

P. Javaher · G. Seidel · M.-L. Dierks

Participation in disease management of a health insurance company: characteristics and assessment of the process and outcome parameters in the programme

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Abstract The treatment of diabetes mellitus as a chronic disease depends on patient willingness to adopt changes in lifestyle, nutrition, and therapy self-management. In Germany, treatment is regionally different and partly inadequate. Disease management programmes (DMP) are discussed and implemented in several settings in order to optimise the quality of treatment supply. Accordingly, the Federal Association of Company Health Insurance Funds (BKK) implemented-in co-operation with a call centre-a structured diabetes programme using regular telephone consultations since 2001. The programme is used by 15% of eligible persons. Participant overall satisfaction is high; however, the central variables in the multivariate model were expectations and attitude of participants, which could be influenced by concerted interventions within the scope of the programme. To integrate non-participating insured, it makes sense to consider the specific attitude and requirements of the target group and to take them into account, particularly for information of the potential participants.

Introduction

In Germany, although no exact figures are available, the prevalence of diabetes is approximately 5–6%. Prevalence increases with the age, and above 60 years, women are more affected (Statistisches Bundesamt 1998; Thefeld 1999). Investigation into diabetes care in Germany show regionally different deficits in patient management, and some years ago, a gap existed between medically reachable and actual results in the provision of treatment (SVR 2003; WHO 1990). Although some different regional efforts have

been made to optimise the provision treatment (Schulze et al. 2003), more initiatives are still necessary around the country.

To improve this situation, the , Federal Association of Company Health Insurance Funds (BKK)-in co-operation with the call centre Medical Contact AG-implemented a diabetic programme as a model for disease management in 2001. Based on routine data, 29,623 insurants with diabetes mellitus were identified and invited into the programme; 15.7% of them were registered in September 2003, 1,020 insurants (18% of the primary participants) have cancelled.

The programme consists of an intense support service of insurants by phone. The patients-predominantly with diabetes type II-are contacted regularly and informed about the disease. An element of the programme is reminding patients of upcoming check-ups as well as emotional support to help them handle this chronic disease. After 2 years, there were significant improvements of HbA1c and other blood lipid parameters registered by patients with at least 1 year of participation. Additionally, economic effects through the reduction of expenditures for in-patient treatments and a reduction of drug costs were verified (Nolting et al. 2004). The objective of the evaluation in 2003 was to determine how insurants rate the programme, which aspects are particularly relevant for them and how high their interest is to continue participating.

Research design and methods

A standardised instrument-developed after dialogues with advisors, observation in the call centre and qualitative interviews with participants and drop-outs was used. This instrument detects different facets of satisfaction, estimation of the information content of the advisors, validation of professionalism of the advisors, benefit of the programme and insurants' attitudes towards the programme (Javaher 2004). The questionnaire was corrected after a pre-test phase and was sent through Medical-Contact-Ag to 1,200 randomly chosen participants of longer than 6 months in the programme and not older than 70 years. The questionnaires

P. Javaher (✉) · G. Seidel · M.-L. Dierks
Institut für Humangenetik,
Medizinische Hochschule Hannover,
Carl-Neuberg-Str. 1,
30625 Hannover, Germany
e-mail: javaher.poupak@mh-hannover.de
Tel.: +49-511-5329827
Fax: +49-511-5325865

were returned anonymously to the Medical School of Hanover. After one reminder letter, the response rate was 56%. Data were analysed using Access and SPSS, a statistical programme. For factor analysis, a bivariate model was used to evaluate different participant-related influencing factors on assessing the programme.

Another analysis used was the cluster in order to identify different types regarding specific criteria in the programme and to investigate whether there are particular differences between person groups that need to be considered in a specific way. Finally, the influence of different participant-related and programme-related aspects on overall satisfaction was measured in a variance analysis. To assess the effects of the programme, the interviewees were asked to answer which changes they realised in their health behaviour and life quality as a result of the programme.

