

ORIGINAL ARTICLE

Social organization of self-management support of persons with diabetes: A health systems comparison

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Abstract

Objective. Identify important organizational elements for providing self-management support (SMS). **Design.** Semi-structured qualitative interviews conducted in two healthcare systems. **Setting.** Kaiser Permanente Northern California and the Danish Health Care System. **Subjects.** 36 managers and healthcare professionals in the two healthcare systems. **Main outcome measures.** Elements important to providing self-management support to persons with diabetes. **Results.** Healthcare professionals' provision of SMS was influenced by healthcare system organization and their perceptions of SMS, the capability and responsibility of healthcare systems, and their roles in the healthcare organization. Enabling factors for providing SMS included: strong leadership; aligned incentives; use of an integrated health information technology (HIT) system; multidisciplinary healthcare provider teams; ongoing training for healthcare professionals; outreach; and quality goals. Barriers to providing SMS included lack of collaboration between providers and skeptical attitudes towards prevention and outreach. **Conclusions and implications.** Implementation of SMS can be improved by an understanding of the elements that enhance its provision: (1) initiatives seeking to improve collaboration and integration between providers; (2) implementation of an integrated HIT system; and (3) ongoing training of healthcare professionals.

Key Words: Denmark, diabetes mellitus, general practice, health system, international comparison, patient education, self-management support

Introduction

Although improvements in diabetes care can ameliorate health outcomes, they do not necessarily support patients' daily diabetes self-management behaviors [1–3]. Implementing self-management support (SMS) for people with chronic conditions is not always easy or successful [4,5] and several barriers affect the implementation of SMS initiatives: lack of nurses, lack of integration of self-management support into standard care, and the traditional model of acute episodic care have been identified in the literature [6–8]. However, research on organizational influences on SMS implementation in primary care is limited. SMS in this study refers to strategies that include patient education, the collaborative use of

behavioral-change techniques to foster lifestyle change, the adoption of health-promoting behaviors, and skill development.

The US healthcare system Kaiser Permanente (KP) has been highlighted as a successful model of integrated, cost-effective care, especially for persons with chronic conditions [9–10]. Therefore, a comprehensive research study comparing KP and the Danish Healthcare System (DHS) was carried out [11]. Results from this study show that patients more frequently reported receiving SMS within KP than in the DHS. For example, 75% of patients with diabetes in KP reported that they have talked to their doctor about the importance of taking prescribed medication versus 55% of patients with diabetes in

- When implementing disease management and self-management support programs, it is crucial to understand elements influencing the implementation process.
- The following areas are important to implementation of self-management support programs:
 - healthcare professionals' perceptions of the responsibility and capability of the healthcare system and of boundaries between clinics and the patients' homes;
 - use of healthcare professionals trained to educate and support patients' self-management;
 - strong leadership supporting self-management, including use of quality goals and aligned organizational incentives.

the DHS [Schiøtz et al., unpublished data]. KP has a centralized management structure at the regional level and provides structured disease management programs to members with chronic diseases. Diabetes care is primarily provided in medical centers, and physician office visits trigger additional options, such as nurse consultations, care management, patient education classes, and lab tests.

The DHS, a public tax-based healthcare system, is somewhat comparable to KP in terms of budget, benefits, and entitlements [11]. However, the DHS has a decentralized structure with limited integration and coordination between primary and secondary care providers [12]. Structured approaches to chronic care management have only recently been introduced. People with diabetes are treated in outpatient clinics, in family practice, or both, depending on disease severity, patient resources, and physicians' professional interests [13].

To attempt to explain the differences in the level of SMS, we investigated the social context of KP and the DHS to learn how healthcare professionals (HCPs) perceived and interpreted various elements of SMS.

