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Implications of health as ‘the ability to adapt and self-manage’ for public health policy: a qualitative study

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Background: To explore the implications for public health policy of a new conceptualisation of health as ‘*The ability to adapt and to self-manage, in the face of social, physical and emotional challenges*’. **Methods:** Secondary qualitative data analysis of 28 focus group interviews, with 277 participants involved in public health and healthcare, on the future of the Dutch healthcare system. WHO’s essential public health operations (EPHOs) were used as a framework for analysis. **Results:** Starting from the new concept of health, participants perceived health as an individual asset, requiring an active approach in the Dutch population towards health promotion and adaptation to a healthy lifestyle. Sectors outside healthcare and public health were considered as resources to support individual lifestyle improvement. Integrating prevention and health promotion in healthcare is also expected to stimulate individuals to comply with a healthy lifestyle. Attention should be paid to persons less skilled to self-manage their own health, as this group may require a healthcare safety net. The relationship between individual and population health was not addressed, resulting in little focus on collective prevention to achieve health. **Conclusions:** The new concept of health as a basis for changes in the healthcare system offers opportunities to create a health-promoting societal context. However, inequalities in health within the general population may increase when using the new concept as an operationalisation of health. For public health, the main challenge is to maintain focus on the collective socioeconomic and environmental determinants of health and disease and, thereby, preserve collective prevention.

Introduction

In 2011, Huber et al.¹ challenged the WHO definition of health, formulated in 1948 as ‘*A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*’ by introducing a new concept of health as ‘*The ability to adapt and to self-manage, in the face of social, physical and emotional challenges*’.² The WHO definition has been criticised with regard to: (i) the static nature of the definition, i.e. health as a state, (ii) the changing patterns of morbidity and (iii) the operationalisation of the definition. Operationalisation of health as a state of ‘complete physical, mental and social well-being’ is difficult because it is not easy to either define or measure ‘complete’. Moreover, critics said, the requirement of complete well-being has contributed to the medicalisation of society.^{3–6} Patterns of population morbidity have changed since 1948 and the numbers of persons living with one or more chronic diseases has increased worldwide.^{7–9} According to WHO’s definition, all these individuals are considered to be ‘ill’, without taking into account their level of functioning or well-being.

The new conceptualisation may meet some limitations of the WHO definition, as it is more dynamic and emphasises the resilience and capacity of people to cope with chronic disease. From the point of view of the new concept, people can be ‘healthy’ while living with chronic disease; therefore, compared

with the WHO definition of health, more people can be considered to be ‘healthy’. Moreover, the new concept addresses the opportunities available to the individual, rather than focusing on their disabilities.^{10, 11}

The new concept has also received criticism, some related to public health. Public health is defined as the science and art of preventing disease, prolonging life and promoting health, through the organised efforts of society.⁹ The critical comments focused on the risk of reactive instead of proactive actions for health by individuals and professionals, since challenges to be faced in life are unknown until they occur. Others mentioned that the new concept is only applicable in circumstances that are within one’s control, whereas some social determinants of health may preclude the ability of individuals and communities to adapt to their circumstances.^{12–14}

We conducted a qualitative directed content analysis of data from group interviews with stakeholders in Dutch public health and healthcare to analyze the implications of the new conceptualisation of health as the ability to adapt and self-manage for public health policy.

Methods

Study design

The new conceptualisation of health is one of the pillars supporting the recent formal advice to the Dutch Minister of Health intended to

Table 1 Overview groups of participants in the focus groups

Focus groups
Institutions for health care education and training
University medical centres 1
University medical centres 2
Lifelong learning, post-graduate education
Inspectorate of Health Care
Pharmacy
Municipal Health Services
Healthcare entrepreneurs
Professionals mental healthcare
Social workers
Physiotherapists
Nursing
Midwifery care
Primary care
Medical specialists
Institutes for Research and Development
Dental hygienists
Patients 1
Patients 2
Patients 3
Professional organisations
Ministry of Health, Welfare and Sports
Dutch organisation of volunteer work
Representatives from patient, educational and healthcare organisations in Amsterdam
Representatives from patient, educational and healthcare organisations in province Friesland
Care for disabled persons
Institutions of Mental Healthcare
Welfare organisations

prepare healthcare professions and health education to effectively cope with future challenges in healthcare.¹⁵ The pros and cons of the new concept of health were the subject of a qualitative study based on focus group interviews with stakeholders in Dutch public health and healthcare. We used these data for a secondary data analysis.

