

Participation of general practitioners in disease management: experiences from the Netherlands

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Abstract

Objective: To investigate the extent to which GPs in the Netherlands participate in disease management and how personal opinions, impeding and promoting incentives as well as physician characteristics influence their attitude towards disease management.

Methods: The attitude-model of Fishbein and Ajzen was used to describe the attitude of GPs towards disease management and main influencing factors. After interviewing seventeen representatives of the GPs and testing a questionnaire, the final questionnaire was sent to all GPs in the Netherlands (7680 GPs) barring those involved in the testing of the questionnaire.

Results: At least 10.4% of all Dutch GPs are active in disease management. The main factors predicting a positive attitude towards disease management are the following: GPs' opinion that they are improving quality and efficiency of care when executing disease management, presence of a good quality network between actors involved prior to the start of disease management, working in a health centre, and performing sideline activities besides their daily activities as GPs. The main factors predicting a negative attitude are: GPs' opinion that the investment-time is too high, lack of reimbursement for disease management activities, working in a solo practice, and not performing any sideline activities beside their daily activities as GP.

Conclusions: The factors predicting a negative attitude of Dutch GPs towards disease management dominate the factors predicting a positive attitude. The arguments in favour of disease management are matters of belief, for example concerning improvements in the quality of care, while arguments against are more concrete barriers e.g. high workload and financial reimbursement. Placed on the innovation timeline, the 10.4% participation might be taken to represent the start of a trend.

Keywords

disease management, general practitioners, participation, attitude, personal opinions, impeding and promoting factors

Introduction

The concept of disease management has attracted considerable interest in industrialised countries [1, 2]. The reasons for this are the growing number of chronically ill people, the limited capacity of health care resources as well as the focus on treating patients with a chronic disease in groups rather than separately [3]. However, to achieve the objective of treating personal care within a group-focused pro-

gramme is of the greatest importance. Disease management programmes claim to deliver efficient and high quality health care services at affordable cost [4, 5]. The definition of disease management used in this study is *the process of continuous improvement in the measurable outcomes of the care continuum (e.g. from prevention to reintegration) of a specific disease* [6]. The building bricks for this concept are integrated and standardised care, focus on the whole continuum of care of high-cost chronic diseases, greater attention to prevention, screening and patient

empowerment, and comprehensive monitoring and benchmarking of process and outcome results [4, 6]. In the Netherlands, general practitioners (GPs) provide care for the majority of the chronically ill patients [7]. Moreover, as primary caregivers, GPs are often involved in the care for these patients for long periods of time. Being the gatekeeper of the Dutch health care system, the coordination of (primary) care for the increasing group of chronically ill is regarded as a GP's task [7, 8]. Thus, the implementation and execution of disease management programmes for chronically ill in the Netherlands must, to a great extent, depend on the engagement of GPs in these programmes.

Disease management for chronic and mostly complex patient categories aims to deliver integrated and coordinated health care, while at the same time promoting appropriate, individual care. Being one of the parties involved in disease management, GPs are required to pay attention to co-morbidity and to the prevention of fragmentation of care delivery in a more systematic way. Both phenomena are very common in patients suffering from a chronic disease [9]. Due to improved education, increased application of Information Technology Communication, acceptance of a change in care practices from physicians to nurses and the use of national guidelines for clinical practice, the working method of GPs seems to be better equipped for the anticipatory working method acquired to manage chronic diseases. Instead of 'gatekeeper of the health care system', the role of the GP might evolve towards 'manager of the primary care process' [9, 10].

The purpose of this study is to describe and explain the activity of GPs in the field of disease management. The research questions addressed are: (a) How many GPs are currently implementing disease management; (b) What barriers and enabling factors do GPs perceive in implementing disease management; (c) What personal opinions influence the attitude of GPs towards disease management; (d) Do physician characteristics influence the attitude of GPs towards disease management?

