

# *Chapter 1*

---

**General introduction**

**1**



Maintenance of health of large groups of people in modern times

Health is increasingly seen as a resource for optimal human functioning<sup>1</sup>, for active participation in society<sup>2</sup>, and for sustainable employability<sup>3</sup>. With this, health represents an important human value for individuals and for society as a whole. However, the maintenance of health of large groups of people is not automatically a given, especially in times of ageing populations<sup>4</sup>. In addition, modern society is accompanied by an increase of 'welfare' diseases, such as non-communicable diseases (NCDs)<sup>5,6</sup>, and psychosocial health problems like work-stress<sup>7</sup> and depression<sup>5</sup>.

Under the influence of modern society, more and more people are struggling to live healthy, resulting in physical or mental health problems. The most prominent NCDs, i.e. cardiovascular diseases, cancer, chronic respiratory diseases and diabetes, share risk factors related to lifestyle<sup>8</sup>. Physical inactivity, tobacco use, harmful use of alcohol and unhealthy diets are the main lifestyle risks for these NCDs. It is disturbing to know that the prevalence of these lifestyle risks still remain high worldwide and are increasing in the majority of countries<sup>9</sup>. For example, around 40% of people worldwide is not participating in sufficient physical activity to benefit their health<sup>8</sup>. This has far-reaching consequences. Based on a comprehensive search of literature from 1980 onwards, including over 100 studies assessing the relationship between physical inactivity and health outcomes, it is estimated that physical inactivity globally accounts for 21.5% of ischaemic heart disease, 11% of ischaemic stroke, 14% of diabetes, 16% of colon cancer and 10% of breast cancer<sup>10</sup>. The influence of dietary habits on health are also worth mentioning. An increase in fruit and vegetable consumption up to the theoretical-minimum-risk distribution is expected to reduce the worldwide burden of ischaemic heart disease by 31%, of ischaemic stroke and stomach cancer by 19% each, and oesophageal cancer by about 20%<sup>11</sup>. The detrimental physical health effects caused by a society related unhealthy lifestyle is increasingly apparent in society<sup>12</sup>. More and more people are overweight or obese, and associated diseases like Diabetes type II are becoming more common<sup>13,14</sup>. In the Netherlands, for example, in 2012 an average of 48.3% of Dutch adults aged 19 years and older were overweight<sup>15,16</sup>.

Modern society also influences the mental health of people. Besides poverty and insecurity, work-stress is a major psychosocial risk factor for mental ill health<sup>5,7,17</sup>. Psychosocial risks at the workplace have been identified as significant emerging risk in contemporary times<sup>18</sup>.

Psychosocial risks go hand in hand with stress and mental health problems<sup>5</sup>, for which a consistent relation with heart diseases, depression and musculoskeletal disorders has been demonstrated<sup>17</sup>. Viewed positively, good mental health enables people to realise their potential, to cope with normal stresses of life, to work productively and to contribute to their communities<sup>8, 17</sup>. Mental health and well-being represents an important economic value<sup>19</sup>. Its preservation is therefore becoming increasingly important. However, nowadays poor mental health affects one in four people at some time in life<sup>5</sup>. Moreover, there is increasingly evidence that risk factors for mental ill health also affect people's physical health. Long working hours, sleeping problems and lack of relaxation<sup>20, 21</sup> for example are important factors that affect both mental and physical health. Also, several health risk factors seem to cluster. Co-occurrence between sleep problems and obesity for example have been demonstrated<sup>22</sup>.

The collective increase of unhealthy lifestyles not only negatively influences health, it also has extensive financial implications. Recent calculations have shown that in the Netherlands in 2010, €2.8 billion was spent on health care associated with diseases caused by smoking, € 1.6 billion was spent on diseases due to overweight, and € 1.3 billion was spent on diseases due to physical inactivity<sup>23</sup>. In an absolute sense, these are large amounts of money which are, at least partially, avoidable. Viewed relatively, smoking, overweight and physical inactivity involve almost 8% of all health care costs<sup>23</sup>. In the short term, a healthy lifestyle at a collective level is expected to lower health care costs<sup>23</sup>, although costs may rise in the long term due to longer life expectancy. It is, however, important to realise that the (financial) benefits of health and healthy lifestyle stretch far beyond the health care domain. Ill health, for example, is a risk factor in productivity loss and absenteeism<sup>24</sup>, with related costs which are often much higher compared to the direct health care costs<sup>25, 26</sup>.