Results

Of the responders, 65.3% were men, and marginally more than the complete group that was asked (63% men). The average age of male responders was 61 years and female responders 58 years. Responders were marginally older than the complete group (men 60, women 56). More than 60% had a CSE, and about 20% a middle degree. About 24% of responders called their health status with less well and bad; average period with the disease was 11.2 years. A third of responders suffered from secondary diseases; polyneuropathy and ophthalmological diseases were mentioned frequently.

Motivation for participation

The reasons for participation in the programme possibly influence compliance and implementation of behavioural changes. For 84%, the offer of their health insurance company was the most important reason to take part.

Assessment of medical information

Participants assessed the information about medical aspects of the diabetes programme in total with good to very good (Fig. 1). The older the interviewees and the less their school education, the more helpful they estimated the information. Interviewees in good health were significantly more satisfied with the medical information than people who felt more ill.

Information on check-ups and behaviour modification

Also helpful was reminders about examination from ophthalmologists whereas advice for sport and exercise as well as weight reduction seemed not to be very important (Fig. 2).

The older the participants, the more helpful they found the information, and people with secondary diseases estimated the issues around sport and exercise less useful (17.6% answered with less helpful and not helpful at all vs. 7.1% of the people without secondary diseases); a comparable trend was seen regarding health status. A poor health status led to a less helpful estimation of information about nutrition.

