

The concept of Positive Health for students/ lecturers in the Netherlands

Yasmaine H.J.M. Karel, Marja Van Vliet, Charlot E. Lugtigheid, Cindy M.A. De Bot & John Dierx

To cite this article: Yasmaine H.J.M. Karel, Marja Van Vliet, Charlot E. Lugtigheid, Cindy M.A. De Bot & John Dierx (2019): The concept of Positive Health for students/lecturers in the Netherlands, International Journal of Health Promotion and Education, DOI: [10.1080/14635240.2019.1623707](https://doi.org/10.1080/14635240.2019.1623707)

To link to this article: <https://doi.org/10.1080/14635240.2019.1623707>



Published online: 29 May 2019.



Submit your article to this journal [↗](#)



Article views: 13



View Crossmark data [↗](#)



The concept of Positive Health for students/lecturers in the Netherlands

Yasmaine H.J.M. Karel^a, Marja Van Vliet^b, Charlot E. Lugtigheid^a, Cindy M.A. De Bot^a and John Dierx^a

^aLiving in Motion Research group, Centre of Expertise Caring Society 3.0, Avans University of Applied Sciences, Breda, The Netherlands; ^bDepartment of Health, Institute for Positive Health, Utrecht, The Netherlands

ABSTRACT

Introduction: The future healthcare workforce are expected to serve as role models given that their roles cover patient education concerning positive health behavior. In light of the changes in healthcare, towards patient centered care and positive health, the need to encourage students of health sciences to adopt the concept of positive health will be necessary.

Aim: To explore the attitudes of lecturers and students of health to the new concept of Positive Health, using the 6 domains, in Dutch health education systems with different health care professionals.

Methods: A cross-sectional study comparing the perception towards health in students and lecturers of the health department of an Applied University in the Netherlands with the data of patients and other stakeholders.

Results: Students scored aspects of social participation, mental functioning and daily functioning as less important compared to patients. Lecturers scored the aspects of bodily functions and daily functioning less important compared to patients.

Conclusion: These differences in scores should be addressed in educational programs of health professionals because all aspects of health are important to the patient's experienced health.

ARTICLE HISTORY

Received 12 February 2019
Accepted 20 May 2019

KEYWORDS

Health education; Positive Health; health definition; health care professionals; health promotion

Introduction

The health definition of the WHO, formulated in 1948, was profound at the time because it included the physical, mental, and social domains of a person. Furthermore, it gave a large impetus to cure diseases and discover new treatment options. However, over the years this definition has also been subject to debate. The nature of diseases have changed substantially and political climates have changed in many western countries. Mortality rates and hospitalizations for acute conditions decreased and the prevalence of chronic conditions increased (World Health Organization 2008; Alwan et al. 2010; World Health Organization 2018). This epidemiologic shift can be attributed to an exposure of higher levels of stress, sedentary lifestyles and the ingestion of high caloric and high fat diets (McKeown 2009; Gage 2005; Mathers and Loncar 2006). The definition seems inapplicable for this increasing

CONTACT Yasmaine H.J.M. Karel  yhjm.karel@avans.nl  Department of Health, Avans University of Applied Sciences, Hogeschoollaan 1, Breda, CR 4818, The Netherlands

© 2019 Institute of Health Promotion and Education

population with a chronic disease and the current culture of neo-liberal political reforms observed in many countries (Mathers and Loncar 2006; McGregor 2001). Health promotion is therefore more relevant today than ever before in addressing these large public health problems.

The term 'complete' in the definition of health considers all people with a chronic disease are ill. Illness is defined as a medical problem that leads to medicalization. It does not take into account the role of the human capacity to cope autonomously with life's changing physical, emotional and social challenges. Many chronic illnesses have risk factors or prognostic factors that are modifiable and thus can be influenced by the individual. Healthy behavior is critical because it can lower the risk of disease, recurrence or reduce the severity of disease (Aldana et al. 2003) (Speck et al. 2010).

