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To what degree are health insurance enrollees in the Netherlands aware of the restrictive conditions attached to their policies?

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Abstract

Background: Within the Dutch healthcare system of managed competition, health insurers can contract healthcare providers selectively. Enrollees who choose a health insurance policy with restrictive conditions will have to make a co-payment if they consult a non-contracted provider. This study aims to gain insight into enrollees' awareness of the conditions of such health insurance policies.

Methods: In August 2020, an online questionnaire was sent out via health insurers to their enrollees with restrictive health plans. In total 13,588 enrollees responded.

Results: One fifth of the respondents appeared to be totally unfamiliar with the policy conditions. Men, younger people, people with a low level of education, a lower income, a poorer health status and non-care users were found to be less familiar with the conditions. Of those who have been in the situation that they wanted to visit a healthcare provider whose care was not fully reimbursed, 62% went to that provider. Of those who had to pay extra because hospital care was not fully reimbursed, 62% did not know this in advance and 30% indicated that paying extra was a serious problem.

Conclusions: Not all enrollees who choose a policy with restrictive conditions are aware of the consequences of receiving care from non-contracted providers. Increased awareness among enrollees will benefit the functioning of the healthcare system based on managed competition.

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Introduction

Over recent decades, many Western countries have added market incentives to their health systems in order to make resource allocation in health care more efficient, more innovative, and more responsive to consumers' preferences [1–3]. Alain Enthoven's theory of managed competition was often used as the basis of these reforms for example in the Netherlands, Germany, and Switzerland [4, 5]. In a health system based on managed competition, health insurers function as the prudent purchaser of care on behalf of their enrollees [4, 6, 7]. Health insurers compete with each other for enrollees in the health insurance market. According to the theory, it is expected that this provides an incentive for the health insurer to negotiate each year with healthcare providers in order to offer an attractive price and quality for their health insurance policy [6, 7]. Nevertheless, in practice, managed competition offers insurers ambiguous incentives to promote quality in contracting [8].

Health insurers have the option of contracting with healthcare providers selectively in a system based on managed competition. This means that they can choose with which care providers they conclude a contract, and with which they do not [6, 9]. In the case of health insurance policies with selective contracting, the health insurer does not have to reimburse the costs of care in full if the healthcare provider is not contracted with it. In those cases, enrollees have to make a co-payment. This financial incentive allows health insurers to steer enrollees towards their preferred healthcare providers. As a result, health insurers may have a stronger bargaining position in negotiations with healthcare providers about their desired contractual conditions [6, 7]. However, if enrollees are to avoid being faced with unexpected financial and other consequences, it is important they have a good understanding of the consequences for them if they opt for such a policy.

Enrollees' understanding of polices with selective contracting is linked to the concept of health insurance literacy (HIL). HIL can be defined as "the capacity to find and evaluate information about health plans, select the best plan given financial and health circumstances, and use the plan once enrolled" [10]. While the body of literature about HIL is growing, most studies focus on the situation in the US. According to several survey-based studies, HIL is low in the general US population [11–14]. Furthermore, studies show that lower HIL is more prevalent amongst persons with a lower socioeconomic status, older adults, and ethnic minorities [14–17]. How the level of health insurance literacy in the US compares to that in other countries is unknown, because studies conducted in other countries are lacking. Also for the Dutch situation only a few studies have been published about health insurance literacy among enrollees. One study shows that more than half of the Dutch enrollees indicate that it is difficult to compare health insurance policies and to find out which healthcare providers are reimbursed [18]. Another study shows that the majority of enrollees in the Netherlands are confident in their own skills when it comes to choosing and using health insurance [19]. A third study concludes that a section of the Dutch citizens do not have the appropriate skills to decide which insurance policy best fits their needs and preferences [20]. However, specifically with regard to health insurance policies with selective contracting, we currently do not know whether Dutch enrollees have a good understanding of these policies. A study from the US showed that fewer than a third of the enrollees were fully aware of the restrictive conditions of their health plan [21]. Nevertheless, other US studies showed that enrollees are actually aware of the consequences of having a restrictive health insurance policy [22–24].

Selective contracting in the Netherlands

In 2006 the Health Insurance Act (HIA) was introduced in the Netherlands. In the Dutch system all health insurers in the Netherlands are private, and there is a legal obligation for all citizens aged 18 and above to take out a basic health insurance [4, 25, 26]. In turn, all health insurers have to offer a standard care package for basic health insurance. As a means of supplementing their basic insurance, enrollees are also free to choose an additional health plan, which may differ in its coverage between

the health insurers. While there is a legal requirement to offer the same basic cover in every basic health insurance policy, the premium and conditions may differ, because health insurers are free to contract selectively with care providers [4, 25].

There are three types of basic health insurance policies offered by Dutch insurers. These are 'restitution', 'in kind', and a combination of these two [6, 25]. When people choose a restitution policy, this means care from all providers, contracted or not, will be reimbursed unless the prices are excessively higher than the statutory or market rate [27]. The statutory rate is the rate set by the government [27]. If no statutory rate has been set for a treatment, the health insurer will reimburse up to a maximum of the market rate [27]. This is the rate that is according to the health insurer appropriate in the Dutch market for a particular treatment. For the other two policy types, only contracted healthcare providers are fully reimbursed. With an 'in kind' policy, costs of non-contracted care are compensated up to a maximum limit. With a combination of 'restitution' and 'in kind', costs of non-contracted care are reimbursed up to a 'standard rate' as determined by the health insurer on the basis of rate lists available to them [28, 29].