To sum up: under the influence of modern society, there is a collective increase of unhealthy lifestyles, which threatens physical and mental health, human well-being and functioning at both an individual and collective (organisational, societal) level. Both from a human and from a financial perspective it is important to find ways in which large groups of people collectively can live healthily, despite the demands of modern life. People's collective efficacy in accomplishing a health promotion social change process is suggested to play a key role in the above mentioned health needs<sup>27</sup>. Also, inducing self-regulatory processes is

important in maintaining health behaviour in demanding circumstances<sup>28</sup>. This thesis started from the perspective of the increase of a society-related collective unhealthy lifestyle. A social change process that fosters self-regulation in health was expected to be useful to reverse this tendency. The overall aim was to contribute to the knowledge of how to maintain or promote the health of large groups of people, even in high demanding and rapidly changing modern times.

Theoretical positioning: a 'whole population' and system approach within organisations

By focusing on the maintenance and promotion of health of large groups of people, this study can best be placed in the tradition of a 'whole population approach'. A 'whole population approach' attempts to shift the distribution of health towards better health in a whole population<sup>29</sup>. By contrast, a 'high risk' approach seeks to identify and protect susceptible individuals. In addition, this study follows a *systems approach in the work setting*, as compared to an *individual* approach<sup>30, 31</sup>. The setting approach has roots in the WHO strategy Health for All and the Ottawa Charter<sup>32</sup> in which it was stated that 'health is created and lived by people within the settings of their everyday life; where they learn, work, play, and love'. The present study embraces the three key elements of the setting approach<sup>31</sup>. First, it includes an *ecological view* on health promotion, in which health is understood to be determined by a complex interplay between environmental, organisational and personal factors, largely determined outside of health care services. Second, it reflects a *system perspective*, in which settings, such as the work setting or school setting, are seen as dynamic, complex and adaptive systems characterised by interconnectedness and interdependencies between different elements. Third, it has a *development and change* focus within the whole setting, which means that people and their environments both need to develop or change in order to achieve the desired health outcomes.

This thesis focuses on the work setting. Work settings give access to large groups of people and enable multilevel interventions required to address the multifactorial essence of health<sup>33</sup>. Moreover, organisational change theories to induce change processes are available<sup>34-36</sup> and recommended to be used in health promotion<sup>37</sup>. With this, the work setting is perhaps one of the most important health promotion settings.

## Focus of the study

The remainder of this general introduction elaborates on organisational health interventions. Also, the way the required health-promotion social change processes within organisations are understood in this study are described. Lastly, the relevance of self-regulation in maintaining a healthy lifestyle in contemporary societal demands is described.

### *Challenges of organisational health interventions*

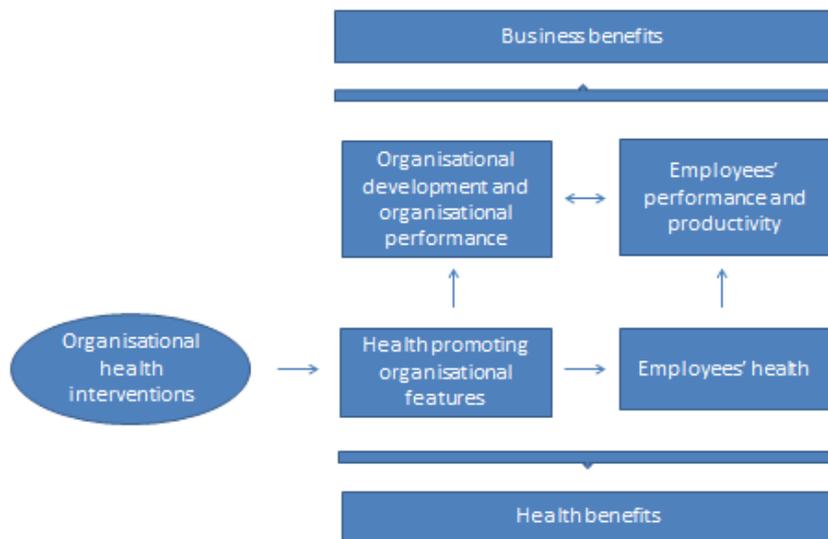
Health in organisations is addressed from different perspectives. First, often encouraged by Occupational Health and Safety (OHS) legislation, most organisations have an OHS policy. In OHS, the focus traditionally was on the protection of workers, but increasingly has shifted towards creating conditions by which people can maintain or enhance their health. In this, special attention to social work conditions, work climate and culture exists and seems justified<sup>38, 39</sup>. Nowadays, also the positive value of work *as such* for employees' health is acknowledged<sup>40</sup>. A second perspective on work and health is Workplace Health Promotion (WHP). WHP is primarily originated in public health, and aims at promoting a healthy lifestyle among employees as well as promoting circumstances that enhance health<sup>41</sup>. Third, from an organisation developmental perspective, a healthy workforce is increasingly seen as a resource for organisational performance<sup>1</sup>. Health and well-being therefore are increasingly incorporated in (personal) leadership programmes and team development programmes.