Health is thus also influenced by factors outside of the health sector domain like social, economic and political forces. These factors shape the environment in which people grow, live, work, age and get sick. The highest possible standard of health depends on a comprehensive holistic approach which goes beyond curative and biomedical health care as also defined by the new definition of Health promotion 2.0 (O'Donnell 2009). This holistic approach should empower individuals to take actions for their own health.

Therefore a new concept of health was launched in 2011 as: 'Health as the ability to adapt and self-manage, in the face of social, physical and emotional challenges' (Huber et al. 2011). Rather than focusing on the disabilities, the new concept addresses the opportunities or assets available to the individual to cope with challenges faced when ill. Huber et al. (2016) operationalized the new concept empirically by defining health indicators by asking relevant stakeholders (patients and several health care providers) about health and therefore depicting the view of health from the general population. This resulted in the concept described above with the categorization of 6 health dimensions: bodily functions, mental function, spiritual/existential dimension, quality of life, social participation and daily functioning. This elaboration of the new concept of health into 6 dimensions is called Positive Health.

This new concept of health is in line with some major transitions in healthcare initiated by the Dutch government stimulating people to participate more in society, be more dependent on their social networks and to be more responsible for their own well-being (Alexander 2013; VWS 2010). Driven by the desire to engage patients and citizens to become active actors for their own health, Dutch healthcare policies, services, and education have widely adopted the dynamic concept of health as a new framework. Several health departments in applied universities also incorporated the new framework of health in their curriculum.

A qualitative study that investigated the new concept of health with group interviews among different health care professionals, concluded that the new concept stimulated an active approach of individuals towards health promotion and adaptation to a healthy lifestyle (Jambroes et al. 2016). Moreover it supports for creating a health-promoting society that helps individuals to adapt and self-manage. Health education as an integral part of health promotional activities should therefore be a competence of all health care providers.

The future healthcare workforce are expected to serve as role models given that their roles cover patient education concerning positive health behavior. In light of the changes in healthcare, towards patient centered care and Positive Health, the need to encourage

students of health sciences to adopt the concept of Positive Health is all the more compelling.

However, little is known about the perspective of positive health from students and lecturers in health sciences (physiotherapy, nursing and health technology).

Aim of this study is to explore the attitudes of lecturers and students of health to the new concept of Positive Health, using the 6 domains, in Dutch health education systems with different health care professionals.

Method

Design

This was a cross-sectional study comparing the perception towards health in students and lecturers of the health department of an Applied University in the Netherlands with the data of patients and other stakeholders from an earlier study. Methods of the earlier study are described elsewhere (Huber et al. 2016).

Participants

Participants were lecturers and students (first and fourth year) of their bachelor degree in either the education for Nursing, Physiotherapy or Health Technology at the Avans University of Applied Sciences in the Netherlands.

Data collection

The questionnaire that was used was developed in a previous study by Huber et al. (2016). It is a conceptual and operational framework, related to the concept of health as the ability to adapt and to self-manage. It was developed from a qualitative study and thereafter quantitatively tested in the Netherlands involving seven important stakeholder domains in health (healthcare providers, patients with a chronic condition, policy-makers, insurers, public health actors, citizens and researchers).

The questionnaire consists of questions on demographics, illness and 32 statements, covering 6 dimensions of health, which were selected from the interviews. Respondents were asked if they considered the statement to be related to 'health' and how important each statement was to them on a score from 1 (completely unimportant) to 9 (highly important) or an option 'I don't know'. The last question was to rank the 6 dimensions from most to least important. All dimensions have a high internal consistency (Huber et al. 2016).

Data were collected in April and May of 2016. Electronic questionnaire, using Evasys software, were sent to all lecturers and students of the first and fourth year. To reduce the chance of missing data, an email reminder was sent 3 times with an interval of 7 days in between. Data from stakeholders in the field (doctors, nurses, physiotherapists and patients) were collected in an earlier study (Huber et al. 2016). Participants from Huber's study were approached through networks within the stakeholder domains, including the Dutch nursing association, policymakers, insurers, public health professionals and researchers. They were also invited to complete the online questionnaire.