Health insurance policies with restrictive conditions

This article focuses on 'in kind' health insurance policies with restrictive conditions, also referred to with the Dutch term 'budgetpolis'. According to the definition of the Dutch Healthcare Authority (NZa) – an autonomous administrative body under the supervision of the Ministry of Health, Welfare and Sport (VWS) - this is a group of policies for which the reimbursement rate is below 75% for the use of non-contracted care, or which offer less choice of hospitals [30]. These health insurance policies are offered at a lower premium compared to health insurance policies without restrictive conditions [30].

At the time of this study, 2.3 million Dutch citizens (14.1 percent of the population) were enrolled in one of the ten health insurance policies with restrictive conditions [30, 31]. Four policies had a limited hospital choice, which means that when an enrollee visits a non-contracted hospital, the health insurer reimburses a maximum percentage of the average rate they agreed with other hospitals [30, 31]. In one case this was 80%, in the other cases 75%. This article will focus, in particular, on these health insurance policies.

The first policy with restrictive conditions was introduced in the Netherlands in 2008 [32]. Since then, policies with restrictive conditions have been offered by a growing number of health insurers. After 2014, when the popularity of these types of policies among enrollees had grown, there were reports of patients facing problems with such a 'budgetpolis'. For example, patients were being faced with having to pay part of a large hospital bill themselves, without being aware of this in advance [33–35]. Various interest groups recognised these situations, such as the Dutch Hospital Association (NVZ), the umbrella organisation of Dutch health insurers 'Zorgverzekeraars Nederland', and the Netherlands Patients Federation [34, 35]. As a result, questions were raised in the Dutch parliament about whether people were aware of choosing a health insurance policy with restrictive conditions [36–39].

It appears that enrollees in the Netherlands are not always aware of what health insurance policy they have and what selective contracting entails. This could lead to unexpected, and sometimes problematic, medical co-payments [40, 41]. However, scientific literature about enrollees' awareness in the Netherlands of the restrictive conditions of some health insurance policies is lacking.

In recent years, work has been undertaken in the Netherlands to ensure enrollees are more informed about policies with restrictive conditions, and therefore better supported in their choice of health insurance. And yet, it remains uncertain whether people consciously choose a health insurance policy with restrictive conditions. The objective of this study is, therefore, to gain insight into enrollees' awareness of the restrictive conditions of their health insurance policies. We aim to provide insight into whether enrollees may need to be better informed and supported in their choice

of health insurance. The results will be relevant for countries where selective contracting is practised and so enable health insurers to adjust reimbursements accordingly [42–44].

We aim to gain insight into the following three research questions: To what extent do enrollees with restrictive conditions in their health insurance policy know about these conditions; to what extent do the restrictive conditions of a policy affect enrollees' choice of a healthcare provider; and, to what extent do enrollees who have a policy with restrictive conditions experience unexpected costs from additional payments?

Materials and methods

Participants

In 2020, there were two insurers in the Netherlands who together offered four policies with limited hospital choice [31]. Both insurers agreed to participate in this study after having been approached by the Ministry of Health, Welfare and Sport. For one of the insurers, it was not possible within the time frame of the study to approach the enrollees of one specific policy with limited hospital choice. Therefore, online questionnaires were sent to enrollees from three of the four policies offering a limited hospital choice. The two health insurers themselves contacted their enrollees by e-mail to participate in the questionnaire, thus complying with the General Data Protection Regulation (GDPR). For one insurer, this concerned all enrollees of two policies with limited hospital choice (approximately 380,000 enrollees), for the other insurer this was a sample of 16,000 enrollees of one policy with limited hospital choice.

Online questionnaire

The online questionnaire consisted of 53 questions, including several focusing on the socio-demographic variables of the respondents, such as gender, age, and level of education. Completing the questionnaire took approximately 15 to 20 minutes. The questionnaire could be completed on a computer, laptop, tablet, or smartphone.

The questionnaire has been developed by the authors. The Ministry of Health, Welfare and Sport provided feedback on a draft version of the questionnaire. The two insurers who participated in the study also commented upon the draft questionnaire. The questionnaire was then submitted to the programme committee of the Nivel Dutch Health Care Consumer Panel. This committee consists of representatives of different parties in the healthcare sector, including the Dutch Consumers Association, and 'Zorgverzekeraars Nederland', the umbrella organisation of health insurers. Comments, mostly related to use of terminology, were used to improve the questionnaire.

Data collection and response

The enrollees could fill in the questionnaire from the 3rd until the 18th of August 2020. A reminder was sent by the insurers on the 10th August. The questionnaire was completed by 13,588 enrollees (response rate 3.4%).

Measures

Table 1 provides an overview of the fifteen questions that were used to investigate the three main research questions.

To what extent do enrollees with restrictive conditions in their health insurance policy know about these conditions?

To answer the first research question about the extent of enrollees' knowledge about their policy with restrictive conditions, five questions on two different themes have been asked.

Knowledge when choosing a policy.

Two questions were asked to measure whether enrollees consciously choose a health insurance policy with restrictive conditions. Firstly, respondents were asked to indicate whether they did consider which healthcare providers are fully reimbursed by the health insurance policy they chose. If this was the case then what they specifically have considered (see Table 1, Q1). Secondly, we asked whether respondents have checked whether healthcare providers of a particular type of care are fully reimbursed (Table 1, Q2).