Sample

A purposive sampling strategy was used to recruit focus group participants representing different stakeholder groups in the public health and healthcare sectors, as well as different organisations in the field of practice, research, education and policy (table 1).

The 28 group interviews included 8 persons on average (277 participants in total) and each group session lasted ± 1.5 h.

Data collection

Data were collected during September through November 2013. Focus groups discussed four open-ended questions: (i) Reflect on the new concept of health, (ii) What does a future healthcare system based on the new concept of health mean for citizens and their networks, (iii) What support do citizens need in such a system and (iv) What should be done to achieve such a system?

The focus groups were moderated by skilled facilitators with a background in public health or healthcare. An additional person was present to take notes. All discussions were tape recorded, anonymised and transcribed into summary reports. Later, the reports were sent to the participants to be checked for accuracy.

Ethics statement

Every effort was made to effectively inform the participants and protect their privacy. According to Dutch law, no formal ethical approval was required for this study.

Table 2 The WHO's EPHOs

EPHOs
1 Surveillance of population health and well-being
2 Monitoring and response to health hazards and emergencies
3 Health protection including environmental occupational, food safety and others
4 Health promotion including action to address social determinants and health inequity
5 Disease prevention, including early detection of illness
6 Assuring governance for health and well-being
7 Assuring a sufficient and competent public health workforce
8 Assuring sustainable organisational structures and financing
9 Advocacy communication and social mobilisation for health
10 Advancing public health research to inform policy and practice

Framework for analysis

For the analysis, we operationalised public health according to the aim of our study to assess the implications of a new conceptualisation of health for public health policy as well as according to 10 essential public health operations (EPHOs) WHO Europe (WHO EUR) defined in 2012.¹⁶ A systematic direct content analysis was conducted, using WHO EUR EPHOs as initial coding categories (table 2). We added 'health safety net' as a category as this is a specific public health operation in The Netherlands.¹⁷

This analysis involves a systematic process of sifting, charting and sorting material according to the EPHOs, going through the following stages: familiarisation with the data, identification of the thematic framework, indexing, charting and mapping and interpreting.^{18, 19}

The familiarisation stage provided an overview of the richness and diversity of the data. Notes on the responses on EPHOs and on additional and recurrent public health themes and issues that appeared to be important to participants were used to develop a thematic framework of the EPHOs extended with key public health themes.

Subsequently the framework was systematically applied to the material and all data were reread and annotated accordingly. The coding was done manually by M.J. and checked by T.N., who organised the focus group discussions.

Finally, the tables with headings and subheadings for each theme of the framework were used to describe patterns and connections through an iterative, comparative process of searching, reviewing and comparing the data. Potential discrepancies were identified and solved in discussions among M.J., D.R., M.L.E.B. and T.N.

Results

Key themes emerging

Overall, participants supported the new concept of health. Four key patterns emerged regarding implications for public health: (i) health as an individual asset, (ii) health as a healthy lifestyle, (iii) health as focus of the healthcare system and (iv) health in the context of social support.

Health as an individual asset

Starting from the new concept of health, participants perceived health as an individual asset. According to the participants the new concept places emphasis on people's own responsibility for health and implies an individual and active approach towards health and a healthy lifestyle, table 3, quotation 1.

Respondents also pointed out potential side effects of the new concept, including i) the inability of certain groups to adapt and self-manage, ii) the risk of 'blaming the victim' and iii) the neglect of certain public health services.