The attitude-model of Fishbein and Ajzen was used to describe the attitude of GPs towards disease management and the main factors influencing this attitude [11]. Fishbein and Ajzen assume that human beings are basically rational information processors whose beliefs, attitudes, intentions and behaviours are influenced by the information available to them [11]. According to this theory the development of an attitude takes place on the base of information that is accepted by the subject. This information leads to opinions, which subsequently lead to an attitude. Changes in

opinion take place by evaluating and receiving feedback from an attitude-object [11, 12]. This model was chosen because it can predict the intentions of GPs to participate in disease management on the base of their personal attitudes towards disease management.

Methods

Both quantitative and qualitative research methods were used in this study. In order to construct a questionnaire that would be valid in a national context, open interviews were held with GP representatives.

Subsequently a questionnaire consisting of 32 closed questions was tested and refined in a pilot setting. The pilot consisted of sending the questionnaire to 315 GPs in one province of the Netherlands to measure participation in disease management as well as the GPs' motives for doing so. The final questionnaire (28 closed questions) was sent to all GPs in the Netherlands except those in the province in which the questionnaire was tested (7680 GPs). A front page was added to both questionnaires which contained questions as to whether the respondent was active in disease management or not, and whether the respondent was prepared to answer further questions on disease management.

In order to determine the number of GPs that clearly carry out disease management activities, a formula was constructed to measure whether a disease management programme could be regarded as clear disease management. The method we used to assess disease management is described in Appendix 1. In one district all the 'disease management' programmes (n=42) were independently assessed by three persons on the basis of the formula.

Results

Participation of GPs in disease management in the Netherlands

The response rate for the pilot questionnaire was 48.9% (n=154), while that for the national questionnaire was 41.3% (n=3170). Since the items used to answer the research question were part of both pilot version and final version of the questionnaire, the responses to these items from both versions were used. The total response rate was 41.6% (n=3324), with completed questionnaires from 1673 respondents. Eight-hundred and thirty-four of all the respondents played an active role in disease management. This amounts to 10.4% of the total of 7995 Dutch

Table 1. Arguments in favour of and against participation in disease management programmes

Arguments in favour of disease management (n=1673)	Arguments against disease management (n=1673)
Improving the quality of care (90.2%)	The high time-investment required (72.1%)
Improving the efficiency of care (64.5%)	Lack of (financial) reimbursement for participation in disease management programmes (45.5%)
Improving the quality of life of patients (64.0%)	No expectation that disease management will save time in the long term (30.8%)

GPs. The participation in disease management varied between 7.3% and 15.3% over the 23 GP-districts.

Of the assessed projects, 45.2% scored above the breakpoint for disease management (5.4) and can be regarded as a disease management project; 54.8% of the projects scored lower than the breakpoint. Of the disease management programmes described, 88.1% focused on diabetes mellitus, followed by asthma/chronic obstructive pulmonary disease (19.4%) and deep-vein-thrombosis (15.5%).

Arguments in favour of and against disease management (personal opinions)

The most frequently mentioned arguments by GPs (not) to participate in disease management are in [Table 1](#).

Promoting and impeding incentives for disease management

The most frequently mentioned promoting and impeding incentives for disease management are in [Table 2](#).

Physician characteristics that influence participation in disease management

Of the 189 GPs who are working in a health centre 79.4% are active in disease management, against

49.0% of the 298 GPs working in a group practice and 43.0% of the 617 GPs working in a solo-practice. Of the remaining 569 GPs, 495 are working in other kind of practices such as duo practices, while for 74 GPs there are no data available.

GPs who perform sideline activities, such as pharmaco-therapeutic consultation sessions, or who perform medical coordination tasks beside their daily activities, participate more often in disease management programmes than GPs who are not involved in such activities. Of the 820 GPs who perform sideline activities, 8.2% also participate in disease management programmes, against 16.3% of the GPs who do not perform any sideline activities. For 14 GPs there are no data on performing sideline activities available.

There seems to be no relation between GP age and participation in disease management programmes. Gender also does not appear to affect participation.