Knowledge of the policy taken out.

Three questions were asked to measure to what extent enrollees are familiar with the restrictive conditions of their policy, once they have taken out a health insurance policy. First of all, it was asked whether the respondents are familiar with the conditions of their basic insurance (Table 1, Q3). In addition, respondents were asked if they have any idea how many healthcare providers there are whose care is fully reimbursed in their basic insurance (Table 1, Q4). Finally, the respondents were asked for the maximum rate of reimbursement for non-contracted care (Table 1, Q5).

To what extent do the restrictive conditions of a policy affect enrollees' choice of a healthcare provider?

To get insight in the second research question, respondents were asked if they had ever been in a situation in the past 12 months where they wanted to go to a care provider who was not fully reimbursed (Table 1, Q6). The respondents who had were then asked about what type of care this was for (Table 1, Q7). These respondents were then asked whether or not they still went to this care provider even though their care was not fully reimbursed (Table 1, Q8). If not, they were asked whether they went to another care provider who was fully reimbursed or, indeed, did not go to a healthcare provider at all (Table 1, Q9).

[Table 1]

To what extent do enrollees who have a policy with restrictive conditions experience unexpected costs from additional payments?

The extent to which enrollees experience unexpected costs from additional payments was measured by asking respondents a series of six consecutive questions. This series began with asking the respondents if they had been in hospital for care in the past 12 months (Table 1, Q10). If so, they were asked whether they had to pay extra (Table1, Q11). If that was the case, respondents were asked whether this was because hospital care was not fully reimbursed by their health insurer (Table 1, Q12). The respondents were then asked whether they knew in advance that they had to pay extra for this hospital care and if so, whether the amount of the additional payment was made clear in advance (Table 1, Q13 and Q14). Finally, respondents were asked whether the additional payment was a problem (Table 1, Q15).

Socio-demographics

The questionnaire also included questions to measure respondents' socio-demographic characteristics, such as age, the level of education, income, self-perceived health status, and use of care. These details can be found in Table 2.

[Table 2]

Analyses

It is mainly descriptive statistics which have been performed. Each figure or table in the results section lists the number of respondents (n) who completed the question. The number of respondents may differ between the figures and tables, because not all respondents were always required to complete a question, and completing every question in the questionnaire was not mandatory. When considered relevant, we analysed results between groups, based on socio-demographics, by performing logistic regression analyses. The independent variables included in the logistic regression analyses are gender, age, the level of education, net monthly income, self-perceived health status, and use of care. These are all categorical variables that have been recoded to dummy variables in the analyses. Besides socio-demographic variables, we also, occasionally, used a question from the questionnaire (Table 1, Q3) in order to distinguish groups and analyse differences in the results between the groups. A significance level of 5% ($p \leq 0.05$) was maintained for these analyses. All analyses were performed using STATA version 15.0.

Results

Descriptive analyses

A total of 13,588 respondents completed the questionnaire. The male/female ratio in the total group of respondents was 52/48 (see Table 2). The average age of the respondents was 47 years. 45% of the respondents were highly educated, and one in five had a net monthly household income of €3,500 or more. Two out of five respondents rate their health as very good or excellent and 13% indicated that they did not use any care.

To what extent do enrollees with restrictive conditions in their health insurance policy know about these conditions?

Knowledge when choosing a policy

About one in three respondents (35%) indicated that they had not considered which care providers were fully reimbursed when choosing their health insurance policy (see Fig. 1). Logistic regression analysis showed that men, people aged 40 to 64 years, people with a lower level of education, people with lower income, people with a bad/fair health status and people who use less care, more often had not considered this than women, people aged 18 to 39 years or 65 years and older, people with a higher level of education, people with a higher income, people with a (very) good or excellent health status, and people who use more care (Table 3). If respondents did pay attention to this, they considered mainly the number of healthcare providers that are fully reimbursed (33%) and the distance from their home to these healthcare providers (26%). Furthermore, about half of the respondents (48%) did not check whether the care providers of a certain type of care are fully reimbursed (not in figure). When they did, in most cases they checked, in particular, whether healthcare providers are fully reimbursed for hospital care (42%). Furthermore, 14% of the respondents checked whether providers of pharmaceutical care (pharmacies) are fully reimbursed; 6% checked providers of medical aids; 5% checked providers of mental health care; and 2% checked providers of district nursing.

Knowledge of the policy taken out

Of all respondents, 5% indicated that they know exactly what the conditions of their basic insurance are, and more than half (52%) indicated that they know roughly. A quarter (25%) of the respondents indicated that they were familiar with the conditions while not knowing the content, and one fifth

(19%) of the respondents appeared to be totally unfamiliar with the conditions of their basic insurance. Logistic regression analysis showed that women, older people, people with a high level of education, people with a higher income, people with a better health status, and people who use more care, are more familiar with the conditions of their basic insurance than men, younger people, people with a low level of education, people with a lower income, people with a poorer health status, and people who use less care (Table 4).

A large section of the respondents did not know how many healthcare providers there are whose care is fully reimbursed in their basic insurance. This differs between types of care. The respondents are best informed about the amount of healthcare providers contracted in the field of hospital care and pharmaceutical care: 44% respectively 43% sixth of all respondents (12% for hospital care to 19% for district nursing), indicated that they do not know which care providers are reimbursed and that it is not easy for them to investigate this.

