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ORIGINAL ARTICLE

Community maturity to implement Health in All Policies

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Abstract
Objectives To provide a fundament for practical guidance on implementation of HiAP to Danish Municipalities HiAP.
Methods This study is based on a descriptive case study design where a mixed method is used. A questionnaire survey with 64 respondents was conducted in the five political sectors of Esbjerg municipality and it was followed up by four semi-structured interviews with key respondents based on a Dutch prototype model from 2014; The Capability Maturity Model for HiAP.
Results The Maturity Model was applied in Esbjerg Municipality and proved practical for the assessment of the growth process of HiAP. Esbjerg municipality is assessed to be at maturity level 2 in the implementation process of HiAP, where the approach is recognized and considered to tackle health inequalities.
Conclusion The Maturity Model for HiAP has proved suitable for assessing the implementation process of HiAP on a municipality level and establishes a fundament for practical guidance in the area.

Keywords Health in All Policies · Implementation · Local government · Municipality · Intersectoral action

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Introduction

Within the area of public health it is well known that health and health inequalities within a population are affected by determinants that lie outside the traditional objective of the health sector. For example, lack of physical activity leads to many health problems and key determinants of it are mostly related to poor environment, poor physical planning, lack of financial resources, lack of education; all of those determinants are beyond responsibilities of a health sector. Health in All Policies (HiAP) is an approach to public policies that systematically takes the social determinants of health into account across of the societal sectors (Leppo et al. 2013). The approach has been explicit on the international health agenda since the Alma Ata declaration in 1978 and the Ottawa Charter in 1986 under different terminology such as healthy public policy and intersectoral action (ISA) (WHO 1978, 1986). Since then it has been a recurring topic, recently emphasized at the Eighth global conference on health promotion in Helsinki resulting in the Helsinki statement (WHO 2014). The statement declares that Health for All and equity in health should be a central goal for all governments for sustainable development, and an approach to achieve this is Health in All Policies.

The shift from a vertical perspective on health to a horizontal (Puska and Stahl 2010), has been on the agenda of the Danish government since 1980s (Sundhedsstyrelsen 2012; Regeringen 2002). The structural reform by 1st January 2007 moved major responsibilities on public health to municipalities and most of municipalities developed own health policies soon after the reform (Kraemer et al. 2014). Many Danish municipalities turn their attention toward Health in All Policies approach (Larsen 2014) yet, no knowledge exits on how far the Danish municipalities are in the process of implementing HiAP.

Studies carried out on the topic have mainly focused on the knowledge of HiAP and facilitators and barriers for implementation of the approach (Kamper-Jørgensen and Bistrup 2005; Fredsgaard 2010; Larsen 2014).

There is a need for a method that is able to assess how far a government is in the process of implementing HiAP. Without this knowledge practical guidance to governments on how to proceed in the implementation is shorthanded. A Dutch study from 2014 has developed a prototype model to address this issue; the Maturity Model for HiAP (MM-HiAP), which assess on what stage HiAP is established at a local government level (Storm 2014).

Method

The method used in this study was a descriptive case study, with the local government of Esbjerg municipality agreeing to cooperate as the case. No other Danish municipalities were considered due to time and cost limitations. A mixed method was applied, consisting of a quantitative core in the form of a questionnaire, which were followed by interviews. Both methods were structured using the MM-HiAP.

The Maturity Model for Health in All Policies (MM-HiAP)

The model has its roots in the software engineering development in the 1980s. The Software Engineering Institute led the development of a Capability Maturity Model (CMM) with the aim to help organizations improve their processes of software development (Paulk 2009). The MM-HiAP was developed to assess policies that address the issue of health inequalities and builds on the framework of the CMM. The aim of the model is to assess the implementation process of HiAP at a local government level (Storm et al. 2014). The model is formed by six maturity levels. The assumption of the model is that it is hierarchal and an organization has to mature through each level 0–5. At each maturity level, the organization has to address a set of key characteristics to be able reach the next level of maturity (Table 1).