Table 3 Quotations of the focus groups

1. *The new definition is related to the fact that, nowadays, we value having control over our own lives more than just the absence of disease. 'The goal of self-realization and a resilient and responsible life is definitely preferable to dealing with the illness or the disability model.'*
2. *We're always talking about the responsible citizen, but the question is whether it's possible for all groups to take control. 'In the new concept the responsibility lies with the citizen, who needs to have certain abilities or skills. However, there is a considerable "range" in ability - people differ considerably.'*
Also, there is such a thing as a hierarchy in the possibilities of being able to take responsibility for restoring health.
The premise is that people are able to take control. However, not everyone can participate according to the ideal of the new concept: for example, people aged 85+, the frail elderly, and those with mild intellectual disabilities. Not everyone can get involved and we as a society have a responsibility to support these people.
3. *'If you're not healthy, or if you fail to find a balance, is that your own fault?'*
4. *'First of all, a situation is created in which vulnerable people are easily told that it's their own fault and that they're to blame and remain in default: i.e. "blaming the victim".'*
5. *'If we consider how infant care is provided, then that's a good example of outreach care. Child health clinics are fully incorporated into our healthcare culture and we see that it works very well - especially the preventive side of health care. We shouldn't throw outreach care overboard.'*
6. *'When we mastered the infectious diseases, we didn't suddenly abolish that approach. Good things that occur nowadays shouldn't suddenly be abolished, we need to maintain them and develop new things.'*
7. *In Sweden, in the primary schools children learn that if they have stomach ache then they should try and think where it comes from - did I eat something wrong, or am I nervous? This makes children more resilient so that later on, also with more serious conditions, they can ask the same questions.*
8. *'I have a friend who's 60 years old and much too fat. He's already had two hip operations and now has a problem with his knee. Not one of the professionals has ever mentioned his being overweight - and my friend never talks about it himself. What a missed opportunity!'*
9. *'The funding system needs to assume that you pay for your good health and not for sickness. The incentive between treatment and payment should be removed.'*
10. *'You can't bring about a change in citizens, unless you also properly scrutinize the funding system. There is no funding for a good conversation with a patient, which is not directly aimed at delivering a healthcare product.'*
11. *I live in Maastricht, where a lot of people who regret leaving are coming back again. These are people who moved away from the city, but have now decided to return. Between friends and acquaintances we say: 'Come and live within 'walking frame' distance!' We already have 10 friends who live close by and, later on, if there's a problem we can help each other'.*
12. *We should aim for smaller residential communities to encourage living together - people who are in the same situation, who are willing to support each other.*

Ability to adapt and to self-manage across the population

In the new conceptualisation, adaptation and self-management are considered prerequisites to be healthy. Participants indicated that several groups might be unable to fulfil these requirements as individuals differ in their inherent capacity to adapt and to self-manage. For example, frail older people, or persons with mild mental disorders, are less able to manage their own health. People who are less advantaged in terms of education, income or social position, might have lower health literacy skills which may also impair their ability to adapt and self-manage. In terms of the new concept of health, these persons would be labelled as 'unhealthy' and would probably never be able to achieve the status 'healthy'.

When applying the new concept of health some participants expected that the aforementioned groups would become more

vulnerable, possibly leading to an increase in inequalities in health. As a result, more people would need help from the healthcare safety net. One focus group indicated that supporting the health of less skilled persons should be considered a societal responsibility, table 3, quotation 2.

Blaming the victim

Several respondents indicated the risk of 'blaming the victim' as an inherent side effect when individuals are considered to be responsible for their own health. When health problems occur these might be seen as a result of their own choice for unhealthy behaviour.

Vice versa, people with sufficient ability to adapt and self-manage their health may be less willing to pay for the healthcare costs of people who 'chose' for an unhealthy lifestyle. In turn, this may affect the financial solidarity of our healthcare system. table 3, quotations 3 and 4.

Public health services

Some participants acknowledged that the emphasis on individual responsibility to adapt and self-manage could lead to neglect of important population-based public health services that contribute to our current population health status. Preventive youth healthcare was proposed as a representative example, see table 3, quotations 5 and 6.