More than half of the respondents (59%) indicated that they were not aware of the maximum reimbursement percentage, within their current basic insurance, for care that is not fully reimbursed (not in figure). Table 5 shows that people with a higher income, people who use more care, and people who indicated that they know exactly what the conditions for reimbursement of their basic insurance are, indicated this to a lesser extent than people with a lower income, people who use less care, and people who did not indicate that they know exactly what the conditions for reimbursement of their basic insurance are.

[Table 3] [Figure 1] [Table 4] {Table 5]

To what extent do the conditions of a policy with restrictive conditions affect enrollees' choice of a healthcare provider?

Approximately a quarter (23%) of the respondents wanted to go to a healthcare provider who was not contracted by their health insurer in the 12 months before the questionnaire. Of this group of respondents (n=2,537), 38% indicated that this was for hospital care, 24% for pharmaceutical care, 14% for mental health care, 13% for medical aids, and 2% for district nursing (not in figure).

Of the group who have been in the situation that the healthcare provider they wanted to visit was not fully reimbursed, 62% still went to that non-contracted healthcare provider. Logistic regression analysis showed that people with a high level of education, people with a better health status, and people who use care, more often indicated this than people with a low level of education, people with a poorer health status, and people who do not use care (Table 6). However, 12% went to another care provider who was fully reimbursed and 26% refrained from health care altogether (not in figure). Calculated on the total number of respondents (the 10,852 respondents who filled out Q6, see Table 1), the percentage who refrained from health care is 6%. People with a low level of education and people who use less care more often indicated that they refrained from care than people with a high level of education and people who use more care (Table 7).

[Table 6] [Table 7]

To what extent do enrollees with a policy including restrictive conditions experience the unexpected costs of additional payments?

A total of 4,404 respondents (41%) indicated that they had been to a hospital for care in the 12 months before the questionnaire (see Fig. 2). Of this group, 48% indicated that they had to pay extra for the care they received in the hospital. According to these 2,090 respondents, this was because the hospital care was not fully reimbursed by the insurer in two out of five cases (39%). In the other cases (61%), the costs were, according to the respondents, related to something other than noncontracted care, or the respondents did not know the reason for the costs. The majority (62%) of

the respondents who said they had to pay extra because hospital care was not fully reimbursed, did not know this in advance. Calculated on the total number of respondents (10,805 respondents who filled out Q10, see Table 1), this means that 5% found themselves in this situation. For the group of respondents who did know that they had to pay extra for their hospital care (n=298), the level of the additional payment was unclear in three out of five cases (62%). Table 8 shows that income and health status are significantly associated with the knowledge of having to pay extra for hospital care. People with a higher income and people with a better health status more often reported that they knew that they had to pay extra for hospital care than people with a lower income and people with a poorer health status.

For 30% of the respondents who had to pay extra because hospital care was not fully reimbursed (240 out of 803 respondents), paying extra was a serious problem. This concerns 2% of the total number of respondents (10,805 respondents who filled out Q10, see Table 1). Logistic regression analysis showed that people with a lower income and people with a poorer health status more often indicated that paying extra was a serious problem than people with a higher income and people with a better health status (Table 9). The group for whom paying extra was a serious problem, consists largely of enrollees with a low net monthly household income (net monthly income €<2500). In most cases these also indicated that they did not know that they had to pay extra.

Discussion

The aim of this study was to gain insight into enrollees' awareness of the restrictive conditions of their health insurance policies. Our results indicate, firstly, that not all enrollees who have a policy with restrictive conditions are well aware of the consequences of receiving care from a non-contracted healthcare provider. More than a third of the respondents did not consider which providers are fully reimbursed when choosing their health insurance policy. Once enrolled, one fifth of them appear to be totally unfamiliar with the restrictive conditions of their policy. Secondly, our results show that being enrolled in a policy with restrictive conditions does not always seem to affect enrollees' choice of a provider. In the 12 months before the questionnaire, three out of five respondents who wanted to go to a particular provider who was not fully reimbursed, still went to that non-contracted provider. Thirdly, our results show that there are a considerable number of enrollees with a policy which includes restrictive conditions who have faced unexpected costs in the 12 months before the questionnaire. The majority (62%) of the respondents who said they had to pay extra in the 12 months before the questionnaire, because hospital care was not fully reimbursed, did not know this in advance. For 30% of these respondents this was a serious problem. This is 2% of the total number of respondents.

How these Dutch results compare to the situation in other countries with similar health systems is unknown. Apart from a growing body of literature from the US, studies about health insurance literacy in other countries are lacking. In addition, this is the first study in which the study population specifically consists of enrollees with a restrictive health plan. However, a comparison with a survey based study from the US among a more varied population of enrollees indicates that the proportion of respondents (35%) that do not consider which providers are fully reimbursed when choosing their health insurance policy is relatively high [13]. The study from the US found that only 21% of their respondents was only somewhat or not at all likely to check which hospitals and physician are covered in each plan when comparing plans [13]. In addition, the percentage that did not know in advance that they had to pay extra (62%) seems to be high, as in the US study only 42% of the respondents indicated that they were not at all or only somewhat likely to check what their plan will and will not cover before getting health services [13]. Although study populations differ, this gives an indication that HIL among Dutch enrollees with a restrictive policy is relatively low.