The assessment of the maturity level and key characteristic in the MM-HiAP is fulfilled via triangulation through analysis of health policy documents, an online questionnaire and third individual semi-structured interviews. The triangulation is included due to challenges of assessing HiAP (Storm et al. 2014). Due to restriction in resources this current study applied questionnaire and semi-structured interviews as data collection means.

Study population

The main inclusion criteria for the municipality to participate in the study was that it should have a HiAP focus, which Esbjerg municipality met (Kommune 2015). The organizational structure of the municipality is presented in Fig. 1 shown below;

In addition to "standard" municipal sectors, such as environment, Health & Care, Children & Culture, Civil Society & Labour, we agreed to include also the joint management department. Although the department has no direct health determinants related responsibilities, it is involved in policy development on each area often managing the policy process (Steenbakkers et al. 2012).

The inclusion criteria for individual respondents were discussed and agreed upon with the Health & Care sector at the initial contact with the municipality. The term "policy officers" used in the Dutch study did not fit (Storm et al. 2014); instead "employees with administrative tasks as their main focus" were chosen. The Health and Care sector leaders put the issue of the survey and tool development on agenda of the "Health Policy Steering group" of the municipality. That steering group has representatives from each sector and decided to nominate one contact person from each sector. Those contact persons then selected and provided contact information on respondents from among the employees. This resulted in a total study population of 64 respondents among 88 distributed questionnaires. There was no possibility to get information about non-respondents. This way of selection of respondents is a very participatory way, yet it left researchers with no control over sample introducing a potential for selection bias. The employees were distributed among the sectors as seen in Fig. 1. There were no ethical requirements according to Danish rules for qualitative research.

Data collection

The questionnaire has its foundation in the Dutch survey tool, which has 19 statements based on the 14 key characteristics in the MM-HiAP. The possible response categories were on an ordinal scale; "completely agree", "agree", "neutral", "disagree", "completely disagree" and "do not know". The questionnaire was created in "SurveyXXact" software and distributed to the 88 respondents via email.

The interviews were semi-structured and had foundation in the Dutch study of Storm et al. (2014), as was the case for the questionnaire. The structure was given by the 14 key characteristics, which constituted the themes in the interview guide.

One key employee from each sector was chosen as the respondent; the Children & Culture Department did not participate in interview part. The respondent/interviewee

Table 1 Maturity levels, generic description and key characteristics of Maturity Model-Health in All Policies [Derived from (10)], Denmark 2016

Maturity level	Generic description	Key characteristic	Management strategies
Level 0: unrecognized	There is no specific attention for the problem	No key characteristic	–
Level 1: recognized	Municipalities recognize the problem and the importance of a HiAP solution	1. Importance of HiAP recognized to reduce health inequalities 2. Visible which activities of sectors contribute to (determinants of) health inequalities	Steering on awareness (To advance from level 0–1, by, e.g., visualize health effects of policy plans outside the public health sector)
Level 2: considered	There are preparatory HiAP actions on parts of the problem	3. HiAP described in policy documents 4. Collaboration with sectors present (project-based) 5. Collaboration on health inequalities is started 6. Activities of sectors contribute to determinants of health inequalities	Steering on persons (To advance from level 1–2, by, e.g., paying attention to positive experiences with intersectoral collaboration and describe success)
Level 3: implemented	HiAP investments in several problem areas exist	7. Concrete collaboration agreements 8. Structural consultations forms present 9. Key person HiAP is present (role is clear) 10. Working from sectors on health inequalities (policy basis)	Steering on process (To advance from level 2–3, by, e.g., make agreements in intersectoral collaboration and allocate sufficient resources and to keep management support to HiAP)
Level 4: integrated	Quality HiAP processes are an integrated part of policies	11. Broad, shared vision on HiAP (political and strategic) 12. HiAP results visible (both content and process)	Steering on results (To advance from level 3–4)
Level 5: institutionalized	There is a systematic improvement of HiAP quality	13. Political and administrative anchoring of the HiAP approach 14. Continuous improvement of integral processes and results on the basis of the achieved results	Steering on continuous improvement (To advance from level 4–5)