Health as a healthy lifestyle

Participants interpreted being responsible for your own health as adopting a healthy lifestyle. They considered choosing for healthy behaviour to be the best option to take this responsibility and to prevent health problems. Participants stressed that people would need support to adapt to a healthy lifestyle and suggested that such support should also come from sectors outside healthcare. Several strategies were mentioned that might increase a person's adaptability, including education, health protection and (within healthcare) health promotion.

Education

Participants believed that people need health education to become more health literate and health education should start early in life; primary schools could play an important role in educating children in health literacy and self-control. Also secondary schools and sports clubs could contribute to teaching children about health promotion. table 3, quotation 7.

Health protection

Respondents indicated that authorities need to be supportive in creating a healthy (i.e. an adapting and self-managing) population. They mentioned various health protective options that might help, such as rules, regulations and legislation. For example, legislation on age restrictions for buying cigarettes or regulations on the use of salt in food products.

Health promotion

Participants indicated that health promotion within the healthcare sector, offered by healthcare providers, could play a role in supporting people to adapt and self-manage. For example, care providers should not restrict consultations to treatment alone but should also address options for health promotion and prevention to support people in making responsible and informed choices about their health. According to the participants, health promotion should be a key competence for all health professionals, as illustrated with the following example, table 3, quotation 8.

Health as focus of the healthcare system

Some participants indicated that health as the ability to adapt and to self-manage requires a change in the focus of the healthcare system: health as the ability to adapt and self-manage should become the outcome measure. Adapting the current financial model of healthcare was mentioned as a strategy to change incentives in the direction of the desired outcome of the healthcare system: prevention of disease and maintenance of good health should be reimbursed instead of solely treatment of diseases. table 3, quotations 9 and 10.

Health in the context of social support

Although participants approached prevention mainly as health promotion and measures to support adaptation to a healthy lifestyle, other aspects to support individual health were also discussed. Social mobilisation for health (through social and community care networks) was suggested as an aspect of prevention that would become increasingly important, i.e. participants believed that social support through community networks would help individuals to take responsibility for their own health and to support others in this aim. table 3, quotations 11 and 12.

Discussion

Our findings reveal that a new conceptualisation of health as '*The ability to adapt and self-manage*' may stimulate an active approach of individuals towards health promotion and adaptation to a healthy lifestyle. The new concept also provides support for creating a health-promoting society that helps individuals to adapt and self-manage. Health promotion should become a competence of all healthcare providers. Our findings did not show that the new conceptualisation encourages a focus on the relationship between individual and population health; this resulted in a low priority among the participants for collective prevention to achieve health. Moreover, the results show the new conceptualisation may result in an increase of socioeconomic inequalities in health because not all individuals are equally capable of taking care of their own health.

Interpretation of the findings

The results show that a different conceptualisation of health may result in a change of priorities for public health operations and thus in the EPHOs to be delivered. The observation that focus group participants perceived health as an individual asset requiring an active approach in the population towards health promotion and adaptation to a healthy lifestyle will lead to an increase in the need and delivery of EPHO 'health promotion', which may impact training needs. Furthermore, an increase of health promotion within the curative sector offered by medical care providers implies that health promotion must be a key competence for all physicians, including medical specialists and general practitioners. With regard to public health policy and training needs, this implies an extension of public health training needs towards professionals in the curative sector as well. The need for incorporation of health promotion and public health competencies within the curricula of all physicians has been advocated before, by the Lancet committee on Education of health professionals for the twenty-first century and also by Levy and Wegman, Plochg and Essink-Bot.^{20–23}

The fact that 'health as an individual asset' and 'health as a healthy lifestyle' were addressed in more detail than 'health as focus of the healthcare system' and 'health in the context of social support' may be a result of the methodology. It might be that participants of the focus groups address issues regarding a personal level easier than on a social- or healthcare system level. However, this requires further research.