Discussion

Since disease management is attracting more and more interest in the Netherlands, GPs are considered one of the most important actors in implementing and executing disease management programmes [6, 8, 13–15]. The purpose of this study is to investigate to what extent GPs in the Netherlands are participating in disease management programmes, and how personal opinions, impeding and promoting incentives

Table 2. Promoting and impeding incentives for disease management

Promoting incentives (n=1673)	Impeding incentives (n=1673)
The presence of a network between the different actors, prior to the start of disease management (60.8%)	The high time-investment required (71.8%)
Qualitative good cooperation between actors (60.0%)	The extent to which disease management activities are reimbursed (34.5%)
Positive perspective that disease management programs will be continued (42.7%)	The expectation that disease management programmes will not lead to any time-saving (23.8%)

and physician characteristics influence attitudes. As a first step a formula was defined to assess disease management programmes.

At least 10.4% of the Dutch GPs are active in the field of disease management according to their own definition of this concept. Since the GPs who did not return the questionnaire are not included but might be active in disease management, the percentage of 10.4% represents the minimum number of the 7995 Dutch GPs that are active in disease management. The reason for not including the non-respondents lay in our suspicion that GPs who are active in disease management were more likely to return the questionnaire than GPs who are not. Generalisation would then lead to an overestimation of the number of GPs that are active in the field of disease management.

When the derived formula was applied, it became evident that 54.8% of the programmes mentioned by GPs do not meet all of the minimal prerequisites of this concept, although most of these programmes do have the potential to become clear disease management projects. The number shows that GPs overestimate their engagement in disease management.

The argument most often mentioned by the respondents against disease management is the high time investment required. A possible explanation is the high work pressure that GPs experience [16, 17]. Setting limits to this time investment should lead to more active participation of GPs in disease management programmes. There are several ways of reducing the time invested. One is to shift certain tasks to nursing practitioners [13], another lies in the increased use of information technology by GPs so that the registration and transaction of data do not require extra time [18]. In addition, the idea that disease management takes more time than delivering traditional care has to be changed. GPs should be convinced of the fact that disease management implies a change in daily activities rather than an increase in activities in the long term [5]. For the investment time that is left GPs should then receive an appropriate reward.

GPs did not mention the extent of information communication technology as a factor impeding disease management while the practice shows that this is currently one of the most impeding factors.

Improving the quality of care, efficiency of care and quality of life were mentioned as the most important arguments for GPs to participate in disease management programmes. This is confirmed by the high weight factor that GPs assign to the main element 'Continuous improvement in the efficiency and quality of the primary care process'. The fact that GPs mention the amount of time invested as an impeding

incentive can be explained by the high work pressure they experience [19]. The second factor, 'lack of reimbursement', might also be related to this. GPs feel that they have to perform even more 'extra' tasks while not receiving reimbursements of any kind [17, 20]. An example of such tasks is the shift in care from the secondary to the primary care sector and enhanced data registration. If GPs fail to receive any compensation for these extra activities they are less willing to cooperate.

Networks of good quality between the different parties prior to the start of a disease management programme are regarded as a promoting incentive for disease management. Stimulating the formation and maintenance of these networks, for example in a health care centre, could lead to greater GP participation in disease management programmes. One advantage of closer cooperation in general is that GPs are more willing to participate when they feel that the network of which they are part is of high quality and that they can trust the other parties involved. The literature on disease management shows that trust is an important factor in the successful implementation of disease management, since participation in a network means the sharing of knowledge, data and autonomy [12, 21]. The present study also shows that GPs who are working in a health care centre are more active in disease management than GPs who run group or solo practices.

The positive prospect that disease management programmes will be continued is another factor in favour of disease management. A more structural form of financing the programmes as well as an unequivocal policy with regard to managing the chronically ill now and in the future would further improve the prospect for continuity [4, 12].

The attitude-model of Fishbein and Ajzen gives a clear insight into how the attitude of GPs towards disease management is influenced by personal opinions—arguments in favour for or against disease management—and the promoting and impeding factors that promote or impede disease management. On the base of this model one might assume that the impeding factors and the arguments against disease management are of greater influence on the attitude of GPs than the promoting factors and the arguments in favour of disease management. It is noticeable that the arguments in favour of disease management are matters of belief—for example improving the quality of care—and that the arguments against are more concrete and concern high workload, financial reimbursement and time-investment. This shows that the practical barriers in the health care system are also

of great influence in the GPs' decisions to participate in disease management programmes.