[Table 8] [Table 9]

Desirability of health insurance policies with restrictive conditions for the healthcare system

Taking into account managed competition in the Dutch healthcare system, offering health insurance policies with restrictive conditions is desirable for two reasons. Firstly, it contributes to a wider range of health insurance policies. This results in more freedom of choice for enrollees, who can opt for a policy with a lower premium that suits their preferences. Ensuring enrollees freedom of choice is one of the conditions to enable the health insurance market to function properly [45, 46]. Secondly, health insurance policies with restrictive conditions offer health insurers the option of selective contracting, which in theory makes channelling enrollees to contracted care providers possible. This is a very important instrument for health insurers in a healthcare system based on managed competition. It can lead to efficient healthcare procurement, as it provides them with a stronger position during the negotiations with providers on the price and quality of care [9, 47, 48].

Nevertheless, the findings of this study raise questions about the actual desirability in practice of health insurance policies which include restrictive conditions. Insurance policies are meant to ensure that people have access to the health care they need, without being exposed to financial hardship. However, our results suggest that this goal of health insurance is not achieved for all enrollees. There appears to be a group of enrollees who face serious problems as the result of having to pay extra for hospital care. Many of them did not know that they had to pay extra or did not know how much they would have to pay.

Furthermore, our study shows that, despite what the theory suggests, selective contracting seems to fall short in practice as an instrument for channelling enrollees to contracted care providers. Of the respondents who wanted to go to a provider who was not contracted by their health insurer, only 12 percent changed their mind and opted for a contracted provider. Previous research into choices in pharmaceutical care showed that financial incentives in restrictive health plans are effective in channelling patients to contracted pharmacies in the Netherlands [9, 49, 50]. Then again, other literature shows that patients prefer not to be guided when choosing a general practitioner, dentist, or physiotherapist [51]. Further research could provide more clarity about the effectiveness of co-payments in channelling enrollees to contracted providers.

Improving knowledge and the ability to channel enrollees

The results of our study show that there is room to improve the knowledge about the consequences of visiting a non-contracted provider, in particular for people for whom paying extra is a greater problem. Mainly people with a low level of education, people with a lower income and people with a poorer health status seem to have less knowledge about the restrictive conditions of their policy. These groups also appear in several other studies as groups with lower levels of health insurance literacy [13, 16]. In addition, people with a lower income and people with a poorer health condition are also the groups who indicated that paying extra was a greater problem.

When it comes to gaining knowledge about the restrictive conditions, our study found that knowledge is partly acquired naturally by an ‘experience effect’: (frequent) care users are better informed than nonusers about the restrictive conditions of their health insurance policy. At the same time, as mentioned before, it appears that people in poor health are generally less well informed about the restrictive conditions. It therefore seems that the ‘experience effect’ may counteract the ’health effect’. Thus, people in poor health on average make less informed decisions, but may become aware of the restrictive conditions of their health insurance policy when using care. Results of additional analyses (not shown in table) are in line with this assumption by showing that people in poor health who use care, are in general more aware of the restrictive conditions than people in poor health who do not use care.

Although knowledge can be gained through experience, it is important enrollees are informed about the restrictive conditions before they actually need care, so that they are not taken by surprise. Appropriate information provision could play an important role in improving both the ability to channel enrollees and in preventing enrollees from facing unexpected costs. If enrollees have a good understanding about the conditions of their policy, they may make different choices of providers in order to avoid having to pay extra. For the functioning of a healthcare system with managed competition, being able to influence the choice of enrollees for a provider is indispensable [9]. However, it might be that information itself is not the problem, but the way the information is framed by the insurer or processed by certain enrollees. We generally know that people find it difficult to find information on the website of a health insurer [52]. Further research could focus on how enrollees are actually informed by their health insurers, and whether or how they use this information.

Since it is questionable whether better information provision proves to be the solution to strengthen selective contracting as an instrument for channeling enrollees to contracted care providers, is it also relevant to conduct research into alternative instruments. Besides selective contracting, providing health care advise can be an instrument to channel enrollees [53–55]. In the Netherlands we see that providing health care advice to enrollees also plays an increasingly important role in channeling them. However, from previous research we know that insurers may lack (institutional) trust, which may be a limitation of this instrument [56–60]. Future research could focus on this topic.

Strengths and limitations

A strength of this study is the way in which the respondents were recruited. This took place with help from the health insurers, who sent the invitation to participate to their enrollees. This means that a large part of the Dutch population of enrollees with a policy with restrictive conditions has been invited to participate. However, a limitation is that the response to the online questionnaire was very low (3.4%). Other studies, in which recruitment takes place in a similar manner via health insurers, show a response of around 30% [61–63]. It is uncertain why the response was so low. The month in which enrollees were invited to participate (August) may have affected the response, as usually many people are on holiday at this time of the year.

The consequences of the low response rate with regard to the external validity of the results of this study are unknown. In addition, checking for representativeness of the sample is limited by the lack of descriptive data on the characteristics of the Dutch population opting for restrictive policies. The information that is available about this population shows that age and income within our group of respondents seems higher [64]. However, the group of respondents shows similarities concerning the educational level and health of the entire Dutch population of enrollees with a policy with restrictive conditions [64].

Another limitation is that it is uncertain how people have interpreted the concept of ‘co-payments’ in the questionnaire. It may be the case that some respondents have mixed co-payments as a result of non-contracted care with other payments such as the obligatory deductible. However, the question clearly states that it does not concern payments on the obligatory deductible, so we assume that possible confusion has been kept to a minimum.