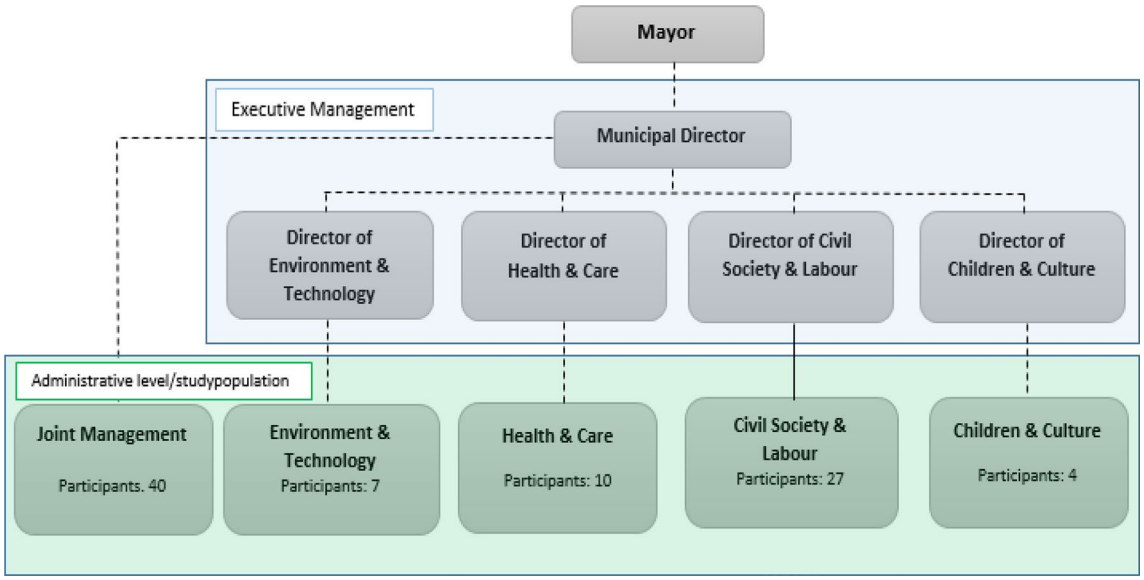

Fig. 1 Organizational structure of Esbjerg municipality, Denmark 2016

was a central person of the sector with thorough insight of the sectors organizational structure and strategical goals.

Analysis

Stata 14 was used for quantitative descriptive analysis in this study. The analysis included two steps; first step assessed each sector separate and the second step the municipality as a whole. Inspired by the MM-HiAP model by a system scoring each key characteristic was marked with + (positive) ± (doubtful) and − (negative) status.

In first step, key characteristics by sectors were analyzed as positive if at least two thirds of respondents in a sector agreed with the statement related to the key characteristics and negative if less than a third in a sector agreed. The doubtful category covered those who responded "I do not know". In second step, key characteristics were analyzed as positive if at least three fifths of the sectors agreed with the statement related to the key characteristics and negative if less than one fifth of the sectors agreed. This slightly different categorization as in step one was due to total number of five sectors with aim to keep it as similar as possible (66% in step one and 60% in step two for being assigned to positivity).

Qualitative data was analyzed with meaning condensation followed by a categorization enabling a comparison of the quantitative and qualitative results. The meaning condensation process consisted of a transcription of the interviews followed by a division of the text into meaning units of text paragraphs. The categorization was created after scoring definitions used in the MM-HiAP using a +, ± or − score system representing a positive, doubtful or negative status of an assessed key characteristic.

Results

Response rate

The total response rate to the questionnaire was 72.2%; there was a difference by sectors (Table 2).

Maturity level

The results, coming from the questionnaire, indicate that Esbjerg municipality is between maturity level 2 and 3 of the implementation process of HiAP.