Statistical analysis

Descriptive statistics, including frequencies for categorical variables and means with standard deviations (SD) for continuous variables, were used to describe the general characteristics of the respondents and the responses to the questionnaire. Cronbach's alpha was calculated for each health dimension to check for internal consistency. A Cronbach's alpha of 0.70 was considered acceptable (Nunnally 1978). Mean composite scores for each health dimension were calculated for students, lecturers, doctors, nurses, physiotherapists and patients respectively.

Differences between subgroups (lecturer/student/doctor/nurses/physiotherapists/patients, departments and participants with a disability in the past) was tested with uncontrolled univariate general linear models (GLM) to be able to test the significant effects in subgroups controlling for gender and experienced health. The age was not considered a possible covariate because the age is already different for teachers and students. Data were analyzed with SPSS 22.0. A two-sided p-value < .05 was considered to be statistically significant.

Results

In total 125 lecturers and 658 students were contacted by email. Eventually, 54 lecturers (38%) and 136 students (21%) participated. The characteristics of the students and lecturers are shown in Table 1. Overall, respondents were mostly female and felt healthy at the time.

Data from the primary study in practice contained information from 1218 people. These were nurses (n = 110), physiotherapists (n = 216), doctors (n = 317) and patients (n = 575) with a mean age of 53 (SD = 11.6) and 58% were women. The characteristics of stakeholders are shown in Table 1.

Table 1. Characteristics of respondents at Avans University.

	Total	Students	Lecturers
N(%)	190 (100)	136 (72)	54 (28)
Gender, male(%)	51 (27)	29 (21)	22 (41)
Age mean (SD)	26 (11.7)	20 (2.5)	42 (11.8)
Education n(%)			
Nursing	89 (48)	61 (46)	28 (53)
Physiotherapy	73 (39)	54 (40)	19 (36)
Health Technology	25 (13)	19 (14)	6 (11)
Year studying			
1 st year		97 (76)	
4 th year		31 (24)	
Part-time job in health domain		44 (33)	
Parents have a job in health domain, yes		42 (32)	
Personal experience disease >3 months, yes	35 (19)	24 (18)	11 (20)
Health score n(%)			
Excellent	24 (13)	15 (11)	9 (17)
Good	119 (64)	80 (60)	39 (72)
Reasonable	40 (21)	34 (26)	6 (11)
Moderate	2 (2)	3 (3)	0
Bad	0	0	0

N Number, SD standard deviation

Descriptive data of health domain scores

Composite scores were calculated for all health dimensions from the corresponding statements. Cronbach's alpha was calculated for all health domains and its composite scores (Table 2). All scores were above 0.70 except for 'bodily function' (0.67).

The mean scores for each health domain varied from 6.20 to 7.70 on a 9-point scale for lecturers and students (Table 3). The health domain 'Quality of life' had the highest mean score. The mean score for 'social and societal participation' and 'daily functioning' were given the lowest scores.

Health domain scores for lecturers and students

Data of the stakeholders included in the original study were added. Scores of the lecturer and student seemed to overlap except for a small difference in the domains 'bodily function' and 'daily functioning' (Table 3 & Figure 1). The uncontrolled GLM analysis showed a significant difference between students and lecturers for bodily functions ($p = .014$) and daily functioning ($p = .003$) (Table 4). These differences were still significant after controlling for gender, experienced health and the different educational departments. Gender ($p = .040$) also had significant interaction effects when tested in the model for bodily function. Being a female was associated with a higher score on the bodily functioning. All other health dimensions showed no significant difference ($p \leq .05$).

Students appeared to believe that the bodily function and daily functioning of a patient was more important compared to lecturers.

Health domain scores for participants with a disability in the past

No significant differences were found between the composite scores between students and lecturers ($n = 35$) who have (had) a disability for more than 3 months and those without.

Table 2. Reliability score for each health dimension of respondents at Avans University.