As a result, health in organisations nowadays includes many topics. It covers both individual and organisational approaches and interventions, and includes several policies involving various stakeholders, such as managers, employees, policy makers, human resource departments, insurance companies and (occupational) health experts. Consequently, health promotion within companies is now understood as a complex innovation<sup>42</sup>. In order to cover all perspectives, more comprehensive health management approaches, combining organisational and employee needs, have been recommended<sup>43-45</sup>. To date, however, such a comprehensive approach still remains difficult, and health is still often addressed fragmentally within organisations.

Whereas *individual* interventions in the work setting particularly focus on the health needs of (groups of) individual workers, *organisational* interventions address the organisational features themselves. Organisational interventions for example address organisational

features like leadership style, organisational culture, job redesign<sup>46</sup>. By addressing organisational features, organisational health interventions may influence relatively large groups of employees. In this thesis, it is presumed that especially *organisational* interventions can meet the requirements which enable a change process needed to improve self-regulation in health. Organisational interventions, however, face a number of substantial challenges<sup>46,47</sup>, for which further knowledge is required. Difficulties of organisational interventions include, among others, the complex interplay between work and health, and implementation problems in a continuously changing environment<sup>48</sup>. There is a need for knowledge on how to develop organisational health interventions more effectively. For this, it is important to notice that organisations are not primarily health-promoting contexts. The main point of interest of an organisation is their business; the functioning and existence of the organisation as a whole. Health promoters should have a good understanding of the organisation as entity. A thorough search for the parallel health and business interests is needed to develop and implement organisational health interventions effectively<sup>49,50</sup>. To date, knowledge on how to promote health and business benefits simultaneously is scarce.

Figure 1 presents the model on the relevance of organisational health interventions used in this thesis. Organisational health interventions primarily target health-promoting organisational features. These organisational features are expected to promote employees' health, which may in turn improve employees' performance and productivity. Also, these organisational features are expected to contribute to organisational development and performance of the organisation as a whole. Organisational health interventions may therefore serve a parallel health and business interest. From the perspective of parallel interests, in the literature there is currently particular attention on a construct called social capital<sup>51</sup>. Organisational social capital is a cultural dimension and comprises collaboration, justice and trust<sup>51</sup>. Organisational social capital is presumed to be an important topic for organisational health interventions.



*Figure 1: Organisational health interventions and the suggested ways to contribute to health and business benefits*

This thesis uses an organisational view on health promotion. It aims at contributing to knowledge on how to develop effective organisational health intervention. It adds to the existing knowledge in work-health science by specifically focusing on the parallel health and business interests.

#### *Health-promotion social change processes in organisations*

Based on organisational knowledge, in this thesis a collective social change process is primarily seen as a collective learning process. Collective learning theories, such as Theory U<sup>52</sup>, are seen as a relevant theoretical foundation. Theory U<sup>52</sup> describes the way groups of people collectively learn to shape a new future. The principles of Theory U suggest ways to help people to break through unproductive or unhealthy patterns, behaviours and decisions. The cornerstone of this kind of collective learning process is that (groups of) people collectively identify (persistent) patterns, learn to reflect on their 'selves' and their values, and learn to act according to their most important values. Similarities in these essentials of learning collectively are found in theories on organisational culture<sup>36</sup> and on organisational learning<sup>53-55</sup> processes. Nowadays, the described social or cultural change processes are also seen as a transition<sup>56</sup>, a process from one state to another. Transitions will only take place if they 'really make sense'<sup>56</sup>. In order to induce a sustainable social change process, it is

important to get a more profound understanding of what stakeholders really find important, both from their respective parts as well as from the larger whole of the system<sup>57</sup>. Based on these learning theories and perspective on transitions, inducing a health promotion social change process requires a profound awareness of the value that people attach to health. The people involved should discuss and make explicit how they value health, including their underlying assumptions. A broad value orientation on health is therefore expected to be a key element to induce a health promotion social change process.