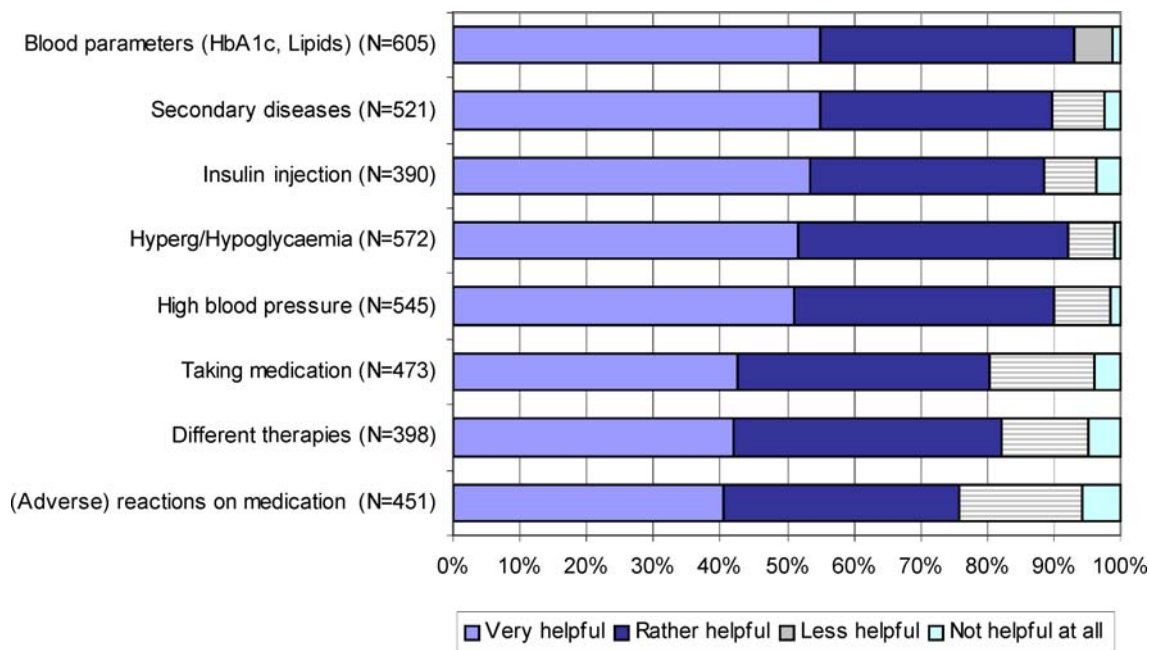


Fig. 1 Assessment of medical issues in the diabetes programme

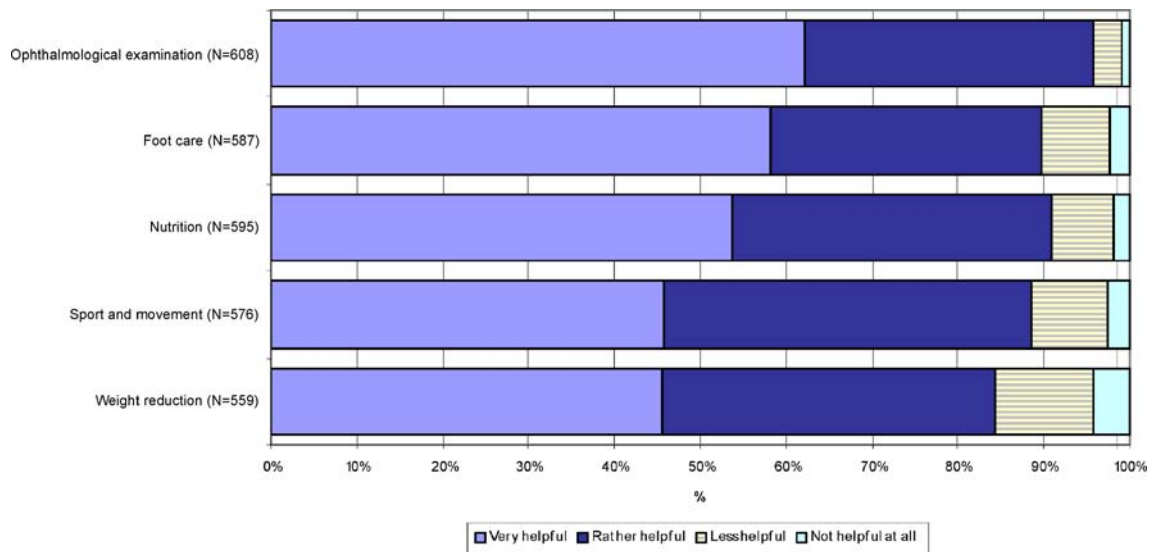


Fig. 2 Assessment of information about examinations and behaviour modification

Assessment of support and practical tips

Particularly useful for the interviewees was the encouragement and support from the advisors, followed by another communication-related statement, the possibility of talking about the disease with the advisor (Fig. 3).

The process of the consultation was detected, and it showed that advisors’ friendliness and reliability were estimated favourably (Fig. 4).

Satisfaction with the professional and personal competence was higher in older participants whereas the positive estimation of professionalism dropped with a higher school education.

Effects

There were 487 cases in which the effects of the programme were assessed, and 12.35% (*n*=60) of them saw no changes at all through their participation; 8% of these persons were able to handle their disease quite well before participation (Fig. 5).

A significant influencing factor on the effects of the programme was the length of consultations. There was no gender aspect regarding willingness to go for check-ups and behaviour modification; however, school degree was a significant influencing factor. The older the interviewees, the more they implemented the measures after the

