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Quality of Diabetes Care in Disease Management Programmes in Germany

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Context, problem and aim

Brief outline of context and problem: Intensive efforts have been made in Germany since the late 1990s to enhance integration and quality management within the fragmented health care sector, especially in diabetes care.

Strategy for change: In 2002 Disease Management Programmes (DMP) were introduced by legislation to improve quality of care for the most common chronic diseases, one of them diabetes. DMP involve the statutory health insurance funds (SHIs) receiving additional compensation if their chronically ill customers enrol in these programmes.

Assessment of problem and analysis of its causes: Apart from official evaluation methods, there are now approaches to compare process and outcome measures using a control group design. One of these is to compare the views of patients enrolled in a DMP for diabetics with non-participants who continue in regular care.

Data and methods

A representative survey of diabetics aged 45 to 79 years who were insured with BARMER health insurance in 2007 was carried out (total: 11 200). Responses were received from 38.5% of the random sample.
On the basis of other investigations, a standardised questionnaire was developed with 51 questions for both DMP-participants and non-participants addressing the following topics: health status, life quality, duration of disease, type/place of treatment, comorbidity, disease coping; frequency of visits to doctors, care, therapy objectives; satisfaction with the treatment for the diabetes, and the relationship with the doctor and medical personnel; information and participation in training courses; diabetes check-ups, customer satisfaction and knowledge about the DMP. In the second part of the questionnaire, the DMP-participants were asked in 13 further questions about their motives for taking part in the programme, changes since they started participating, and their satisfaction with the programme.

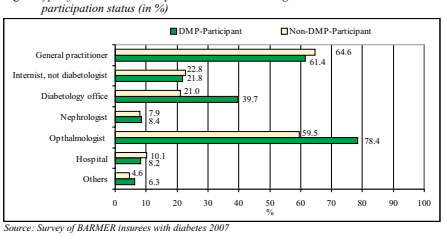
Results

Analysis DMP-participants and non-participants in comparison

Type of treatment, satisfaction with the care and characteristic differences

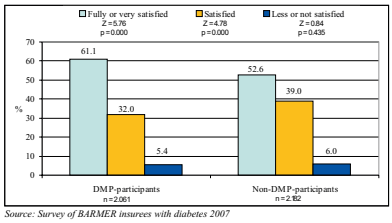
Slightly more non-participants than DMP-participants had been receiving treatment from a general practitioner in the last twelve months. But a much higher proportion of DMP-participants were receiving treatment at a diabetology office (nearly twice as many as non-participants (Fig.1). Overall, the DMP-participants showed a considerably higher level of satisfaction with the care they received for diabetes (Fig.2). Other characteristic differences are their better school qualification, better information, and better **process parameters** in diabetes care (Fig.3).

Fig. 1: *Type of treatment over the past 12 months according to DMP participation status (in %)*



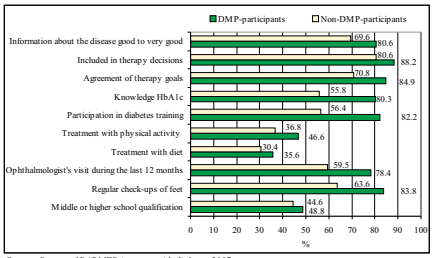
Source: Survey of BARMER insurees with diabetes 2007

Fig. 2: *Satisfaction with the diabetes care by the doctor according to DMP participation status (in %)*



Source: Survey of BARMER insurees with diabetes 2007

Fig. 3: *Characteristic differences between participants and non-participants (in %)*



Source: Survey of BARMER insurees with diabetes 2007

Multivariate analyses

To clarify whether the perceived benefits of the programme differ as a result of a selection effect from educational status, multivariate analyses were carried out. For this the two highest categories of health satisfaction (completely and very satisfied) formed one group, and the other three categories (satisfied, less satisfied, and not satisfied) were combined in a reference group.
The resolution between the groups in the model is significant (above 99%). Model fit for the intercept only is 2 log-likelihood 1385.2 and for the final model 2 log-likelihood 1267.5.
The model shows that both the participation in the programme and higher levels of education have independent positive effects on the health satisfaction, with the effect of programme participation being stronger.
Respondents not participating in the Disease Management Programme had a 28% lower chance of being very or completely satisfied with their diabetes care compared with DMP participants.