Health dimension	Cronbach's alpha
Bodily function	0.67
Mental function & perception	0.77
Spiritual/existential dimension	0.82
Quality of life	0.86
Social & societal participation	0.87
Daily functioning	0.82

Table 3. Mean score for each health dimension.

Mean score per health dimension	Total Mean (SD)	Lecturer Mean (SD)	Student Mean (SD)	Nurse Mean (SD)	Physio Mean (SD)	Doctor Mean (SD)	Patient Mean (SD)
Bodily Function	7.31 (1.03)	6.88 (0.88)	7.22 (0.90)	7.54 (0.87)	7.28 (0.97)	7.25 (0.98)	7.37 (1.13)
Mental function & perception	7.42 (1.17)	7.25 (0.74)	7.12 (1.02)	7.78 (0.88)	7.39 (1.06)	7.18 (1.28)	7.56 (1.22)
Spiritual/existential dimension	7.06 (1.38)	7.00 (1.27)	7.13 (1.10)	7.42 (1.10)	6.99 (1.22)	6.57 (1.58)	7.28 (1.37)
Quality of life	7.64 (1.03)	7.59 (0.78)	7.70 (0.86)	7.89 (0.84)	7.67 (0.86)	7.33 (1.16)	7.74 (1.08)
Social & societal participation	7.33 (1.39)	6.77 (1.12)	6.86 (1.25)	7.48 (1.07)	7.10 (1.08)	6.61 (1.53)	7.27 (1.45)
Daily functioning	7.10 (1.44)	6.20 (1.19)	6.86 (1.31)	7.03 (1.55)	6.89 (1.48)	6.81 (1.43)	7.49 (1.37)

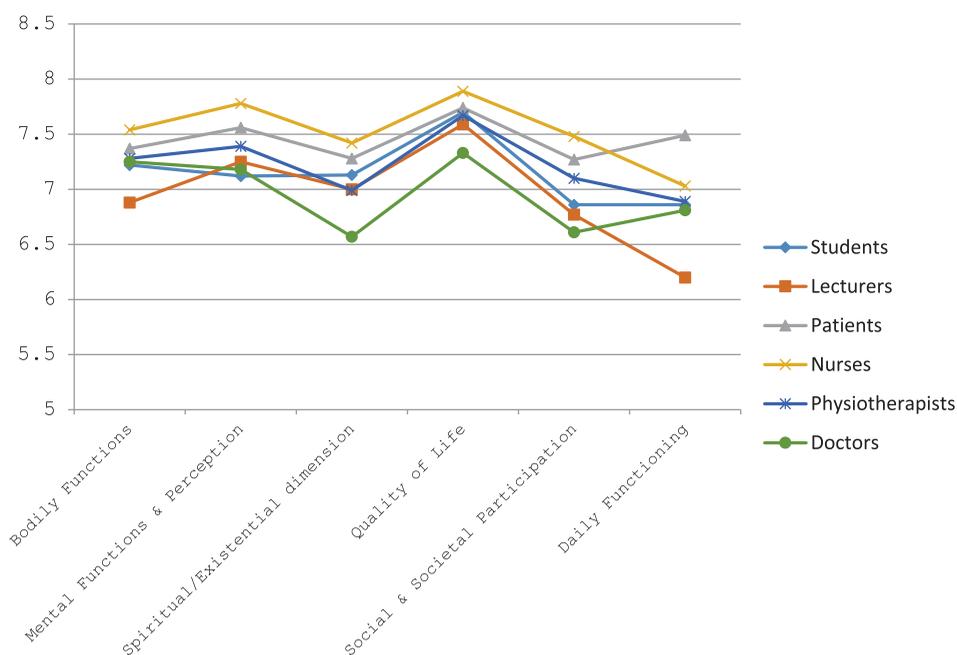


Figure 1. Mean scores for each health dimension, per group.

Table 4. Differences in mean scores for all dimensions between stakeholders and students/lecturers.