Material and methods

Using a semi-structured interview guide 17 KP Northern California managers and healthcare professionals and DHS 19 managers and healthcare professionals were interviewed by one of the Danish researcher (MS) (see Table I). The interview guide was developed based on the study by Michie et al. focusing on the usefulness of psychological theory for implementing evidence-based practice [14]. Relevant

themes identified in the literature were added. Most of the interviewed persons (hereafter called informants) had worked with chronic care management for several years. The interviews were taped and transcribed by the researcher conducting the interviews.

As an analytical framework, we used a situational analysis approach [15]. This allowed us to look more deeply into the meaning and interactions of actors and elements involved in providing SMS instead of looking only at individual actors and elements involved in the care.

To gain maximum information, managers and scientists working with diabetes care management identified potential informants with a special interest in diabetes care. The snowball approach was used to recruit informants; they were included if they were recommended by other informants and considered relevant for the study theme. We continued to include new informants until no new relevant information was obtained. The interviews were conducted in KPNC in the end of 2007 and in the DHS in the beginning of 2009.

We coded interviews using predefined categories based on the interview guide and the analytical framework, as well as categories that emerged from the interview data.

Second, to deepen our understanding of the context in which SMS occurs, the most important elements in each system were identified, along with pertinent analytical material and relevant symbolic/discursive themes. These were used to generate a situational map.

Results

Perception of self-management and self-management support

Informants perceived SM as including activities that people undertake for themselves to stay healthy and keep their chronic condition under control and to use the healthcare system appropriately. However, the view of providing SMS differed between the systems. In KP, providing SMS was typically viewed as an investment that made the physician's life easier if patients were responsible, in large part, for their care. In the DHS, providing SMS was typically viewed as demanding time and resources.

Human actors involved in the provision of diabetes care

In the DHS, human actors involved in providing diabetes care and SMS included general practitioners and nurses specialized in diabetes care. In KP, in addition to primary care physicians, healthcare

professionals involved in SMS included nurses typically certified as diabetes educators, dietitians, pharmacists, psychologists, health educators, and managers. In KP managers in diabetes care are positioned at the regional levels and in the medical centers (managing physicians). In the DHS, diabetes managers are positioned in the clinical departments and outpatient clinics. Some GPs and some municipalities have diabetes managers as well. Their role is to coordinate the care and to ensure that patients receive care as described in the guidelines. KP healthcare professionals referred to managers as supportive of providing SMS. DHS informants referred to their managers to only a limited extent.

Non-human actors involved in the provision of diabetes care

KP informants mentioned the integrated health information technology (HIT) system as an important element for the provision of care. The HIT system in KP includes an electronic health record including point-of-care decision supports that can be accessed by all providers in the system. Informants also described using HIT for ongoing monitoring of quality of care. For example, physicians look monthly at how their patients with diabetes are doing with respect to clinical indicators, medication, and check-ups; medical assistants or nurses contact patients with abnormal clinical indicators or those who are due for routine examinations. The data are also used to compare performance across medical centers and healthcare teams in relation to evidence-based, predefined quality goals, which are linked to financial incentives. Several KP healthcare professionals mentioned predefined quality goals as active guides to their daily practice. Furthermore, the overall compensation strategy for primary care physicians working in the medical centers created incentives to keep patients healthy and out of hospital.

The DHS payment structure was intended to provide incentives for the municipalities to prevent disease exacerbation; however, municipality managers reported that it did not work well. Some diabetes ambulatory chief physicians described the payment structure as providing incentives to make several appointments with patients instead of just one. However, most healthcare professionals did not report that financial incentives influenced their care.

Another element that influenced the way diabetes care was provided in KP was the use of the newest evidence on this area. The KP Care Management Institute (KPCMI) keeps the organization updated on the newest evidence and develops tools to support healthcare professionals in providing evidence-based care.

Organization of healthcare systems

KP informants considered themselves part of a large organization in which they share the responsibility for the delivery of care with many others. When KP healthcare professionals spoke about delivering care, they frequently referred to colleagues and managers in positive terms. They described the HIT system as supporting collaboration: information was easily shared between providers, and they could book appointments in each other's schedules. In contrast, communication between DHS general practitioners and specialists was limited, and some GPs and hospital specialists expressed distrust of the care provided by other providers.