Fig. 3 Estimating the support and the practical tips in the program

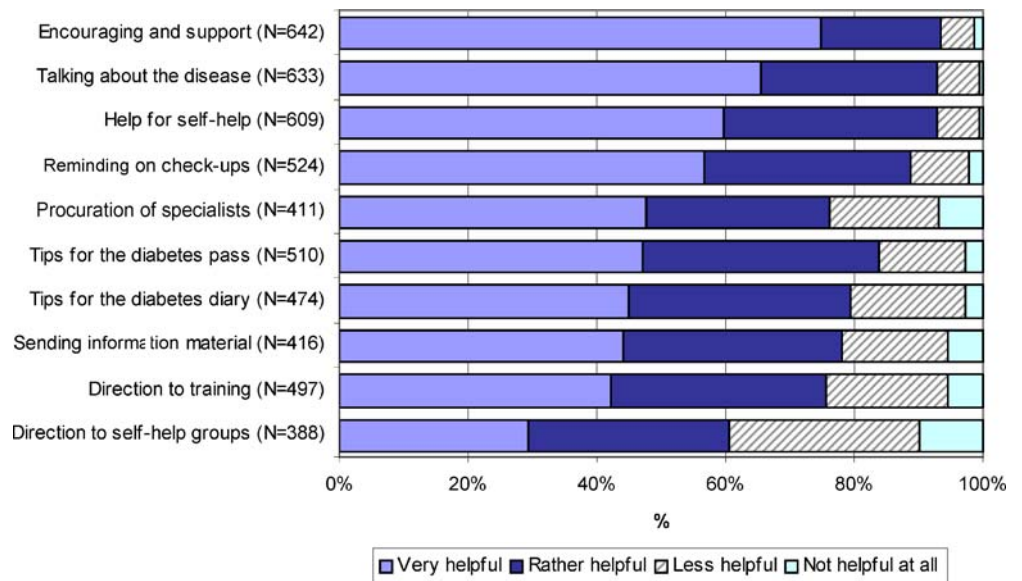
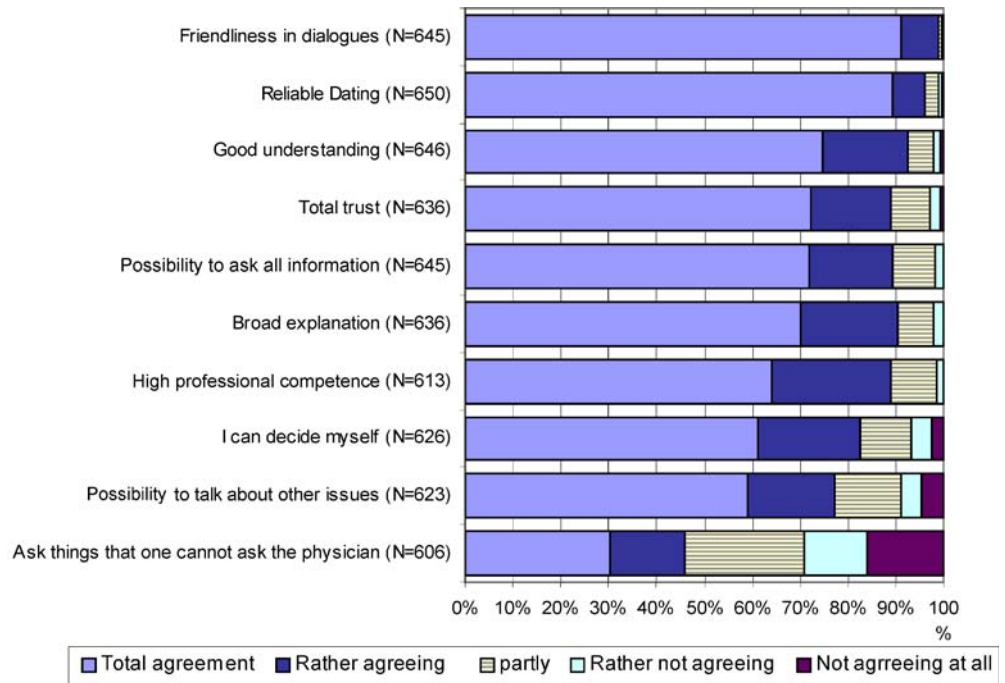


Fig. 4 Assessment of the professional and personal competence of the advisors



consultations, and the higher their school degree, the lower the willingness to implement the measures.

Overall satisfaction

Of the interviewees, 58.5% were very satisfied with the programme, 37.3 % were satisfied, and 4.2% were explicitly unsatisfied. It is important to differentiate between the data. Therefore, only answers of “very satisfied” should be understood as a full achievement of the intervention goal. All other assessments under this level should be considered as improvable, which means a 40% improvement potential.