As seen in Fig. 2 the key characteristics from 0 to 2 is assessed as positive by 60% or more of the sectors, indicating that Esbjerg municipality has recognized HiAP. Key

Table 2 Distribution of questionnaires between the five sectors of Esbjerg municipality, responses and response rate, Denmark 2016

Sector	Responses	Possible respondents	Response rate (%)
Children and culture	4	4	100
Environment and technology	3	7	42.9
Health and care	6	10	60
Civil society and labour	18	27	66.7
Joint management	33	40	82.5
Total	64	88	72.7

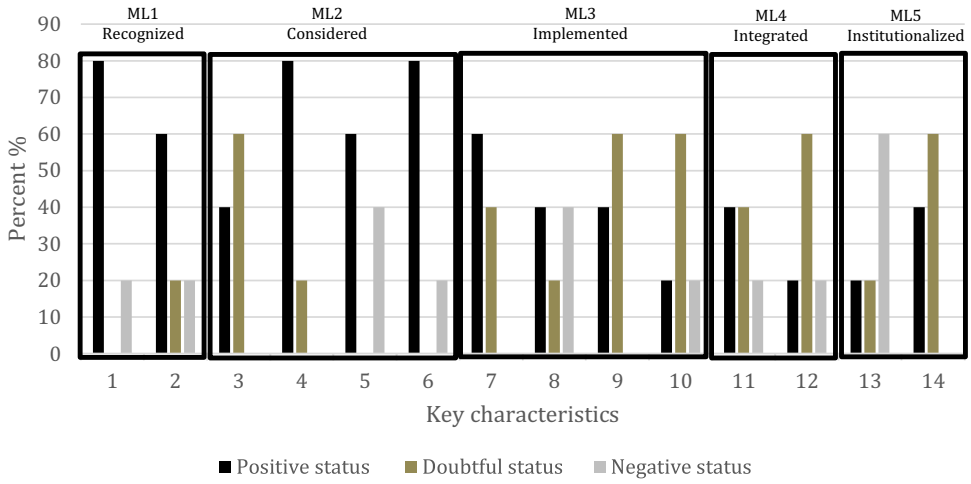

Fig. 2 Percentage of sectors to have a positive status, doubtful status and negative status of the implementation process of the 14 key characteristic. The key characteristic is divided into the clusters that represent each maturity level (*ML* maturity level), Denmark 2016

characteristics 3–6 representing maturity level 2 are all assessed as positive by 60% or more of the sectors. With the exception of key characteristic 3 concerning the issue of whether HiAP is described in policy documents where 40% of the sectors have a positive status and 60% a doubtful status. This indicates that the municipality is well established on maturity level 2 where they have considered HiAP.

On maturity level 3, which include key characteristic 7–10, only key characteristic 7 met the criteria for a positive status in the municipality, where the others were negative indicating that the municipality has not established itself at maturity level 3. Responses on maturity level 4 and 5 were negative or doubtful meaning that HiAP is not yet integrated or institutionalized in municipality.

Response tendency

The category "do not know" have frequently been used with an average of 28% of the answers. Furthermore, an overall positive tendency is seen in the responses from the sectors. On average 48% have used the positive categories "completely agree" or "agree" with the statements and opposite in the disagree categories with an average of 6%.

The Children & Culture, Health & Care and Civil Society sector are more positive compared to the remaining two sectors (Fig. 3).

The "do not know" category is frequently being used by the Joint Management sector indicating difficulty on answering the questions.