Conclusions

This study concludes that not all enrollees with a policy that includes restrictive conditions are aware of its conditions. Having better informed enrollees can ensure that health insurers are better able to channel enrollees, since it will be more likely that they will opt for a contracted provider to avoid having to pay extra. This will benefit the functioning of the healthcare system based on managed competition. The ability to channel enrollees can, in the end, lead to more efficient

healthcare procurement due to the improved negotiating position of health insurers [9, 47, 48]. There seems room to improve the information provision, in particular for people with a low income and people with a poorer health status, as these groups more often reported not to know they had to pay extra for this hospital care and more often faced financial problems. However, it is uncertain whether this is because the information about the conditions of their policies is insufficient. It could be that these groups are less likely to read the information about the conditions of their policies or understanding the information is more difficult for them. Further research could focus on how enrollees are informed by their health insurer and whether and how they use this information.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Tables and figures

Table 1 Questions used to examine the three main research questions.

Main research question	Questions in the questionnaire	Answer categories
To what extent do enrollees with restrictive conditions in their health insurance policy know about these conditions?	Q1: When choosing your health insurance policy, did you consider which healthcare providers are fully reimbursed under your current basic insurance?	No (score 1); Yes, I have taken into account the number of healthcare providers whose care is fully reimbursed (score 2); Yes, I have considered why certain healthcare providers are / are not fully reimbursed (score 3); Yes, I have taken into account the distance from my home to the healthcare providers who are fully reimbursed (score 4); Yes, I have checked whether the healthcare providers I am already visiting are fully reimbursed (score 5); Yes, I have checked whether the healthcare providers I would like to go to if I need certain care are fully reimbursed (score 6); Yes, I have taken into account how much I have to pay if I go to healthcare providers who are not fully reimbursed (score 7); Yes, I have taken into account something else (score 8).
	Q2: Have you checked whether the providers of a certain type of care are fully reimbursed?	No (score 1); Yes, especially whether healthcare providers are fully reimbursed for hospital care (score 2); Yes, especially ... for district nursing (score 3); Yes, especially ... for mental health care (score 4); Yes, especially ... for medical aids (score 5), Yes, especially ... for pharmaceutical care (score 6); Yes, for another type of care (score 7).
	Q3: Are you familiar with the conditions of your basic insurance?	No, I am not familiar with them (score 1); Yes, but I do not know what it says

Table

Table 1 continued

		(score 2); Yes, and I know roughly what it says (score 3); Yes, and I know exactly what it says (score 4).
	Q4: For 1) hospital care, 2) district nursing, 3) mental health care, 4) medical aids, 5) pharmaceutical care, do you have any idea how many care providers are fully reimbursed in the basic insurance that you have taken out this year (2020)?	Yes, I know exactly (score 1); Yes, I know approximately (score 2); No, I do not know, but I can investigate that (score 3); No, I do not know and I can't easily investigate it.
	Q5: What is the maximum reimbursement percentage in your current basic insurance for care that is not fully reimbursed?	Less than 70% (score 1); More than 70% (score 2); I do not know (score 3).
To what extent do the restrictive conditions of a policy affect enrollees' choice of a	Q6: In the past 12 months, have you ever been in the situation that you wanted to go to a particular	No (score 1); Yes, one time (score 2), Yes, several times (score 3).

Table 1 continued

Main research question	Questions in the questionnaire	Answer categories
healthcare provider?	healthcare provider whose care was not fully reimbursed?	
	[If Q6 = score 2 or 3] Q7: What type of care was this for?	Hospital care (score 1); district nursing (score 2); mental health care (score 3); medical aids (score 4); pharmaceutical care (score 5); a different kind of care (score 6).
	[If Q6 = score 2 or 3] Q8: Did you still go to this healthcare provider who was not fully reimbursed at that time?	Yes, I went to this healthcare provider after all (score 1); No, I did not go to this care provider at the time (score 2).
	[If Q8 = score 2] Q9: Did you go to another healthcare provider who was fully reimbursed?	Yes, I went to a healthcare provider who was fully reimbursed (score 1); No, in the end I did not go to a healthcare provider (score 2).
To what extent do enrollees who have a policy with restrictive conditions experience unexpected costs from additional payments?	Q10: Have you visited the hospital for care in the past 12 months?	No (score 1); Yes (score 2).
	[If Q10 = score 2] Q11: In the past 12 months, have you had to pay, or pay extra, for care that you received in the hospital?	No (score 1); Yes (score 2); I do not know (score 3).
	[If Q11 = score 2] Q12: Did you have to pay extra because this hospital care was not fully reimbursed by your health insurer?	No (score 1); Yes (score 2); I do not know (score 3).
	[If Q12 = score 2] Q13: Did you know in advance that you had to pay – or pay extra – for this hospital care?	No (score 1); Yes (score 2).
	[If Q13 = score 2] Q14: Was it clear in advance how much you would have to pay – or pay extra – for this hospital care?	No (score 1); Yes (score 2).
	[If Q12 = score 2] Q15: Has paying extra for this hospital care been a problem for you?	A serious problem (score 1); A minor problem (score 2); No problem (score 3).

Table 2 Descriptive statistics of the respondents.