The organization of GPs in private practices in the DHS seemed to influence the provision of care. For example, DHS GPs received limited SMS support tools, such as IT systems, reminders, and checklists. There was no formal requirement for competence development. In contrast, KPCMI provided tools supporting evidence-based care management and regular in-service training for all HCPs.

Responsibility for disease and capability of the healthcare system

In both systems, HCPs indicated that they perceived the responsibility for disease management as belonging to patients. However, their perceptions of what the healthcare system could do to support patients differed between the systems.

KP informants expressed that they "did everything they could" to support self-management. For instance, patients with depression and/or psychosocial challenges were often offered more intensive support, as were those with comorbidities and complications.

DHS physicians and nurses typically supported self-management during consultations using a traditional, experience-based approach. Patients who did not benefit from it were typically not offered additional support. Only a few DHS HCPs reported using evidence-based approaches, such as motivational counseling, to support self-management.

Perceptions of the boundaries between clinic and patients' homes varied. KP informants reported that self-management involved outreach (calling patients at home), and the HIT system allowed patients to check laboratory test results from home. DHS HCPs reported that they did not typically contact patients at home, viewing it as the responsibility of patients to contact providers for needed care or support.

Discussion

We found several important differences between the two healthcare systems that appear to influence the

provision of SMS. In KP, responsibility for patient care was shared among several providers overseeing populations of patients. In contrast, DHS HCPs working in general practice viewed themselves as individual practitioners bearing sole responsibility for the care of individual patients and with limited resources to provide SMS. Furthermore, differing perceptions of boundaries between clinics and patients' homes seemed to influence SMS. DHS HCPs typically did not contact patients at home. The contractual agreement between the GPs and the Health Insurance Fund has traditionally not reimbursed DHS GPs for initiating contacts with patients. Even though they currently receive payment for contacting patients for preventive reasons, we believe this historical narrative limits the ability of clinics to provide SMS outreach.

Additionally, an evidence-based approach at KP (e.g. motivational counseling and ongoing follow up) enhanced provider satisfaction with and belief in the value of providing SMS. Other elements influencing SMS provision at KP included: (1) HCPs specially trained to educate and support patients' self-management and ongoing competence development; (2): strong leadership supporting the HCPs in providing SMS; (3) quality goals and aligned financial incentives; and (4) an integrated organization. In contrast, the fragmented organization of the DHS, with incompatible financial incentives, many stakeholders, and weak leadership, seemed to present a challenge to evidence-based chronic care management and SMS provision. In line with this, a study focusing on the use of lipid-lowering drugs as primary prevention in the DHS concluded that there is room for improvement for treatment guidelines to be met [16].

In both systems, HIT played an important role in supporting HCPs in providing SMS. However, the HIT system is fully implemented throughout KP, whereas only a few providers in the DHS had implemented similar systems.

Distrust between providers may have limited the level of SMS provided in the DHS. The KP organizational structure and HIT system appeared to strengthen provider collaboration and, ultimately, SMS. Additionally, our results suggest that the typical DHS view of SMS as a burden – versus the KP investment view – was a barrier to implementation. This is consistent with prior studies in the DHS demonstrating that SMS is often viewed as an add-on at the end of visits and rarely integrated into the medical care provided to the patients [17,18]. As an approach to chronic conditions management, SMS has existed for many years in KP, whereas the approach is rather new in the DHS. The understanding of SMS and approach to providing it was much more institutionalized in KP than was the case in the DHS, which is reflected in our results.

Our results are consistent with change management theories focusing on essential steps for a successful implementation process [19–21]. These theories emphasize the importance of strong and engaged leadership; aligned goals/visions; support for the desired change, including changing other structures, procedures, and policies in order to remove barriers; belief in having the ability to change (self-efficacy); and symbolic activities.