By combining health science and organisational change theories, this thesis was aimed at providing insights in how to induce a health promotion social change process within organisations. As organisational health interventions may achieve a large group of individuals, the overall aim was to contribute to knowledge on how to maintain or promote the health among large groups of people in contemporary times.

#### *Self-regulation*

Self-management<sup>58</sup> and self-regulation<sup>28, 59, 60</sup> have become major issues in the attempts to maintain and promote the health of large groups of people at lower costs. Self-regulation refers to people as active agents, and is seen as 'a vital aspect of human adaptation to life'<sup>28</sup>. Addressing self-regulation adds the dimension of *how* to change individual behaviour, rather than focusing on aspects on *what* factors should be changed to improve health<sup>61</sup>. Whereas in traditional health programmes, patients are often still the receiving actor, while experts are the providing actor<sup>62</sup>, self-regulating human beings are seen as active players, rather than spectators of an environment<sup>28</sup>.

Self-regulation in health requires ownership among all relevant stakeholders. In organisations, this includes both the individual level (the employees) and the corporate level (the organisation). Self-regulation in health within organisations is therefore expected to require a change process in which all relevant stakeholders are involved and jointly deploy the change process.

At the individual level, self-regulation includes both self-management towards health and health behaviour, and a more generic view on self-regulation, i.e. referring to the self-regulatory capacity to effectively organise one's life in a demanding and changing environment. The first perspective is particularly originated in disease treatment, and refers

to the extent to which individuals are able to maintain a specific or prescribed health behaviour needed for their specific health status, with only a limited interference of a health expert like a doctor or a nurse<sup>58</sup>. Likewise, a new definition of health is proposed: ‘the ability to adapt and to self-manage, in the face of social, physical, and emotional challenges’<sup>63</sup>. Closely related to self-management is the concept of *self-control* towards intended healthy lifestyles<sup>64</sup>, in which goal setting and goal striving are key elements<sup>65</sup>. Self-monitoring, adoption of goals and self-motivating incentives are three generic sub-functions of this kind of self-regulation<sup>27</sup>. Individuals are encouraged to set and attain personal health-related goals. The individual’s motives, supported by social and cognitive conditions and facilities, are used to take the next step in personal health promotion.

The more generic view on self-regulation is seen as a foundation for healthy growth and development, with a direct influence on health. People who can use this kind of self-regulation have power over themselves. They act in accordance to their values and interests. Being in balance in this way is ascribed a direct health promoting effect<sup>66</sup>. In addition, self-regulated people are able to perform and maintain healthy lifestyle behaviours from within, which in turn may positively influence health<sup>67</sup>. Self-determination theory<sup>66</sup> is an often-used theory in this perspective. Self-determination is presumed to positively influence health and health behaviour<sup>68</sup> and vitality<sup>69</sup>. In the organisational setting, the importance of a supportive social work environment in predicting self-determination among employees has been demonstrated<sup>71</sup>.

At the organisational level, self-regulation primarily requires to embed health within the organisation’s culture, policy, practices and habits. Organisational health interventions therefore should particularly search for ways how to embed health within the organisation<sup>47</sup>. By aiming to induce a health-promoting social change process in organisations, this thesis addresses self-regulation in health both from the perspective of employees as from the perspective of the organisation as a whole.

## Aims and objectives

### *Aims*

Coming forth from the idea that inducing a social change process that fosters self-regulation in health within organisations makes sense from both a societal and business perspective,

and the observation that that there are still many improvements possible in organisational health interventions, the aims of the study were:

1. To contribute to the knowledge of how to induce a change process that fosters self-regulation in health in organisations,
2. To contribute to more effective workplace health promotion (WHP),
3. To contribute to knowledge on how to develop, apply and evaluate an organisational health intervention aimed at promoting social capital and self-regulation in health in organisations.