Of the interviewees, 74.2% indicated they would definitely continue their participation, 17.1% would probably stay 8.8% were thinking about leaving. Those with higher age, good health status and lower education level showed more satisfaction and willingness to stay. Physician support for the programme was another important influencing factor; 87% of participants with such support would definitely stay while 57.6% of unsupported patients would still stay. As expected, the programme’s acceptance was particularly high if the participants realised changes in their physical and mental status.

Fig. 5 Changes in managing the disease as effects of the program (N=487); more than one answer possible

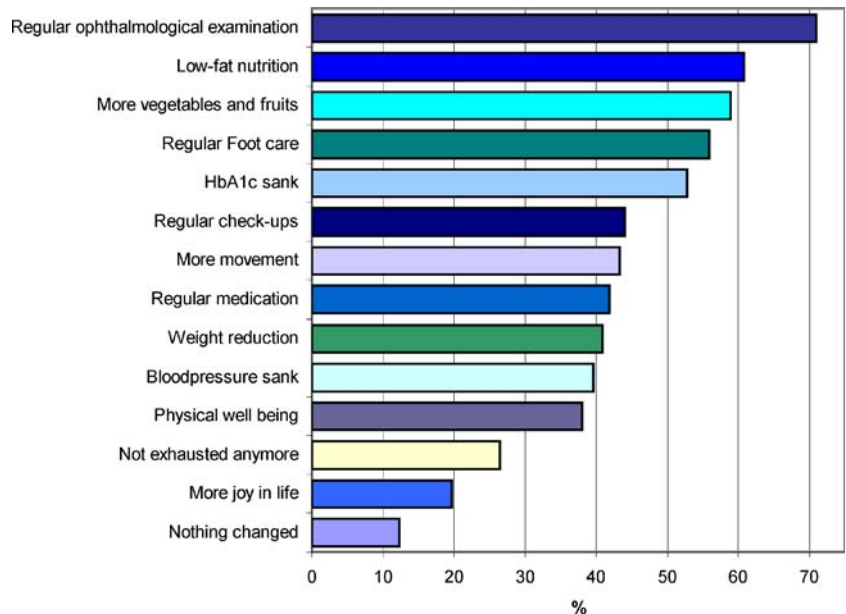


Table 1 Cluster analysis - Content of the variables to the participant groups

Variable	The “Dedicated- Satisfied”	The “Resigned”	The “Reserved- Satisfied”	The “Criticals”
I think some things about my disease are just my own personal business.	□	◐	◆	▪
Sometimes it bothers me to be asked about my blood sugar.	□	◐	▪	◆
I do not feel more secure about dealing with my disease after the consultations.	□	▪	◐	◆
Sometimes it is hard to find time for the diabetes advisor.	□	▪	◐	◆
I do not learn nothing new in the consultations anymore.	□	▪	◐	◆
I do not want to abandon too much from my self to the advisor.	□	◐	▪	◆
I can not always follow the instructions of the advisor.	□	▪	◐	◆
I had a bigger benefit from the diabetes program at the beginning.	□	▪	◐	◆
Very high agreement ◆				
High agreement ▪				
Rather low agreement ◐				
Very low agreement □				

Participant groups and regression analysis to identify significant influencing factors

Cluster analysis was used to identify participants. The following four groups were identified:

Cluster I

The Dedicated–Satisfied: “I feel well advised, the programme is effective” (27.3%)

Cluster II

The Resigned: “Managing the disease is sometimes hard” (30.4%)

Cluster III

The Reserved–Satisfied: “Consultations are helpful, but should not be too personal” (16.1%)

Cluster IV

The Criticals: “Consultations yes, but not too much control” (26.1%)