Mean score per health dimension	Doctors	Nurses	Physio-therapists	Patients
Bodily Functions				
Students	-0.03	-0.31	-0.06	-0.14
Lecturers	-0.39	-0.68**	-0.42	-0.51**
Mental function & perception				
Students	-0.06	-0.66**	-0.27	-0.44**
Lecturers	0.12	-0.48	-0.09	-0.26
Spiritual/existential dimension				
Students	-0.54**	-0.31	0.12	-0.17
Lecturers	0.50	-0.35	0.08	-0.21
Quality of life				
Students	0.37**	-0.19	0.02	-0.04
Lecturers	0.30	-0.26	-0.05	-0.12
Social & societal participation				
Students	0.26	-0.60**	-0.22	-0.40*
Lecturers	0.25	-0.61	-0.24	-0.41
Daily functioning				
Students	0.04	-0.18	-0.04	-0.64*
Lecturers	-0.59	-0.82*	-0.68*	-1.28**

*significant at <0.05

**significant at <0.01

Health domain scores for different health departments

It appeared that there was a difference in the mean score for the social and societal participation health domain between the Nursing, Physiotherapy and Health Technology department (students and lecturers) but uncontrolled GLM analysis showed no significant difference between the different educational departments (Figure 2).

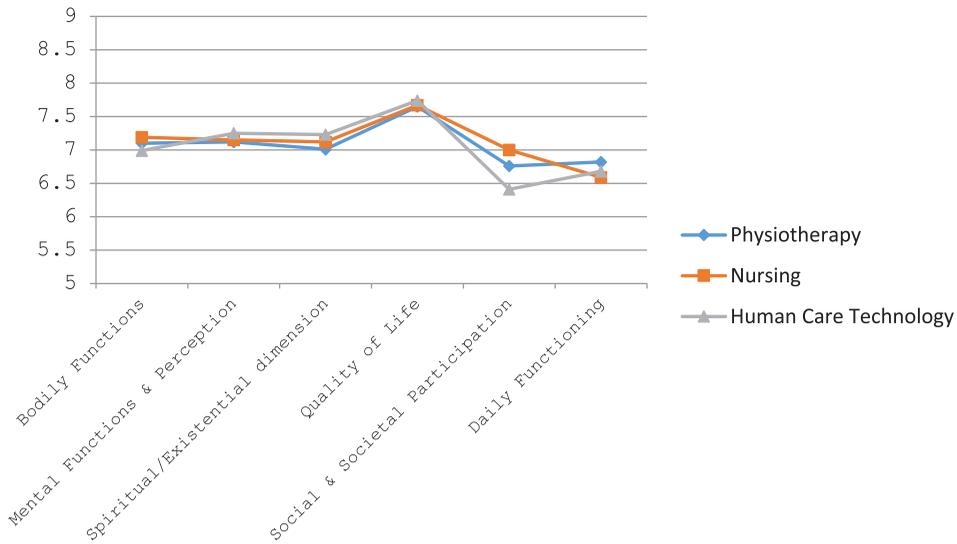


Figure 2. Mean scores for each health dimension, per educational department.

Health domain scores for all different stakeholders

The uncontrolled GLM analysis for all participants showed several significant differences between students, lecturers, patients and different practitioners. The most important significant differences were observed in the bodily function, mental function, social participation and daily functioning domains between students, lecturers and patients.

Nurses seem to score highest for all dimensions except for daily functioning.

Doctors believed the spiritual dimension was less important and quality of life were more important compared to the scores of the students.

Discussion

Findings of this study reveal relatively small differences between lecturers and students compared to patients and various practitioners in the viewpoint of the new health concept. Students scored slightly higher on the domains of 'bodily functions' and 'daily functioning' compared to their lecturers. There were small interaction effects for gender where female students were likely to score higher on the bodily functions score. The differences in scores might be attributed to the age difference between students and lecturers as age appears to be of influence on the perception of the definition of Positive Health (Dierx and Kasper 2018).

For the domains of social participation, mental functioning and daily functioning students scored these aspects to be less important compared to patients. Lecturers scored the aspects of bodily functions and daily functioning less important compared to patients.

