

Chapter 4 concentrates on the long-term effectiveness of self-efficacy, attribution style, expression of emotions and quality of life. A pre-post design is used with post-measures two and twelve months after the program, without controls (n=122). Mean age is 42.5 (SD=9.0) and 60% is female. Results show an increase of effectiveness twelve months after the program related to two months after the program, as described in Chapter 3. These observed reductions in psychological symptomatology are consistent with the findings of other researchers who have been studying enduring stress-reduction programs. Follow-up analysis showed that the positive changes after two months improved further at twelve months. This is an unusual and promising result because, in accordance with the transtheoretical model of behavioural change of Prochaska et al., lasting positive effects on psychological factors and quality of life need more than just one short 3-day program. The highest change was measured at two months with a little improvement at twelve months. As hypothesised, most of the measures on intervening and outcome variables showed significant and clinically relevant improvement at twelve months. Self-efficacy had a positive and significant correlation with quality of life as hypothesised in the BAP model.

In Chapter 5 the improvement of balance between work stress and recovery at two and twelve months after the BAP was assessed on the same population and with the same research design as described in Chapter 4. Results show that participants become more active physically and socially, and at the same time take the opportunity to recover. The balance became 'more flexible', which means that participants experienced more behavioural alternatives in handling daily stress. Reintegration was improved and absenteeism decreased. Personal pre- and post-training, all pointing in the direction of changing behaviour in a positive way, were realised by 92% of the participants. Realising personal goals and becoming more active seems to be a mediating factor for increasing quality of life. Participants react more adequately to disturbances between daily workload and the capacity to deal with this load. Two and twelve months after the 3-day program, they changed their behaviour towards a more active lifestyle and increased self-management in coping with stress and psychosomatic symptoms. Spouses confirm these results.

Chapter 6 handles the cost-effectiveness of the BAP. This research gives some indication of cost reduction on direct (medical) as well as indirect costs for employers. Medication use
and doctor consultations decreased. Reintegration to work was promoted, and absenteeism and work disability costs decreased. An estimate for the reduction in direct costs for health insurance companies is €3045 a year (an average of €25 per individual). On indirect costs, approximately €738,000 were saved for the participants’ employers per year (an average of €6049 per individual). The costs of the 3-day BAP were €104,300 for the 122 participants. This leaves a total estimated cost reduction of €636,745 (an average of €5219 per individual), mostly for indirect costs. The estimated monetary cost-effectiveness of the BAP for this population is a rough estimate of the real possible benefits. In all calculations a choice was made for the lowest estimated cost effectiveness. In the practice of evaluation research it is hard to find thorough evidence of cost-effectiveness of health-enhancing programs. In an ideal situation, information is gathered from doctors as well as insurance companies and individual participants. In this study this turned out to be only partially possible. Due to registration problems and insurance strategies, data from insurance companies was not available. Still, with data from participants and doctors this study is a reasonable evaluation – albeit a rough analysis – of the benefits of the BAP.

In the discussion section of each chapter most of the pitfalls related to theory-driven evaluation and the no-control group design are examined. In a general discussion in Chapter 7 the emphasis was mainly on the translation of theoretical notions into clinical implications and suggestions for further research. The theory-driven approach has several benefits. Firstly, it had advantages for program planning and program improvement because the focus was on inadequate and adequate components. Secondly, it contributed to knowledge development by designing a provisional underlying theory helping to clarify how the intervention was expected to work. Increased body awareness is seen as the first goal, eliciting a changing process. Self-efficacy is an intervening variable that significantly correlates with the outcome: increased quality of life. On the other hand, expression of emotions was also hypothesised as an intervening mechanism, but this did not seem to fit with the general theoretical BAP model. This result is confirmed by advances in social science theory, which provides more than one explanation about the relationship between expression of emotions and health. Thirdly, the theory-driven approach highlighted the elements of program activity that deserved attention in the evaluation. It forced practitioners and managers to explain and agree on what they were doing and why during the implementation of the BAP. This helped in terms of program development and improvement as well as embedding assumptions in social science theory.

Chapter 7 also discusses a number of methodological problems that often plague program evaluation in practice. In the practical setting of the research described in this thesis, a randomised clinical trial with control condition was not possible. In psychosocial outcome studies it is even more difficult to study people in an unobtrusive way. Besides, in daily practice, patients who are motivated to get treatment tend to be included. The way respondents were included in this study thus resembles that clinical situation which safeguards the ecological validity. In the BAP study a specific choice was made for a practical instead of a clinical setting with a focus on the experimental group in the best possible design. To make an optimal design, the technique of triangulation is also used: the results of standardised validated and internationally used questionnaires are combined with both self-report measures and reports from spouses. The results of all three instruments point in the
same direction. Second, a non-response evaluation was done that showed no statistically significant between-group differences on the measured process and outcome variables. Respondents and non-respondents did not differ in age, gender or educational level. Third, the significant and clinically relevant results found clearly reflect that the measured changes are more than just regression to the mean. Participants may also recover naturally and not necessarily as an effect of the BAP. Still, the duration of the symptoms, having been present for more than a year when starting the BAP, makes it an unlikely all-inclusive explanation of the clinically relevant changes found. Fourth, a placebo effect like getting some personal attention is expected to have an influence in the short term and will decrease in the long term. In this study however the positive effect measured at two months after the BAP increased even more after twelve months.

More research is needed into the efficacy of programs such as the BAP, also in a 4-year follow-up because effects are theoretically expected to stabilise due to an encouragement of self-management. The black box of intervening mechanisms is only partially opened. More specific data is needed on the concepts that are in it.

Because of changes in the insurance system in the Netherlands, employers and employees have become more accountable for the health of employees. This makes it even more important to benefit from early and short cost-effective interventions like the BAP. It is necessary to see the BAP method as a regular instead of a non-conventional intervention so general practitioners and company doctors can do referrals more easily. The BAP may help prevent chronicity at the early stages of developing psychosomatic symptoms and so avoid medical care and sick leave.

To conclude, the theoretical BAP model that was developed functioned as a basis for program design and evaluation. The short BAP health promotion intervention turned out to be successfully implemented for CAPS with significant short- and long-term effects on most of the hypothesised variables in this model.