Study strengths include the comparative approach that made it possible to study differences between systems and to identify elements that might have remained obscure if we had studied only one system. We focused on the macro- and meso-levels of the organizations, as the micro-level has been studied elsewhere [22–24].

Limitations include the fact that HCPs with a special engagement and/or interest in providing diabetes care were selected for interviews. As a consequence, we described the social organization of SMS in settings where there was high interest in its provision. There may be elements in play in other settings that we have not identified. Interviewing patients in the two systems could also have illuminated other elements of importance for the provision of SMS.

The researcher conducting the interviews was also involved in a larger research project comparing KP and the DHS that included collecting quantitative data. The quantitative data were analyzed before the qualitative data. Thus, the analysis reported here was conducted with the awareness that the results from the quantitative data suggested that KP provides self-management to a greater extent than the DHS. However, as the aim of the study was to investigate elements important to the implementation of SMS – and not just whether SMS was provided or not – we do not believe this knowledge significantly influenced our interpretation of the empirical material.

The interview guide was based on an English-language interview guide and then translated to Danish and adopted to the Danish context. Thus, some of the questions may have been more appropriate for the American informants. On the other hand, some questions may have been formulated more clearly in the Danish setting as the interviewer is Danish. In both systems, informants were encouraged to ask for clarification if they did not understand the questions.

Our data included only qualitative interviews. Including participant observation methods of the consultations would have allowed us to identify important elements in the interactions between healthcare provider and patients.

As our results were consistent with findings from other studies conducted in Australia and in other healthcare settings in the US [25–27], we believe that the elements identified as being essential

for the provision of SMS can be applied to other Western healthcare systems.

Our study emphasizes the importance of understanding how elements in the social context of care provision are perceived when implementing SMS. Different provider perceptions of SMS, the capability and responsibility of healthcare systems, and themselves and their roles in the entire healthcare organization influenced the provision of SMS.

SMS represents an important but under-supported area of care for persons with diabetes. Disease management programs are currently being implemented in the DHS. However, a number of initiatives should be undertaken to strengthen the provision of SMS. These include supporting collaboration and integration between providers, ongoing training of HCPs, and improved infrastructures for GPs. Specific examples include implementation of an integrated HIT system, aligned financial incentives, and a national education program for nurses working in general practice. Additional research is needed to assess effective approaches for delivering SMS and the link between SMS and health outcomes.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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References

[1] Corser W, Xu Y. Facilitating patients' diabetes self-management: A primary care intervention framework. *J Nurs Care Qual* 2009;24:172-8.
 [2] Fenton JJ, Von KM, Lin EH, Ciechanowski P, Young BA. Quality of preventive care for diabetes: Effects of visit frequency and competing demands. *Ann Fam Med* 2006;4:32-9.
 [3] Phillips LS, Ziemer DC, Doyle JP, Barnes CS, Kolm P, Branch WT, et al. An endocrinologist-supported intervention aimed at providers improves diabetes management in a primary care site: Improving primary care of African Americans with diabetes (IPCAAD) 7. *Diabetes Care* 2005;28:2352-60.