Composite scores from this study were comparable to the scores from the original study where the questionnaire was developed and tested (Huber et al. 2016). The difference between lecturers and students might be attributed to the years of experience

with patients where the experience of health is a human experience and does not necessarily have to be attributed the bodily functions and/or daily functioning.

All lecturers and students (1st and 4th year) were requested to fill in the questionnaire by email. There was a relatively low response rate, which might have resulted in a response bias. In the email they were requested to fill in a questionnaire about health, not necessarily mentioning 'Positive Health' leading to the most adequate sample of students and lecturers.

Our study found good reliability scores, except for 'bodily functions' which scored reasonable. Reliability for this domain was also reasonable in the original study, indicating that the questions for this domain might not all represent the domain. However, the design of the questionnaire was done with great care as it was developed from a qualitative study with a bottom-up approach from 556 expressed indicators that resulted in a consensus process of the 6 health domains included in the questionnaire (Huber et al. 2016).

The number of people who had a personal experience with disability in the past was low (35 people), which might be the reason why we did not find a significant difference between people with and without a disability in the past on the mean scores. The original study found that composite scores of physicians with a disability scored significantly higher on several domains. Having a chronic disease might therefore influence the experience of health and doctors without this experience should be able to reflect more with the patients experience in order to represent patient centered care.

The questionnaire forced participants to score all dimensions of health but whether students and lecturer would take all domains into account when treating a patient remains unknown.

Comparison with the literature

Cure, protection, prevention, and promotion of health have to work hand in hand in synergy and support each other in order to gain the optimal health results. From the literature it is known that the biomedical model has little support to deal with the prevention of chronic disease because of its inability to change health beliefs, attitudes and behaviors which are important factors in light of prevention and health promotion. A common expanded definition of health promotion is offered by the American Journal of Health Promotion as 'Health promotion is the science and art of helping people change their lifestyle to move towards a state of optimal health. Optimal health is defined as a balance of physical, emotional, social, spiritual, and intellectual health' (O'Donnell 1989). Health was usually seen as a four dimensional concept including physical, social, mental and spiritual dimensions (Nutbeam 2009). The Positive Health model, like the newer definition for health promotion (O'Donnell 2009), describes similar dimensions of health, besides physical health and daily functioning. It incorporates psychosocial factors like spirituality, social interactions, participation, emotional well-being and quality of life. Evidence demonstrates a strong positive connection between well-being, quality of life and perceived health which are all strongly related to objective health (Lindström & Eriksson, Contextualizing salutogenesis and Antonovsky in public health development., Lindström and Eriksson 2006; Dierx and Kasper 2018). Another model that is linked very closely with the Positive Health model is the salutogenic model (Lindström and Eriksson 2010). As this model implies strengthening people's health potential will lead to a more productive, enjoyable and health life (Antonovsky 1996). Bauer et al. (2006) has proposed another model positioning

salutogenesis and positive health in relation to negative health (i.e. presence of disease according to the WHO definition) (Bauer, Davies, and Pelikan 2006). However, this framework bears no tools for putting the concept into daily practice. Another topic of discussion is the origin of the definition, as the model tested in this study was empirical and emerged from qualitative research within the Dutch population. As definitions of health can differ between populations or ethnicities (because of their values, attitudes and aspirations) generalizability might be debatable as was seen with many indigenous populations all over the world (Committee on Indigenous Health 2002). Although the Netherlands is not inhabited by an indigenous population we do have a multicultural population. Over the last decades the Netherlands has become more ethnically diverse but ethnicity as a characteristic was not measured in either the original study population nor the current study population of students and teachers. The benefit of the Positive Health concept make it possible for patients to discuss the domains that are relevant to the individual, leaving room for flexibility in a multicultural population.