However, since the number of GPs that are active in disease management is relatively small, it does not mean that disease management has no chance of succeeding in the Netherlands. If this cross-sectional survey is placed on the innovation timeline, the 10.4% participation might be taken to represent the start of a trend [22]. Furthermore, the discussions about different aspects of disease management—such as increased transparency, efficiency of care and shared responsibilities—have become less loaded in the last five years. The implementation process of disease management has not yet been completed and the concept is slowly being integrated into the Dutch health care system. Cooperation and integrated care are key words for the future [23].

Health Technology Assessment of disease management, with the purpose of investigating what impact disease management in The Netherlands will have on health care and economic outcomes, is strongly recommended. Further research on the formula for disease management and correcting this formula for the influence of other parties (e.g. insurers, specialists) on the weight factors is recommended. Since the subdivisions of the formula and the scores representing them are arbitrary, further research into this subject should be conducted.

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Appendix 1: The assessment of disease management

Open interviews were performed with members of 17 of the 23 District General Practitioners Associations (in Dutch: Districts Huisartsen Verenigingen (DHV)). During the interviews, it was noticed that representatives did not know exactly what disease management implies. They mentioned some characteristics of disease management but could not give an overall definition. As a result two possible errors might occur:

1. GPs assume they are carrying out disease management activities but, according to the definition, are not in fact;

2. GPs assume they are not performing any disease management activities but, according to the definition, they are.

Based on the information obtained from the open interviews, four main elements of disease management were defined: 'multidisciplinary working methods', 'working with clinical guidelines', 'designing and adjusting the primary care process based on patient outcomes' and 'continuous improvement in the efficiency and quality of the primary care process'. These main elements correspond to the elements of disease management as mentioned in the definition by the STG [6] that was used in this study. In addition, the main elements of disease management show a lot of similarities with continuous quality improvement. The combination of these principles and programmes of continuous quality improvement provides great opportunities for delivering and continuously improving a best practice approach to health care delivery [24].

When the programmes described in the open interviews were assessed it appeared that the practical applications of the main elements differed strongly. In order to assess the programmes more accurately subdivisions were made for every main element. These subdivisions vary from minimal application of the main element to maximal application. Within each element one of the subdivisions formulated was determined as being the minimal prerequisite for this main element of disease management. Each subdivision was scored between 0 and 3 (0 = minimal application of the main element; 3 = maximal application of the main element). With these scores it was possible to give a more detailed opinion whether the project could be regarded as a clear disease management project or not. Table 3 shows the main elements and minimal prerequisites for disease management. Weight factors are used to express the ratio between the four main elements of disease management (Figure 1). The weight factors were derived by asking the GPs to rate the four main elements of disease management on a five-point scale (1 = not important at all; 5 = very important). The weight factors as represented in this study are the mean values GPs assigned to the main elements.

Because of the comprehensive nature of the elements B and C, they were both divided into two subcategories (B₁, B₂, C₁ and C₂) each with the same weight factor as the main element from which they are extracted.

Thus, on the one hand the formula is based on the weight factors GPs assigned to the main elements of disease management, and on the other hand on the