Earlier comments, that the new conceptualisation of health would stimulate a reactive attitude towards health, were not confirmed in

this study.¹² This unexpected finding might be explained by the context of the health policy in The Netherlands. The current national government strongly advocates holding people responsible for their own health. As part of this policy, and during the period in which the focus group interviews took place, the government was preparing the decentralisation of several national healthcare and public health services to local governments. However, participants in the focus groups were explicitly asked to provide their views on the future healthcare system in 2030, starting from the new concept of health. Whether the new conceptualisation of health would stimulate an active approach towards health in other European countries as well requires further research, as public health systems are different among the European member states.

Our study also revealed some potentially serious threats for public health. The most important is the possible neglect of socioeconomic, cultural and environmental determinants of health.²⁴ The WHO definition also fails to address these determinants, and our findings suggest that this is not likely to improve when using the new concept of health. Ignoring those determinants and, thus, collective prevention programmes for health will not only negatively affect population health but also may lead to increasing health inequalities which can in turn negatively influence individual health.²⁵

Known causes of persisting inequalities in health include inequalities in education, income and social position. The creation of equal opportunities of health requires action within the healthcare system, as well as on the conditions in which people are born, develop, work and age and on the drivers of these conditions.^{26, 27} Interventions to improve these conditions not only need strong governance for health through the collective effort of society but also need support from society itself.

Persons with lower health literacy skills are more likely to have a lower health status than individuals with good health literacy skills.²⁸ Our results suggest that health conceptualised in terms of adaptation and self-management challenges equal opportunities for health even more, because several groups may lack sufficient ability to adapt and self-manage. In a society and a healthcare system of increasing complexity, these groups may become even more vulnerable.²⁹ Therefore, the new conceptualisation of health may lead to an increase of health inequalities.

Strengths and limitations of the study

An important strength is the large number of focus groups held and the variety of stakeholders and organisations represented. Nevertheless, all focus group participants were invited because they either work in public health or healthcare, or they are patients; this means that citizens from the general population and stakeholders working in sectors other than (public) healthcare were not represented in the focus groups. This may have led to underrepresentation of persons with less health literacy skills and of sectors outside the healthcare sector. However, both the vulnerable position of persons with low health literacy skills and the role of sectors other than healthcare were extensively addressed.

Another limitation was that the implications of the new concept of health for public health were not the primary focus of the groups. That may partly explain why some aspects of public health were not addressed during the interviews. However, by means of the various items included in the topic list, respondents were invited to mention the relevance of collective prevention and the wider determinants of health as part of the new system.

Implications for public health policy

In making changes in the healthcare system based on the new concept of health, we recommend to integrate support of adaptation and self-management of individuals into the whole healthcare system. Second, at a population level, we strongly

recommend to nurture, maintain and improve collective prevention. Finally, we recommend to combat health inequalities and promote the health of disadvantaged groups by integrated approaches that reach beyond the healthcare sector.

Future research on the conceptualisation of health as adaptation and self-management should focus on monitoring the effects on population health, and on further exploration of how to increase the opportunities for public health and how to integrate public health and healthcare.

Conclusions

The new concept of health offers opportunities to create a health-promoting societal context; however, some inequalities in health within the population may increase. For public health, the main challenge is to maintain the focus on the collective socioeconomic and environmental determinants of health and disease and, thereby, preserve collective prevention. Individuals who are less able to take care of their own health will need our continuous support and the presence of an effective healthcare safety net.

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Key points

What is already known?

- In 2011 a new concept of health as ‘*The ability to adapt and to self-manage, in the face of social, physical and emotional challenges*’ was introduced and received both positive and critical comments.
- Some of the criticisms were related to public health. Implications related to the use of the new conceptualisation of health for public health policy are not yet known.

What this study adds?

- The main challenge of the new concept of health for public health is to maintain focus on the collective socioeconomic and environmental determinants of health and disease and, thereby, to preserve collective prevention.