The most crucial step of using any health definition or model is the feasibility. However, it remains challenging for the practitioner to be able to promote health at the individual level (health education). Using the model of Positive Health, the practitioner can use the web diagram tool in communication with the client/patient, suggesting possible topics for subjective evaluation or protentional actions for improvement. From research in mental health services we know that a similar approach already proved to be a useful tool in communication between care providers and patients (Griffiths et al. 2007). As shown in this study the perception of certain health dimensions might differ between students, teachers and patients. This finding warrants reflection on the content of medical training and possibly using the web diagram of the Positive Health model as a tool for communication in order to possibly exclude personal health perceptions.

Conclusion

Our results suggest that both students and lecturers regard all domains of the new health concept as important in defining health with small variations between the groups. These differences in scores should be addressed in educational programs of health professionals because all aspects of health are important to the patient's experienced health. If students keep working within the context of the definition of the World Health Organization, important domains of health might not be addressed when caring for or treating patients.

Implications

Physical aspects have become less important to the definition of health and that this warrants reflection on the content of medical training.

Curricula for health professionals should emphasize a broad perception of health and should be able to ask targeted questions for these different health domains. Both professions already endorsed the new health concept in the competency profile, but how curricula teach the relevant competencies is unknown and might differ greatly. The research group has made a lesson plan for students in health care to get accustomed with the model for Positive Health and how to utilize the model in practice. Huber et al. (2016) has proposed a web diagram to use as a tool for communication between professionals and patients to

investigate in which health domain(s) the patient would wish to improve. This web diagram can be found online on the website (Institute for Positive Health 2019). Future research could focus on the validity and feasibility of the web diagram. Using this new concept we could empower patients and it would reflect a more patient centered approach leading to better health education and promotion. Further research should focus on the use of this new model and patient approach.

Acknowledgements

Authors would like to thank all teachers and students from the Applied University of Avans that took the effort to respond to the questionnaire. We thank Machteld Huber for providing the data from her original study.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This research received no specific grant from any funding agency.

References

- Aldana, S., Whitmer, W., Greenlaw, R., Avins, A., Salberg, A., Barnhurst, M., Fellingham, G., Lipsenthal, L. 2003. "Cardiovascular Risk Reductions Associated with Aggressive Lifestyle Modification and Cardiac Rehabilitation." *Heart & Lung : the Journal of Critical Care* 32 (6): 374–382. doi:10.1016/S0147.
- Alexander, W. (2013, September 17). Troonrede 2013. Den Hage, Netherlands. Accessed September 1 2016, <https://www.rijksoverheid.nl/documenten/toespraken/2013/09/17/troonrede-2013>
- Alwan, A., D.Maclean, L. Riley, E.d'Espaignet, C. Mathers, G.Stevens, and D. Bettcher. 2010. "Monitoring and Surveillance of Chronic Non-Communicable Diseases: Progress and Capacity in High-Burden Countries." *Lancet* 376 (9755): 1861–1868. doi:10.1016/S0140-6736(10)61853-3.
- Antonovsky, A. 1996. "The Salutogenic Model as a Theory to Guide Health Promotion." *Health Promotion International* 11: 11–18. doi:10.1093/heapro/11.1.11.
- Bauer, G., J. Davies, and J. Pelikan. 2006. "The EUHPID Health Development Model for the Classification of Public Health Indicators." *Health Promotion International* 21 (2): 153–159. doi:10.1093/heapro/dak002.
- Committee on Indigenous Health. 2002. *The Geneva Declaration on the Health and Survival of Indigenous Peoples*. New York (NY): United Nations Permanent Forum on Indigenous Issues.
- Dierx, J., and J.Kasper. 2018. "De Meerwaarde Van Positieve Gezondheid Voor De Gepercipieerde Gezondheid." *Tijdschrift Voor Gezondheidswetenschappen*, no. 6. doi:10.1007/s12508-018-0162-x.
- Gage, T. 2005. "Are Modern Environments Really Bad for Us?: Revisiting the Demographic and Epidemiologic Transitions." *American Journal of Physical Anthropology* 41: 96–117. doi:10.1002/ajpa.20353.
- Griffiths, T., G.Giarchi, A. Carr, P.Jones, and S. Horsham. 2007. "Life Mapping: A 'Therapeutic Document' Approach to Needs Assessment." *Quality of Life Research* 16: 467–481. doi:10.1007/s11136-006-9139-3.