	Number of respondents (n)	Percentage (%) or mean (SD)
Sex	13,588	
Male	7,058	52%
Female	6,490	48%
Non-binary	40	0%
Age	13,588	47 (0.15)
18-39 years	5,411	40%
40-64 years	5,864	43%
65 years and older	2,313	17%
Education	13,588	
Low (none, primary school or pre-vocational education)	994	7%
Middle (secondary or vocational education)	3,157	23%
High (professional higher education or university)	6,101	45%
Other	160	1%
Unknown	3,176	23%
Net monthly income of the household	13,588	
< €1500	2,307	17%
€1500 - €2500	2,915	21%
€2500 - €3500	2,142	16%
> €3500	2,578	19%
Unknown	3,646	27%
Health (self-reported)	13,588	
Bad/fair	1,064	8%
Good	4,249	31%
Very good/excellent	5,371	40%
Unknown	2,904	21%
Care use (self-reported)	13,588	
No	1,796	13%
Very little/little	7,523	55%
Much/very much	1,337	10%
Unknown	2,932	22%

Table 3 Multivariate logistic regression to examine the associations between the results of Q1 and the socio-demographic characteristics of the respondents.

		Model 1: Dependent variable: When choosing your health insurance policy, did you consider which healthcare providers are fully reimbursed under your current basic insurance? (1=no, 0=yes) ***n=9,621*** **Odds Ratio**	***p*-value**
Sex	Male	reference	
	Female	0.67	0.00*
	Non-binary	1.05	0.90
Age	18-39	reference	
	40-64	1.20	0.00*
	65 and older	0.84	0.01*
Education**	Low	reference	
	Middle	0.79	0.00*
	High	0.63	0.00*
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	0.70	0.00*
	€2500 - €3500	0.61	0.00*
	> €3500	0.58	0.00*
Health (self-reported)	Bad/fair	reference	
	Good	0.82	0.02*
	Very good/ excellent	0.82	0.02*
Care use (self-reported)	No	reference	
	Very little/little	0.61	0.00*
	Much/very much	0.48	0.00*
Constant		2.09	0.00

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

*Figure 1 When choosing your health insurance policy, did you consider which healthcare providers are fully reimbursed under your current basic insurance? (multiple answers possible) (n=12,568) * The answer option 'No' could not be combined with other answer options.*

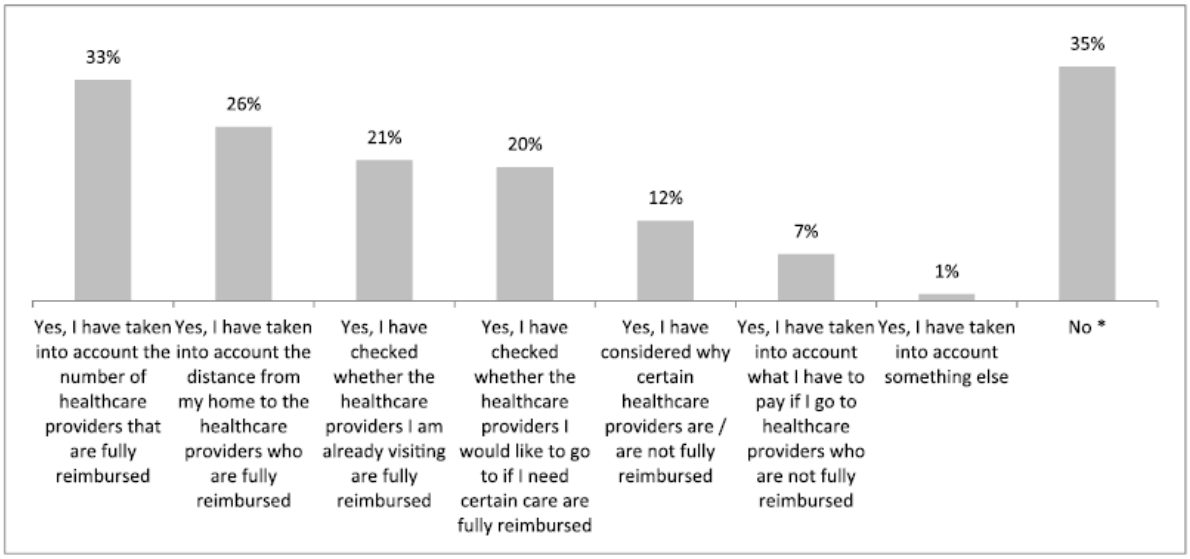

Table 4 Multivariate logistic regression to examine the associations between the results of Q3 and the socio-demographic characteristics of the respondents.

		Model 2: Dependent variable: Are you familiar with the conditions of your basic insurance? (1=yes, and I know roughly what it says/ yes, and I know exactly what it says, 0=no, I am not familiar with them/ yes, but I don't know what it says) *n=9,650* Odds Ratio	*p*-value
Sex	Male	reference	
	Female	1.15	0.00*
	Non-binary	0.83	0.67
Age	18-39	reference	
	40-64	1.89	0.00*
	65 and older	4.01	0.00*
Education**	Low	reference	
	Middle	1.10	0.25
	High	1.34	0.00*
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	1.15	0.02*
	€2500 - €3500	1.29	0.00*
	> €3500	1.54	0.00*
Health (self-reported)	Bad/fair	reference	
	Good	1.32	0.00*
	Very good/ excellent	1.39	0.00*
Care use (self-reported)	No	reference	
	Very little/little	1.38	0.00*
	Much/very much	1.69	0.00*
Constant		0.27	0.00*

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

Table 5 Multivariate logistic regression to examine the associations between the results of Q5 and the socio-demographic characteristics of the respondents.