References

- 1 Huber M, Knottnerus JA, Green L, et al. How should we define health? *BMJ* 2011; 343:d4163.
- 2 WHO. Constitution of the World Health Organisation. 2006. www.who.int/governance/eb/who_constitution_en.pdf.
- 3 What is health? The ability to adapt. Editorial. *Lancet* 2009; 373:781.
- 4 Jadad AR, O’Grady L. How should health be defined? *BMJ* 2008; 337:a2900.
- 5 Larson JS. The conceptualization of health. *Medical Care Res Rev* 1999; 56:123–36.
- 6 Smith R. The end of disease and the beginning of health 2008. *BMJ Group Blogs*, 2008; Available at: <http://blogs.bmj.com/bmj/2008/07/08/richard-smith-the-end-of-disease-and-the-beginning-of-health/>. last accessed date Nov 22 2015
- 7 Marengoni A, Angleman S, Melis R, et al. Aging with multimorbidity: a systematic review of the literature. *Ageing Res Rev* 2011; 10:430–9.
- 8 Barnett K, Mercer SW, Norbury M, et al. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet* 2012; 380:37–43.
- 9 Lozano R, Naghavi M, Foreman K, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380:2095–128.
- 10 Bellieni CV. Re: How should we define health? *BMJ* 2011; 343:d4163.
- 11 Ogwido MO. Re: WHO definition of health does not remain fit for purpose. *BMJ* 2011; 343:d4163.
- 12 Becker CM. Re: How should we define health? *BMJ* 2011; 343:d4163.
- 13 Popay J. WHO definition of health does remain fit for purpose. *BMJ* 2011; 343:d4163.
- 14 Macaulay AC. Re: How should we define health? *BMJ* 2011; 343:d4163.
- 15 Kaljouw M, Vliet K. Towards new health and health professions, the outline. Diemen: National Health Care Institute, 2015.
- 16 European Action Plan for Strengthening Public Health Capacities and Services. Malta: World Health Organisation, regional office for Europe, 2012. http://www.euro.who.int/__data/assets/pdf_file/0005/171770/RC62wd12rev1-Eng.pdf
- 17 Jambroes M, Essink-Bot ML, Plochg T, et al. [Public health in the Netherlands –a definition and 10 essential functions]. *Nederlands tijdschrift voor geneeskunde* 2012; 157:A6195.
- 18 Pope C, Ziebland S, Mays N. Qualitative research in health care. Analysing qualitative data. *BMJ* 2000; 320:114–6.
- 19 Rabiee F. Focus-group interview and data analysis. *Proc Nutr Soc* 2004; 63:655–60.
- 20 Essink-Bot ML. Population healthcare including patients, 2013. Available at: http://issuu.com/ellenwiggemansen/docs/population_healthcare__including_pa. date last accessed Nov 22 2015
- 21 Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; 376:1923–58.
- 22 Levy BS, Wegman DH. Commentary: public health and preventive medicine: proposing a transformed context for medical education and medical care. *Acad Med* 2012; 87:837–9.
- 23 Plochg T, Klazinga NS, Starfield B. Transforming medical professionalism to fit changing health needs. *BMC Med* 2009; 7:64.
- 24 Dahlgren G, Whitehead M. *Policies and Strategies to Promote Social Equity in Health*. Stockholm, Sweden: Institute for Futures Studies, 1991.
- 25 Arah OA. On the relationship between individual and population health. *Med Health Care Philosophy*. 2009; 12:235–44.
- 26 Marmot M, Allen J, Bell R, et al. WHO European review of social determinants of health and the health divide. *Lancet*. 2012; 380:1011–29.
- 27 Mackenbach JP. The persistence of health inequalities in modern welfare states: the explanation of a paradox. *Soc Sci Med* 2012; 75:761–9.
- 28 Berkman ND, Sheridan SL, Donahue KE, et al. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med*. 2011; 155:97–107.
- 29 Vrooman C, Gijssels M, Boelhouwer J. [Differences within the Netherlands], Social and Cultural report 2014. Den Haag: Sociaal en Cultureel Planbureau, 2014.

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