[4] Rogers A, Kennedy A, Nelson E, Robinson A. Uncovering the limits of patient-centeredness: Implementing a self-management trial for chronic illness. *Qual Health Research* 2005;15:224-39.
 [5] Sobel D, Lorig K, Hobbs M. Chronic Disease self-management program: From development to dissemination. *Permanente Journal* 2002;6:15-22.
 [6] McDiarmid T, Chambliss ML, Koval PB, Houck S. Improving office-based preventive care for diabetes: The beneficial results of a patient questionnaire and a flow chart. *N C Med J* 2001;62:8-13.
 [7] Piette JD. Enhancing support via interactive technologies. *Curr Diab Rep* 2002;2:160-5.
 [8] Wagner EH, Glasgow RE, Davis C, Bonomi AE, Provost L, McCulloch D, et al. Quality improvement in chronic illness care: A collaborative approach. *Jt Comm J Qual Improv* 2001;27:63-80.
 [9] Feachem RG, Sekhri NK, White KL. Getting more for their dollar: A comparison of the NHS with California's Kaiser Permanente. *BMJ* 2002;324:135-41.
 [10] Ham C, York N, Sutch S, Shaw R. Hospital bed utilization in the NHS, Kaiser Permanente and the US Medicare programme: Analysis of routine data. *BMJ* 2003;327:1257.
 [11] Frølich A, Schiøtz ML, Strandberg-Larsen M, Hsu J, Krasnik A, Diderichsen F, et al. A retrospective analysis of health systems in Denmark and Kaiser Permanente. *BMC Health Services Research* 2008;8:252.
 [12] Strandberg-Larsen M, Bernt NM, Krasnik A. Are joint health plans effective for coordination of health services? An analysis based on theory and Danish pre-reform results. *Int J Integrated Care* 2007;7:e35.
 [13] Schiøtz M, Frølich A, Krasnik A. Denmark. In: Nolte E, Knai C, McKee M, editors. *Managing chronic conditions: Experience in eight countries*. Copenhagen: European Observatory on Health Systems and Policies; 2008. p 15-28.
 [14] Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A. Making psychological theory useful for implementing evidence based practice: A consensus approach. *Qual Saf Health Care* 2005;14:26-33.
 [15] Clarke A. *Situational analysis: Grounded theory after the postmodern turn*. Thousand Oaks, CA: Sage; 2005.
 [16] Graversen L, Christensen B, Borch-Johnsen K, Lauritzen T, Sandbaek A. Lipid-lowering drugs as primary prevention in general practice: Do patients reach guideline goals and continue treatment? ADDITION Denmark. *Scand J Prim Health Care* 2011;29:216-21.
 [17] Glasgow RE, Eakin EG. Medical office-based interventions. In: Snoek FJ, Skinner CS, editors. *Psychological aspects of diabetes care*. London: Wiley; 2000, p 142-68.
 [18] Wagner EH, Glasgow RE, Davis C, Bonomi AE, Provost L, McCulloch D, et al. Quality improvement in chronic illness care: A collaborative approach. *Jt Comm J Qual Improv* 2001;27:63-80.
 [19] Armenakis AA, Bedeian AG. Organizational change: A review of theory and research in the 1990s. *J Management* 1999;25:293-315.
 [20] Galpin T. *The human side of change: A practical guide to organization redesign*. San Francisco: Jossey-Bass; 1996.
 [21] Kotter J. *Leading change: Why transformation efforts fail*. Harvard Business Review 1995;March-April.
 [22] Clark NM, Gong M, Schork MA, Evans D, Roloff D, Hurwitz M, et al. Impact of education for physicians on patient outcomes. *Pediatrics* 1998;101:831-6.
 [23] Corbin J, Strauss A. *Unending work and care: Managing chronic illness at home*. Jossey-Bass; 1988.
 [24] Masley S, Sokoloff J, Hawes C. Planning group visits for high-risk patients. *Fam Pract Manag* 2000;7:33-7.

- [25] Glasgow RE, Davis CL, Funnell MM, Beck A. Implementing practical interventions to support chronic illness self-management. *Jt Comm J Qual Saf* 2003;29: 563–74.
- [26] Harris MF, Williams AM, Dennis SM, Zwar NA, Powell DG. Chronic disease self-management: Implementation with and within Australian general practice. *Med J Aust* 2008;189(10 Suppl):S17–S20.
- [27] Perrin KM, Burke SG, O'Connor D, Walby G, Shippey C, Pitt S, et al. Factors contributing to intervention fidelity in a multi-site chronic disease self-management program. *Implement Sci* 2006;1:26.