Analysis of interviews

The responses from the four sectors show that working across the sectors in addressing health inequalities is recognized and considered in Esbjerg municipality with several collaborations on activities addressing health among the sectors. However, it becomes more doubtful if HiAP can be said to have reached maturity level 3 of the implementation. The municipality only gives little indication of concrete agreements and structure for collaboration, which is needed before maturity level 3 can be reached. The final statement is therefore that Esbjerg municipality seems to

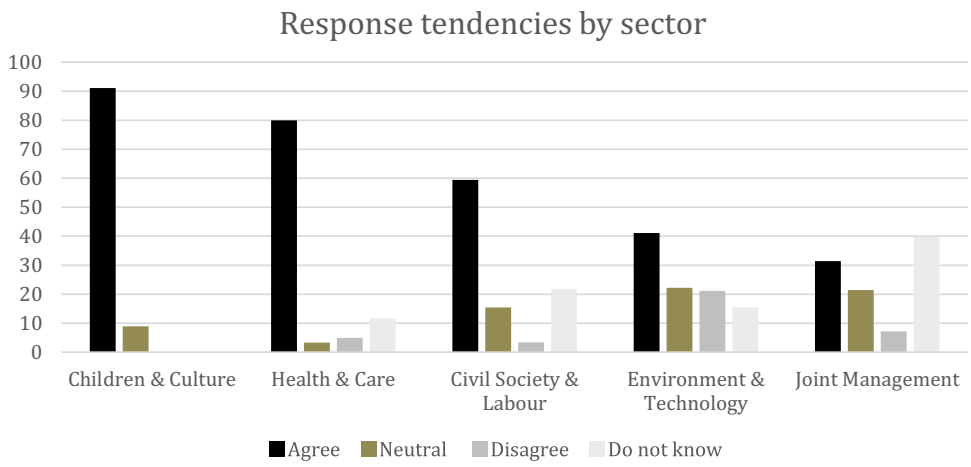

Fig. 3 Overview of respondents answers by sector, Denmark 2016

be at maturity level 2. Comparing the interviews with the questionnaire, the questionnaire shows to have a more positive assessment of the key characteristics than the qualitative part; especially key characteristics 9 to 14 corresponding to maturity level 3–5.

Furthermore, the interviews revealed issues with applying the quantitative part of the tool. First, the respondents meant that employees who are distant to the management do not have strategic or political perspective on the municipality and this disable them to answer the statements. Second, the Joint Management sector had difficulty seeing itself in the survey since it operates with health for the employees within the municipality and not aiming at the citizens of the municipality. Finally, the use of the term "sector" confused the respondents, since they are representing a part of the sector and for this reason it was hard to respond on the behalf of the sector as a whole.

Discussion

It has to be kept in mind that implementation of HiAP is a dynamic process on a political scene, where necessary conditions have to be present in order for successful implementation to occur. It is about the window of opportunity, where it is possible to make the policy concrete with actions; political climate needs to be ready to take these actions (Leppo et al. 2013). Khayatzadeh-Mahani et al. (2016) recently described implementation of HiAP in Iran within "Health Master Plan" development process applying the Kingdon's multiple stream framework and referring to windows of opportunity and political climate. Kang (2016) on example of intersectoral collaboration for physical activity in Korean Healthy Cities identified key factors influencing successful implementation of intersectoral action and consequently the Health in All Policies approach. Yet, to our knowledge it is only the Dutch study, which incorporated these necessary conditions, and presented a measurement tool to assess progress in implementation (Storm et al. 2014). According to our findings, in Esbjerg municipality, the HiAP approach seems to be both recognized and considered, and the next step is to fully implement the approach. This becomes a challenge, since the actions that need to be taken are concrete and have to be tangible. At the same time, the timing has to be right to gain political support. The Health & Care sector noted that the timing might not have been good the last years when the municipality budget restraints have been on the agenda for all the sectors. However, when these matters have been settled it is the time to get back to work with visions that they have committed themselves to.