Table 2 Results of analysis of variance regarding overall satisfaction

Satisfaction with the programme	Criteria	Statistical significance
Co-variates	Information: medical aspects	*
	Information: behaviour modification	**
	Encouraging	**
	Helpful tips	–
	Professionalism of the advisors	*
	Friendliness and reliability of the advisors	**
	Age	**
Main effects	Attitudes (types)	*
	Health status	*
	Gender	**
	Education	**

*Statistically significant, $R^2 = 0.456$

**Not statistically significant

The number of the older and very satisfied, as well as behaviour modification, was the highest in the first cluster. The model was statistically significant for this group, and the influencing factor was professionalism of the advisors. Education level was highest in the second group, which was represented by the lowest number of women and the lowest health status and satisfaction level. The model was also statistically significant. Information about medical aspects followed by professionalism of the advisors had the highest effect on the overall satisfaction of this group, thus the quality of information and communication should be considered for special consultations. The third cluster contained the largest fraction of women. Here health status was the best and changes made through the programme the highest. There was no significant effect of particular variables on the overall satisfaction in this group. In the fourth cluster there were more younger and less healthy participants, and overall satisfaction was the lowest. The model shows significance for the professionalism of the advisors (Table 1).

Influencing variables on overall satisfaction regarding participant groups

The model proved to be highly stable and, with $R^2 = 0.456$, statistically significant. Age, gender and education had no significant influence on the assessment of the programme whereas health status and clusters did. The quality of medical aspects and the professionalism of the advisors were deciding programme variables for the total assessment (Table 2).

Conclusions

The diabetes programme of the Federal Association of Company Health Insurance Funds (BKK) was generally accepted by the interviewees. The willingness to continue participation was high. Overall satisfaction was influenced

by expectations and attitudes of the participants, with differences between individually varying personal backgrounds. Assumably, the lower educated, older participants with more information demand profit most from this programme.

Age, education level and health status were obviously important influencing factors on assessment of particular parts of the programme and on overall satisfaction. The critical attitude of the younger persons seems to be an established socio-economic pattern; however, it is unclear whether this is because of age or generational effects (Aust 1994). Members of higher social levels (higher education, more income) seem to demand more (Aust 1994; Cleary et al. 1991, 1992). The satisfaction with quality of treatment and health status were further influencing factors (Zaslavsky et al. 2000; Kroenke et al. 1999). Patients without reduction of complications felt less informed than others (Dierks 2001).

In accordance with other findings (Peters and Davidson 1998) behaviour modification of the participants and analogical effects on medical and economic parameters (Raji et al. 2002; Aubert et al. 1998) in a structured programme are possible (SIGN 2001; Jungmann and Jungmann 1997). The meaning of lifestyle influence as well as psychological aspects are considered to be important dimensions of a successful diabetes programme, not only because of the biological results but also as outcome parameters (Leplege and Hunt 1997; Glasgow et al. 1999).

The present analysis showed that assessment of and trust in the programme depend on the experiences and expectations of the participants. Right now, there are no results available of a qualitative examination about “drop-outs” (Javaher 2004). The originally designed survey including interviews with drop-outs could not be implemented because they tended not to fill in the questionnaire. What is known about the drop-outs is that they felt well informed and did not find additional use in the programme. They stopped because of lack of time; however, this argument demonstrates rather rationalisation for other motives, such as intervention in the privacy by insurance companies, control or being confronted with problems regarding the disease (Javaher 2004). Differentiation and systematic analysis of the reasons for drop-out is desperately important in order to identify the improvement potential of the programme, and their motives, wishes and expectations need to be further analysed.

A specific revision of the particularly important parts of the programme, such as quality of medical information and professionalism of the advisors, as well as more individually arranged patient support, seems to be reasonable. Additionally, the attitude and expectations of the total group of patients should be analysed in order to detect their preferences regarding specific support in management of their disease. Another important aspect to be taken into consideration is better cooperation between physicians and health insurance companies because integration of the physicians in such programmes plays an important role for the acceptance of the participants as well as their trust and

compliance. This is the only way to plan programmes to reach more patients and to improve the health status of the effected persons.

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