- Huber, M., J.Knottnerus, L.Green, H.van der Horst, A. Jadad, D.Kromhout, ... H. Smid. 2011. "How Should We Define Health?" *British Medical Journal*. doi:10.1136/bmj.d4163.
- Huber, M., M. van Vliet, M.Giezenberg, B.Winkens, Y.Heerkens, P. Dagnnelie, and J.Knottnerus. 2016. "Towards a 'Patient-Centred' Operationalisation of the New Dynamic Concept of Health: A Mixed Methods Study." *British Medical Journal* 6. doi:10.1136/bmjopen-2015-010091.
- Institute for Positive Health. (2019, maart 28). Retrieved from <https://iph.nl/downloads/>
- Jambroes, M., T.Nederland, M. Kaljouw, K. van Vliet, M.-L. Essink-Bot, and D.Ruwaard. 2016. "Implications of Health as 'The Ability to Adapt and Self-Manage' for Public Health Policy: A Qualitative Study." *The European Journal of Public Health* 1–5. doi:10.1093/eurpub/ckv206.
- Lindström, B., and M.Eriksson. 2006. "Contextualizing Salutogenesis and Antonovsky in Public Health Development." *Health Promotion International* 21 (3): 238–244. doi:10.1093/heapro/dal016.
- Lindström, B., and M.Eriksson. 2010. *The Hitchhiker's Guide to Salutogenesis: Salutogenic Pathways to Health Promotion*. Helsinki: Folkhälsan Research Centre.
- Mathers,C., and D.Loncar. 2006. "Projections of Global Mortality and Burden of Disease from 2002 to 2030." *PLoS Medicine* 3 (11): e442. doi:10.1371/journal.pmed.0030442.
- McGregor, S. 2001. "Neoliberalism and Health Care." *International Journal of Consumer Studies* 25 (2): 82–89. doi:10.1111/j.1470-6431.2001.00183.x.
- McKeown, R. 2009. "The Epidemiologic Transition: Changing Patterns of Mortality and Population Dynamics." *American Journal of Lifestyle Medicine* 3 (1 suppl): 19S–26S. doi:10.1177/1559827609335350.
- Nunnally, J. 1978. *Psychometric Theory*. 2nd ed. New York: McGraw-Hill.
- Nutbeam, D. 2009. "Defining and Measuring Health Literacy: What Can We Learn from Literacy Studies?" *International Journal of Public Health* 54: 303–305. doi:10.1007/s00038-009-0050-x.
- O'Donell, M. 2009. "Definition of Health Promotion 2.0: Embracing Passion, Enhancing Motivation, Recognizing Dynamic Balance, and Creating Opportunities." *American Journal of Health Promotion : AJHP* 24 (1): 4.
- O'Donnell, M. 1989. "Definition of Health Promotion: Part III: Expanding the Definition." *American Journal of Health Promotion* 3 (3): 5. doi:10.4278/0890-1171-3.3.5.
- Speck, R., K. Courneya, L. Mâsse, S. Duval, and K. Schmitz. 2010. "An Update of Controlled Physical Activity Trials in Cancer Survivors: A Systematic Review and Meta-Analysis." *Journal of Cancer Survivorship : Research and Practice* 4 (2): 87–100. doi:10.1007/s11764-009-0110-5.
- Ministerie van Volksgezondheid, welzijn en Sport. 2010. *Welzijn Nieuwe Stijl*. Ministerie van Volksgezondheid, Ed. Den Haag. Retrieved September 2016. http://www.invoeringwmo.nl/sites/default/documenten/Brochure_WNS.pdf
- WHO. 2008. *The Global Burden of Disease: 2004 Update*. Geneva: World Health Organization.
- WHO. 2018. *Noncommunicable Diseases Country Profiles 2018*. Geneva: World Health Organization.