		Model 3: What is the maximum reimbursement percentage in your current basic insurance for care that is not fully reimbursed? (1=I do not know, 0=I do know***) *n=9,621* Odds Ratio	*p*-value
Sex	Male	reference	
	Female	1.03	0.47
	Non-binary	0.78	0.55
Age	18-39	reference	
	40-64	0.97	0.51
	65 and older	0.99	0.84
Education**	Low	reference	
	Middle	0.99	0.87
	High	1.06	0.45
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	0.77	0.00*
	€2500 - €3500	0.74	0.00*
	> €3500	0.72	0.00*
Health (self-reported)	Bad/fair	reference	
	Good	0.86	0.07
	Very good/ excellent	0.88	0.13
Care use (self-reported)	No	reference	
	Very little/ little	0.67	0.00*
	Much/very much	0.60	0.00*
Totally familiar with the conditions of their basic insurance (self-reported) ****	No	reference	
	Yes	0.24	0.00*
Constant		2.96	0.00

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

*** If respondents gave the answer 'Less than 70%' or 'More than 70%'.

**** Based on answer on Q3: Are you familiar with the conditions of your basic insurance? (1=Yes, and I know exactly what it says, 0=No, I am not familiar with them/Yes, but I don't know what it says/Yes, and I know roughly what it says).

Table 6 Multivariate logistic regression to examine the associations between the results of Q8 and the socio-demographic characteristics of the respondents.

Multivariate logistic regression to examine the associations between the results of Q8 and the socio-demographic characteristics of the respondents.

		Model 4: Dependent variable: Did you still go to this healthcare provider who was not fully reimbursed at that time? (1=no, 0=yes) *n=2,286* Odds Ratio	*p*-value
Sex	Male	reference	
	Female	0.97	0.72
	Non-binary	0.31	0.30
Age	18-39	reference	
	40-64	0.96	0.64
	65 and older	0.92	0.59
Education**	Low	reference	
	Middle	0.71	0.06
	High	0.65	0.02*
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	1.21	0.10
	€2500 - €3500	0.82	0.15
	> €3500	0.78	0.06
Health (self-reported)	Bad/fair	reference	
	Good	0.73	0.03*
	Very good/ excellent	0.54	0.00*
Care use (self-reported)	No	reference	
	Very little/little	0.58	0.00*
	Much/very much	0.59	0.01*
Constant		2.35	0.00

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

Table 7 Multivariate logistic regression to examine the associations between the results of Q9 and the socio-demographic characteristics of the respondents.

Multivariate logistic regression to examine the associations between the results of Q9 and the socio-demographic characteristics of the respondents.

		Model 5: Dependent variable: Did you go to another healthcare provider who was fully reimbursed? (1=no, 0=yes) *n=854* Odds Ratio	*p*-value
Sex	Male	reference	
	Female	0.87	0.38
	Non-binary***	-	-
Age	18-39	reference	
	40-64	0.86	0.39
	65 and older	0.73	0.26
Education**	Low	reference	
	Middle	0.91	0.76
	High	0.52	0.04*
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	1.04	0.85
	€2500 - €3500	0.51	0.01*
	> €3500	0.72	0.17
Health (self-reported)	Bad/fair	reference	
	Good	1.00	0.98
	Very good/ excellent	0.67	0.11
Care use (self-reported)	No	reference	
	Very little/little	0.34	0.00*
	Much/very much	0.22	0.00*
Constant		17.07	0.00

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

*** Number of non-binary respondents too low (1 respondent).

Table 8 Multivariate logistic regression to examine the associations between the results of Q13 and the socio-demographic characteristics of the respondents.

		Model 6: Dependent variable: Did you know in advance that you had to pay – or pay extra – for this hospital care? (1=yes, 0=no) *n=732* Odds Ratio	*p*-value
Sex	Male	reference	
	Female	0.89	0.49
	Non-binary	0.62	0.69
Age	18-39	reference	
	40-64	1.11	0.56
	65 and older	0.89	0.64
Education**	Low	reference	
	Middle	0.78	0.44
	High	0.96	0.91
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	1.49	0.07
	€2500 - €3500	1.76	0.02*
	> €3500	2.51	0.00*
Health (self-reported)	Bad/fair	reference	
	Good	2.74	0.00*
	Very good/ excellent	3.22	0.00*
Care use (self-reported)	No	reference	
	Very little/little	0.95	0.90
	Much/very much	1.13	0.76
Constant		0.17	0.00

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

Table 9 Multivariate logistic regression to examine the associations between the results of Q15 and the socio-demographic characteristics of the respondents.

		Model 7: Dependent variable: Has paying extra for this hospital care been a problem for you? (1=a serious problem, 0=no problem/a minor problem) *n=732*	
		Odds Ratio	*p*-value
Sex	Male	reference	
	Female	0.76	0.14
	Non-binary	12.41***	0.05*
Age	18-39	reference	
	40-64	1.23	0.31
	65 and older	0.66	0.14
Education**	Low	reference	
	Middle	0.74	0.33
	High	0.83	0.56
Net monthly income of the household	< €1500	reference	
	€1500 - €2500	0.45	0.00*
	€2500 - €3500	0.30	0.00*
	> €3500	0.08	0.00*
Health (self-reported)	Bad/fair	reference	
	Good	0.58	0.04*
	Very good/ excellent	0.55	0.03*
Care use (self-reported)	No	reference	
	Very little/little	0.47	0.05
	Much/very much	0.66	0.34
Constant		4.14	0.01

* Significant *p*-value

** Low = none, primary school or pre-vocational education. Middle = secondary or vocational education. High = professional higher education or university.

*** OR is high due to the low number of non-binary respondents on Q15 (n=4).