The societal relevance of this study is found in the contribution to knowledge of how to promote the health of large groups of individuals through a setting other than the health care sector. This is expected to improve population health, well-being and vitality, and may reduce health care costs.

The business relevance is more effective organisational health promotion by which parallel (health and business) interests will be improved simultaneously.

The *objectives* were:

1. To examine the parallel health and business interest of organisational health promotion, and to provide insight in *how* this parallel interest can be served simultaneously,
2. To provide an insight into the variety of ways by which health can be meaningfully embedded within companies,
3. To investigate how to develop an organisational health intervention, to apply such an intervention and to examine its effectiveness on social capital and self-regulation in health.

Outline

Following this general introduction, this thesis is divided into three parts.

*Part 1: Examining the parallel health and business interest of organisational health interventions*

Part one describes three studies in which the parallel health and business interest is examined by associating employees' health and performance. *Chapter 2* describes a study in which vitality at work was associated with lifestyle, self-determination, organisational culture and with employees' performance. *Chapter 3* describes the association between social capital and employees' health and performance. *Chapter 4* describes employees' motivational regulatory styles towards health and their associations with a healthy lifestyle and a healthy work style. In addition, these studies provide insights in what organisational features may be relevant to serve a parallel health and business interest.

### *Part 2: Embedding health within companies*

Part two describes three different ways by which health can be embedded within organisations. *Chapter 5* describes a value case for integrative health management in companies. The study introduces the concept of value cases, describes a value case methodology and a case study in which this value case methodology is applied. *Chapter 6* is about incorporating health indicators in management control. Key Performance Indicators (KPIs) for health management in companies are identified. These KPIs, as well as the way these indicators are used in front runners companies on health management in the Netherlands, are described. In *Chapter 7*, core values that are underlying health, safety and well-being in organisations were identified from the literature.

### *Part 3: Developing, applying and evaluating an organisation-specific intervention*

Part three addresses the way an organisational health intervention can be developed. Also, the development, application and evaluation of an organisational health intervention is described. *Chapter 8* describes a Delphi procedure, in which organisation-specific factors for developing health interventions in companies are identified. To adjust to common health practice, the identified factors are embedded into a practical methodology (called 'Organisational Mapping'). *Chapter 9* describes the development and evaluation of an organisational health intervention aimed at promoting social capital and self-regulation within a Dutch dairy company. An organisation-specific application of the Intervention Mapping procedure<sup>37</sup> resulted in an organisational Large-Scale-Intervention<sup>56</sup> in the company. The study describes its effectiveness on bonding social capital, openness and

autonomous regulation towards health, lifestyle, perceived health and sustainable employability.

The final chapter, Chapter 10, summarises the main findings of the thesis and discusses the implications for future research and future organisational health interventions.

## References

1. Zwetsloot, GIJM and Van Scheppingen, AR. Towards a strategic business case for health management. In: U Johanson, G Ahonen and R Roslender eds. *Work Health and Management Control*. Stockholm: Thomson Fakta; 2007:183-213.
2. Hoeymans, N, Van Loon, AJM and Schoemaker, CG. Ontwerprapport volksgezondheid toekomstverkenning: Design of the nation public health status and forecast 2014; Bilthoven, RIVM briefrapport 270241003;2012.
3. Oude Hengel, KM. *Sustainable Employability of Construction Workers*. Doctoral Thesis. TNO/ VU Medical Center. Amsterdam: Buijten & Schipperheijn; 2013.
4. Garssen, J. *Demografie van de vergrijzing*. Den Haag/ Heerlen: CBS; 2011.
5. World Health Organization (WHO). *Mental health: Facing the challenges, building solutions*. Geneva: World Health Organisation Press; 2005.
6. Organization for Economic Cooperation and Development (OECD). *Health at a glance 2011: OECD indicators*. OECD Publishing 2011. available at: [http://dx.doi.org/10.1787/health\\_glance-2011-en](http://dx.doi.org/10.1787/health_glance-2011-en).
7. Leka, S., Griffith, A and Cox, T. Work organisation and stress: Systematic problem approaches for employers, managers and union representatives. *Protecting workers' health series*, no 3. Geneva: World Health Organisation Press; 2003.
8. World Health Organization (WHO). *Cluster strategy non communicable diseases and mental health 2008-2013*. Geneva: World Health Organisation Press; 2010 WHO/NMH/2009.2.
9. World Health Organisation (WHO). *Non communicable diseases: Country profiles 2011*. Geneva: World Health Organization Press; 2011.
10. Bull, FC, Armstrong, TP, Dixon, T, Ham, S, Neiman, A and Pratt, M. Physical inactivity. Chapter 10. In: M Ezzati, AD Lopez, A Rodgers and JL Murray eds. *Comparative Quantification of Health Risks; Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*. Geneva: World Health Organization Press; 2004:729-881.
11. Lock, J, Pomerleau, J, Causer, L and McKee, M. Low fruit and vegetable consumption. Chapter 9. In: M Ezzati, A D Lopez, A Rodgers and C Murray eds. *Comparative Quantification of Health Risks*. Geneva: World Health Organization Press; 2009:597-728.
12. Beaglehole, R, Bonita, R, Alleyne, G, et al. UN high-level meeting on non-communicable diseases: Addressing four questions. *The Lancet*. 2011;378:449-455.
13. Philip, W, James, T, Jackson-Leach, R, et al. Overweight and obesity (high body mass index). chapter 8. In: M Ezzati, A D Lopez, A Rodgers and C Murray eds. *Comparative Quantification of Health Risks. Global and Regional Burden of Disease Attributable to Selected Major Risks Factors*. Geneva: World Health Organization Press; 2004:497-596.
14. Baan, CA and Spijkerman, AMW. Diabetes mellites samengevat. In: *Volksgezondheid toekomst verkenning, Nationaal Kompas volksgezondheid*, <<http://www.nationaalkompas.nl>> Nationaal