Tab. 1: *Multivariate Model: Health satisfaction*

	n	Odds ratio[1]	95% lower confidence interval	95% upper confidence interval	p
	2,321				
DMP					
Non-participant in DMP	1,191	0.76	0.63	0.91	0.0027
Participant in DMP	1,130	1			
Sex					
Male	1,314	1			
Female	1,007	0.64	0.54	0.77	0.0000
School education					
Basic schooling	1,147	0.83	0.69	0.99	0.0368
Higher schooling	1,881	1			
Duration of diabetes-disease					
Up to 10 years	1,383	1.08	0.89	1.30	0.4453
More than 10 years	938	1			
Age					
45-59 years	410	0.72	0.56	0.93	0.0118
60-69 years	923	1.15	0.94	1.40	0.1673
70-79 years	510	1			
Type of care					
Diabetology centre	510	0.81	0.65	1.01	0.0649
Internist	431	0.91	0.72	1.16	0.4618
General practitioner	1,380	1			
Severity of diabetes					
Less/not severe	855	7.59	5.57	10.33	0.0000
Not so bad	1,157	2.78	2.10	3.68	0.0000
Severe to very severe	460	1			

[1] Results for Health satisfaction, value 5-7 on a 7-point scale (1=very unsatisfied, 7= very satisfied); Reference: satisfied, less satisfied and not satisfied, value 1-3, with the health

p: p-value

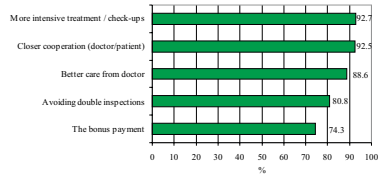
Source: Survey of BARMER insurees with diabetes 2007

Analysis of the DMP participants

Reasons for participating in the DMP

The most important reasons for the decision to sign up for the DMP related to expectations about the quality of care and the doctor-patient relationship. A monetary motivation, which is frequently proposed as a control instrument in the health-policy discourse, was only important for a smaller number of health insurance customers: the financial bonus of 40 that was offered only ranked fifth on the list of reasons given for participation in the DMP (Fig. 4).
The main reasons given for participating in the DMP were anticipated improvements in the quality of care and in the doctor-patient-cooperation.

Fig.4: *Most important criteria for participating in DMP (in %)*



Source: Survey of BARMER insurees with diabetes 2007

Changes since taking part in the DMP

Almost half the DMP-participants said that their state of health had improved since they started taking part. This proportion was higher for those who had participated in the programme for a longer period (Tab. 2).
Since they had joined the DMP, 45.3% had seen no improvement in their state of health, and only 3.6% felt that things were worse.

Medication for 58.7% of participants was not changed after joining the DMP. A change in medication was found above all for those who had been participating in the DMP for a longer period. More than a quarter of the participants said that the doctor advised them to adopt a diet (Tab. 2).
For 54.8% of the participants, the frequency of visits to the doctor remained unchanged, 36.7% went more frequently, and only 5.6% went less often. With increasing length of participation in the DMP, the participants visit the doctor more frequently. 61.3% of participants are of the opinion that the doctor takes more time for them, and here too this proportion increases with longer participation in the programme (Tab. 2).

Tab. 2: *Changes depending on how long respondents had been taking part in the DMP (in %)*

	All participants (n=2,061)	Participant for 1 year (n= 363)	Participant for >=2 years (n =1,698)	p
Change in state of health				
Yes, improved	49.1	39.2	51.2	0.000
Yes, got worse	3.6	2.1	3.9	0.042
No	45.3	56.5	42.9	0.000
Change in medication				
Prescribed insulin for first time	12.9	7.3	14.1	0.000
Prescribed tablets for first time	11.8	4.6	13.4	0.000
Changed to other tablets	15.8	11.2	16.7	0.004
Doctor advised me to diet more	27.1	21.2	28.3	0.003
Therapy not changed	58.7	69.8	56.4	0.000
Visit to doctor and consultancy time				
Go less often to doctor	5.6	2.3	6.3	0.000
Go more often to doctor	36.7	32.2	37.7	0.044
Go as often to doctor as before	54.8	61.8	53.3	0.003
Doctor takes more time	61.3	52.1	63.2	0.000

Source: Survey of BARMER insurees with diabetes 2007

Conclusion

Lessons learnt and message for others: We conclude that the political decision to run disease management programmes nationwide has resulted in a marked improvement in the quality of diabetes care in Germany, and this quality of care will continue to improve. Patients obviously appreciate the fact that the health personnel and the insurance company are taking increased interest in their disease.