Table 3. Main elements and minimal prerequisites for disease management

A. Multidisciplinary working method
0= cooperation within general practice 1= cooperation with at least one other general discipline (primary care) 2= cooperation with at least one other specialized discipline (secondary care) 3= cooperation with at least two other disciplines of which one should be a general and one should be a specialised discipline
B. Working with clinical guidelines
<ul style="list-style-type: none"> • B1: The extent to which the continuum of care is described in the clinical guidelines 0=no clinical guidelines are used 1=the clinical guidelines describe diagnostics, treatment and care 2=the clinical guidelines also describe prevention, rehabilitation or reintegration 3=the clinical guidelines describe at least two of the elements: prevention, rehabilitation and reintegration • B2: The extent to which the population-based approach and the focus on one specific disease are embedded in the clinical guidelines 0=the population-based approach and the focus on one specific disease are not embedded in the clinical guidelines 1=the population-based approach is not embedded in the clinical guidelines, the focus on one specific disease is embedded. 2=the population based approach and the focus on one specific disease are embedded in the clinical guidelines 3=the population based approach and the focus on one specific disease including co-morbidity are embedded in the clinical guidelines
C. Designing and adjusting the primary care process based on patient outcomes
<ul style="list-style-type: none"> • C1: The extent to which the design of the primary process is based on systematically registered patient outcomes 0=no patient outcomes are used to design the primary care process and no patient outcomes are systematically registered 1=the design of the process is based on systematically registered patient outcomes 2=patient outcomes are registered systematically during the project 3=patient outcomes are registered systematically at the population level • C2: The extent to which adjusting of the primary care process and benchmarking of patient outcomes takes place 0=no adjustment of the primary care process and no benchmarking take place 1=patient outcomes are benchmarked to the care givers 2=the primary care process is adjusted, based on patient outcomes 3=patient outcomes are benchmarked and the primary care process is adjusted, based on patient outcomes
D. Continuous improvement in the efficiency and quality of the primary care process
0=continuous improvement in the efficiency and quality of the primary care process is not a goal of registration and benchmarking of patient outcomes 1=clinical and/or psychosocial outcomes (quality improvement), or economic outcomes (efficiency improvement), or process outcomes (process outcomes) are registered to adjust the primary care process 2=outcomes of two of the three mentioned categories (clinical/psycho-social, economic, process) are registered to adjust the primary care process 3=the outcomes of all three categories (clinical/psychosocial, economic, process) are used to adjust the primary care process

scores they assigned to the subdivisions that represent the main elements.

$$Y = \text{meanA} \times \text{scoreA} + \frac{1}{2}(\text{meanB}_1 \times \text{scoreB}_1 + \text{meanB}_2 \times \text{scoreB}_2) + (\text{meanC}_1 \times \text{scoreC}_1 + \text{meanC}_2 \times \text{scoreC}_2) + \text{meanD} \times \text{scoreD}$$

Completing the formula with the mean weight factors and the scores that represent the minimal prerequisites for each element leads to the breakpoint for what can be regarded as disease management. The breakpoint is necessary to determine whether a project can be seen as a clear disease management project or not, and is convertible to a ten-point scale (0=no disease management at all; 10=optimal disease management).

Completing the formula with the scores that represent the minimal prerequisites results in

$$Y = 3.8 \times 2 + \frac{1}{2}(3.7 \times 2 + 3.7 \times 2) + \frac{1}{2}(3.9 \times 2 + 3.9 \times 1) + 3.9 \times 1 = 24.75.$$

Completing the formula with the maximum scores results in

$$Y = 3.8 \times 3 + \frac{1}{2}(3.7 \times 3 + 3.7 \times 3) + \frac{1}{2}(3.9 \times 3 + 3.9 \times 3) + 3.9 \times 3 = 45.9.$$

If 45.9=10, then 24.75=5.4. This is taken to be the breakpoint for disease management.

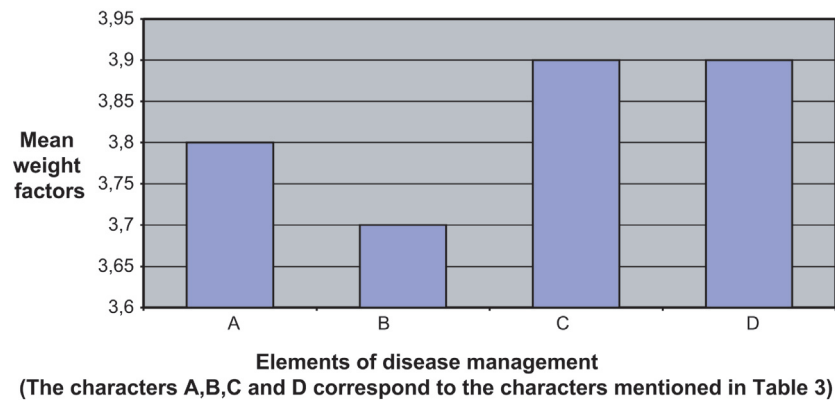


Figure 1. Weight factors for the disease management formula.

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