Kompas Volksgezondheid\Gezondheidstoestand\Ziekten en aandoeningen\Endocriene, voedings- en stofwisselingsziekten en immuunstoornissen\Diabetes mellitus. Bilthoven: RIVM; 2013.

15. Mulder, M. Overgewicht 2012. In: Volksgezondheid toekomst verkenning, Nationale atlas volksgezondheid, <<http://www.zorgatlas.nl>> Zorgatlas\Beïnvloedende factoren\Lichamelijke eigenschappen. Bilthoven: RIVM; 2013.

16. Centraal Bureau voor de Statistiek (CBS). Steeds meer overgewicht. CBS-webmagazine. Available at: <http://www.cbs.nl/nl-NL/menu/themas/gezondheid-welzijn/publicaties/artikelen/archief/2012/2012-3651-wm.htm>. Den Haag/ Heerlen: CBS; 2012. Accessed November 2013.

17. Leka, S. and Jain, A. Health impact of psychosocial hazards at work: An overview. Geneva: World Health Organization Press; 2010.

18. EU-OSHA. Expert forecast on emerging psychosocial risks related to occupational safety and health. Luxembourg: Office for Official Publication of the European Community; 2007.

19. Weehuizen, R. Mental capital. The economic significance of mental health. Doctoral Thesis, Universitaire pers: Maastricht; 2008.

20. Poos, MJJC, Schoemaker, C, Spijker, J, et al. Hoe vaak komen stemmingsstoornissen voor en hoeveel mensen sterven eraan? In: Volksgezondheid toekomst verkenning, Nationaal Kompas volksgezondheid. RIVM: Bilthoven; 2013.

21. Jongsma, KR. Depressie preventie. Achtergrondstudie uitgebracht door de Raad voor de Volksgezondheid en Zorg (RVZ) bij het advies preventie van welvaartsziekten. Den Haag; 2011.

22. Oksanen, T, Kawachi, I, Subramanian, S V, et al. Do obesity and sleep problems cluster in the workplace? A multivariate, multilevel study. *Scand J Work, Environ Health*. 2013;39:276-283.

23. In 't Panhuis-Plasmans, M, Luijben, G and Hoogeveen, R. Zorgkosten van ongezond gedrag. kosten van ziekten notities 2012-2. Bilthoven: RIVM; 2012.

24. Koopmans, L, Bernaards, CM, Hildebrandt, VH, Schaufeli, WB, De Vet Henrica, CW and Van Der Beek, AJ. Conceptual frameworks of individual work performance: A systematic review. *J Occup Environ Med*. 2011;53:856-866.

25. Raad voor de Volksgezondheid en Zorg (RVZ). Gezondheid en gedrag. Advies uitgebracht door de RVZ aan de Minister van Volksgezondheid, Welzijn en Sport. Zoetermeer; 2002.