As the presented work aimed to both modify the Dutch model to Danish conditions and test it within limited time period, the above mentioned conditions have been outside the scope of this study. They are however highly recommended to incorporate into future studies with of the use of the model. In governance or decision making practice, it is often hard to grasp the concept of Health in All Policies due to traditionally silo-based work. Implementation of HiAP is therefore often rather slow and not system or structure based. The Dutch tool used in our work is one option, which brings clarity to the process and we aimed to apply it in the Danish context on example of Esbjerg municipality. Although we combined development of the tool with direct testing (participatory research practice), the process produced sound results and offers a good opportunity to be used in other municipalities in Denmark. Respondents from the selected municipality identified themselves with questions and were able to provide relevant answers, which were further deepened and at large extent verified in qualitative interviews.

The key limitations to be discussed are on selection of study population, validity issues and overall conditions in the municipality.

Study population

Which level of the organization to include in the study should be discussed? In this study, the questionnaire was aimed at the five overall political sectors. This was questioned by the respondents since they each represented a department under the overarching sectors. This caused confusion among the respondents whether to answer on behalf of their department, or on the sector as a whole. For this reason, it would be more relevant to direct the questionnaire on a department level, instead of sector level.

This raises the question of which departments to address. The Joint Management sector found it difficult to answer the questions compared to the other sectors. Furthermore, it can be questioned if the Joint Management sectors actions affect the health in the general population. For this reason, only relevant departments with expected influence on health inequalities in the population should be selected. The social, culture, sports, education, environment, planning, infrastructure, and housing departments have been shown as the most common departments involved in intersectoral actions beside health departments (Rantala et al. 2014).

The last comment on the study population is related to the position of the respondents in the organization. The Dutch paper used the term "policy officers at operational level" (Storm 2014). This formulation of a work position could not be converted to Esbjerg municipality, therefore the work position "employees at administrative level" was chosen in cooperation with the contact persons in the sectors. This resulted in two issues; the first having

a big diversity in the study population ranging from top management level to the social worker administrating the cases of citizens on sick-leave. Both fit in the description of administrative employees, but the latter group is not ideal, since the HiAP approach targets the strategic and political work in an organization. Second, employees outside the manager group are not expected to have a strategic focus in their daily work. For this reason, an inclusion of the managers of each department would be a suitable group to include in future use of the model.

Validity

The assumption of the model is that it is hierarchal and an organization has to mature through each level 0–5. This means that the model should show most positive indication on the lower maturity level, which then should decrease towards the higher maturity levels. This tendency is seen in both the results of the quantitative and qualitative data. This indicates that as an overall model it seems to work. Despite this, a social desirability bias and the high frequency of use of the "do not know" category question the validity and guides to cautious interpretation of findings:

1. 48% of the respondents had on average used the positive answering categories "completely agree" or "agree" compared to 6% choosing the categories "completely disagree" or "disagree". The tendency is also seen when the quantitative and qualitative results are compared. The interviews showed that the employees in the questionnaire overestimated implementation on the higher maturity levels four and five. Therefore, it is reasonable to assume that employees tend to express much positive feedback in the questionnaire. Without the interviews the maturity level might have been overestimated. Hence, it is recommended to use the mixed method in future use of the MM-HiAP model to get a more elaborative perspective.
2. Second, the frequent use of the "do not know" category also questions the validity of the questionnaire by the questions not supplying the needed information for the analysis (Abramson and Abramson 1999).

This fact can also be explained by the diversity in tasks and focus among the different sectors. Sectors, as the Children & Culture and Health & Care sector have a more specific focus where it is easier to relate to health issues compared to the sectors with more broad focus as the Technology & Environment and Joint Management sectors.

Conclusion

The Maturity Model for HiAP has proved suitable for assessing the implementation process of HiAP on a municipality level and establishes a fundament for practical guidance in the area. However, the model is still to be seen as a prototype and further testing in more Danish settings (and internationally) and development is needed since it have a tendency to overestimate the level of maturity and this might question the validity of the model. Combination of quantitative survey method with key person interviews can lead to further increase of validity of the model.

Compliance with ethical standards

Conflict of interest Author Jonas Bech Andersen declares that he has no conflict of interest. Author Gabriel Gulis declares that he has no conflict of interest.

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Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was not considered relevant for this study as it does not contain individual information.

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