26. Polder, JJ, Takken, J, Meerding, WJ, Kommer, GJ and Stokx, LJ. Kosten van ziekten in Nederland-De zorgeuro ontrafeld. Bilthoven, Rotterdam, Houten: Centrum VTV RIVM, Instituut Maatschappelijke Gezondheidszorg Erasmus MC, Bohn Stafleu Van Loghum; 2002.

27. Bandura, A. The primacy of self-regulation in health promotion. *Appl Psychol*. 2005;54:245-254.

28. Baumeister, RF, Nathan Dewart, C, Ciarocco, NJ and Twenge, JM. Social exclusion impairs self-regulation. *J Pers Soc Psychol*. 2005;88:589-604.

29. Rose, G. Sick individuals and sick populations. *Int J Epidemiol*. 1985;14:32-38.

30. Whitelaw, S, Baxendale, A, Bryce, C, MacHardy, L, Young, I and Witney, E. 'Settings' based health promotion: A review. *Health Promot Int.* 2001;16:339-353.
31. Dooris, M. Healthy settings: Challenges to generating evidence of effectiveness. *Health Promot Int.* 2006;21:55-65.
32. World Health Organization (WHO). Ottawa charter for health promotion 1986. Available at: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index.html>; World Health Organization; Accessed, November 2013.
33. Kwak, L, Kremers, SPJ, Van Baak, MA and Brug, J. Participation rates in worksite-based intervention studies: Health promotion context as a crucial quality criterion. *Health Promot Int.* 2006;21:66-69.
34. Boonstra, JJ. Dynamics of organizational change and learning. An introduction. In: Boonstra, JJ, (ed). *Dynamics in Organizational Change and Learning*. Chichester: Wiley Publishers; 2004:1-42.
35. Poels, T. *Handboek Organisatieverandering en Organisatieritmiek. Theorie van Praktijk van Ritmiek en Organisatieverandering*. Den Haag: Academic Service; 2011.
36. Schein, EH. *De Bedrijfscultuur als Ziel van de Onderneming. De Zin en Onzin over Cultuurverandering*. Schiedam: Scriptum; 2006.
37. Bartholomew, LK, Parcel, GS, Kok, G, Gottlieb, NH and Fernandez, ME. *Planning Health Promotion Programs: An Intervention Mapping Approach*. San Francisco: Jossey-Bass; 2011.
38. Dollard, MF and Bakker, AB. Psychosocial safety climate as a precursor to conducive work environments, psychological health problems, and employee engagement. *J. of Occupational and Organizational Psychology* 2010;83:579-599.
39. Zwetsloot, GIJM, Leka, S and Jain, A. Corporate social responsibility and psychosocial risk management. In: S Leka and T Cox (eds). *The European Framework for Psychosocial Risk Management: The PRIMA- EF*. Nottingham: Institute of Work Health and Organisations I-WHO Publications; 2008:96-114.
40. Van der Klink, JJJ, Bültmann, U, Brouwer, S, et al. Sustainable employability in older workers, work as value. *Gedrag en Organisatie*. 2011;24:341-355.
41. European Network for Workplace Health Promotion, ENWHP. Healthy employees in healthy organisations. Models of good practice. Essen: BKK Bundesverband;1999.
42. Reavley, N, Livingston, J, Buchbinder, R, Bennell, K, Stecki, C and Osborne, RH. A systematic grounded approach to the development of complex interventions: The Australian WorkHealth program - arthritis as a case study. *Social Science and Medicine*. 2010;70:342-350.
43. Zwetsloot, G and Pot, F. The business value of health management. *J Bus Ethics*. 2004;55:115-124.
44. Goetzel, RZ, Shechter, D, Ozminkowski, RJ, Marmet, PF, Tabrizi, MJ and Roemer, EC. Promising practices in employer health and productivity management efforts: Findings from a benchmarking study. *J Occup Environ Med*. 2007;49:111-130.

45. Burton J. WHO healthy workplace framework and model: Background and supporting literature and practice. Geneva: World Health Organisation Press; 2010.
46. Cox, T, Taris, TW and Nielsen, K. Organizational interventions: Issues and challenges. *Work Stress*. 2010;24:217-218.
47. Nielsen, K, Randall, R, Holten, AL and González, ER. Conducting organizational-level occupational health interventions: What works? *Work Stress*. 2010;24:234-259.
48. Randall, R and Nielsen, K. Interventions to promote well-being at work. In: S Leka and J Houdtmondts (eds). *Occupational Health Psychology*. New Jersey: Wiley-Blackwell; 2010:88-123.
49. Ministerie van Volksgezondheid Welzijn en Sport (VWS). Adviesaanvraag met betrekking tot parallelle belangen bij gezondheid en preventie. Den Haag; 29 september 2008.
50. Sociaal Economische Raad (SER). Een kwestie van gezond verstand. Breed preventiebeleid binnen arbeidsorganisaties. Advies uitgebracht aan de Minister van Volksgezondheid Welzijn en Sport. Publicatienummer 2; 2009.
51. Hasle, P., Kristensen, TS., Møller, N., and Olesen, K. G. Organizational social capital and the relations with psychosocial factors and health: A new issue for research. International Congress on Social Capital and Networks of Trust, Jyväskylä, Finland, 2007.
52. Scharmer, O. *Theory U: Leading from the future as it emerges*. Cambridge, USA: The Society for Organizational Learning; 2007.
53. Argyris, C and Schön, D A. *Organizational Learning: A Theory of Action Perspective*. Reading, MA: Addison-Wesley Pub. Co; 1978.
54. Senge, PM. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday; 1990.
55. Senge, PM, Scharmer, CO, Jaworski, J and Flowers, BS. *Presence: An Exploration of Profound Change in People, Organizations, and Society*. London: Nicolas Brealey; 2005.
56. Baken, B. De oplossing van de crisis kost niets. Sectoroverstijgend denken is de enige oplossing voor de economische, sociale en ecologische crisis. *Het Financieele Dagblad*. 21 oktober 2013.
57. Van der Zouwen, T. *Building an Evidence Based Practical Guide to Large Scale Interventions*. Delft: Eburon Uitgeverij BV; 2011.
58. Notenboom, A, Blankers, I, Goudriaan, R and Groot, W. E-health en zelfmanagement: Een panacee voor arbeidstekorten en kostenoverschrijding in de zorg? Den Haag: Aarts de Jong Wilms Goudriaan Public Economics bv (APE): 2012; 906.
59. De Ridder, DTD and De Wit, JDF. Self-regulation in health behavior: Concepts, theories and central issues. Chichester: John Wiley and Sons; 2006:2-23.
60. Annesi, JJ. Self-regulatory skills usage strengthens the relations of self-efficacy for improved eating, exercise, and weight in the severely obese: Toward an explanatory model. *Behav Medicine*. 2011;37:71-76.

61. Brug, J, Oenema, A and Ferreira, I. Theory, evidence and intervention mapping to improve behavioral nutrition and physical activity interventions. *Int J Behav Nutr Phys Act.* 2005;2.
62. Nielsen, K. Review article: How can we make organizational interventions work? employees and line managers as actively crafting interventions. *Human Relations.* 2013;66:1029-1050.
63. Huber, M, André Knottnerus, J, Green, L, et al. How should we define health? *BMJ.* 2011;343:d4163.
64. Baumeister, RF, Vohs, KD and Tice, DM. The strength model of self-control. *Current Directions in Psychological Science.* 2007;16:351-355.
65. Mann, T, De Ridder, D and Fujita, K. Self-regulation of health behavior: Social psychological approaches to goal setting and goal striving. *Health Psychol.* 2013;32:487-498.
66. Ryan, RM and Deci, EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol.* 2000;55:68-78.
67. Patrick, H and Williams, GC. Self-determination theory: Its application to health behavior and complementarity with motivational interviewing. *Int J Behav Nutr Phys Act.* 2012;9.
68. Ng, JYY, Ntoumanis, N, Thøgersen-Ntoumani, C, et al. Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychol Science.* 2012;7:325-340.
69. Nix, GA, Ryan, RM, Manly, JB and Deci, EL. Revitalization through self-regulation: The effects of autonomous and controlled motivation on happiness and vitality. *J Exp Soc Psychol.* 1999;35:266-284.
70. Sheldon, KM and Kasser, T. Coherence and congruence: Two aspects of personality integration. *J Pers Soc Psychol.* 1995;68:531-543.
71. Baard, PP, Deci, EL and Ryan, RM. Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *J Appl Soc Psychol.* 2004;34:2045-2068.