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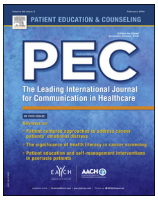

Social support

Social support and self-management capabilities in diabetes patients: An international observational study

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ABSTRACT

Objective: The objective of this study was to explore which aspects of social networks are related to self-management capabilities and if these networks have the potential to reduce the adverse health effects of deprivation.
Methods: In a cross-sectional study we recruited type 2 diabetes patients in six European countries. Data on self-management capabilities was gathered through written questionnaires and data on social networks characteristics and social support through subsequent personal/telephone interviews. We used regression modelling to assess the effect of social support and education on self-management capabilities.
Results: In total 1692 respondents completed the questionnaire and the interview. Extensive informational networks, emotional networks, and attendance of community organisations were linked to better self-management capabilities. The association of self-management capabilities with informational support was especially strong in the low education group, whereas the association with emotional support was stronger in the high education group.
Conclusion: Some of the social network characteristics showed a positive relation to self-management capabilities. The effect of informational support was strongest in low education populations and may therefore provide a possibility to reduce the adverse impact of low education on self-management capabilities.
Practice implications: Self-management support interventions that take informational support in patients' networks into account may be most effective, especially in deprived populations.

1. Introduction

Ageing populations and lifestyle related factors are amongst the factors contributing to an increasing prevalence of many long-term conditions, including type 2 diabetes [1,2]. This increase is likely to be higher in groups with a low income and education because they have an increased risk of developing diabetes, as well as of presenting a poorer control of their condition [3]. Effective self-management, as part of the chronic care model, can help to improve health outcomes and reduce costs [4]. Many educational and counselling interventions have been developed to support behaviour change and to improve self-management of people with long-term conditions. Research on educational and behaviour change programmes for chronic conditions has found varying degrees of success [5]. Not only does the effect of these interventions vary, they also have less impact amongst groups with low income and education [6]. Many of the available

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educational and counselling interventions are expected to increase self-management capabilities, such as insight in disease mechanisms, self-monitoring, knowledge, and skills, making use of behaviour change techniques (such as goal setting). This is illustrated by a review that produced an overview of 112 theoretical constructs in behaviour change, resulting in 14 domains of which 12 domains were related to individual traits [7]. However, the focus on these individual capabilities may have narrowed the view on what influences self-management and may have missed contextual influences.

When broadening the view to patients' context, a complementary strategy to contribute to individual self-management capabilities and behaviours is to enhance social support from personal networks and community organisations. Social support is defined as help provided by family, friends, neighbours, or others and includes different domains, such as information, emotional comfort, and practical help [8]. Previous studies have shown that social support and social networks influence health behaviours and health outcomes [9–13]. This social context may be particularly relevant for people experiencing economic and social deprivation or social isolation, since they have a higher risk of developing diabetes [3]. Moreover, self-management interventions maybe less effective for these populations than for those who are more advantaged [6]. Support from social networks might provide an opportunity to compensate to an extent for these inequalities in health.

To explain how social networks can impact on health, several mechanisms have been proposed. Network members can provide informational, practical or emotional support. Another mechanism concerns the role of social networks in patients' navigation to resources (individuals, groups, organisations, and online resources) [14,15]. Navigation refers to identifying and connecting with relevant existing resources that are available in a network, such as information and support [15]. From the perspective of the individual, access to social support can be characterized as social capital. This social capital can be accessed through weak ties, for example through community organisation or relevant professionals in someone's wider network. Another mechanism is contagion: the spread of behaviour, knowledge, and attitudes in populations which is influenced by social networks. This has been suggested to explain the impact of being embedded in a group or population, such as a family, community organisation, or a neighbourhood [16]. Psychological mechanisms such as imitation of successful behaviours, role modelling, social comparison and exchange of resources may explain the effect of contagion. In addition to social influence from network members, there is also a selection mechanism: networks members are selected on the basis of similarity between a person and potential network members. Both mechanisms (contagion and selection) result in higher homogeneity in networks and create an interaction between composition and content of the network [17]. In other words, social support networks may influence the content and strength of self-management capabilities, while these capabilities may also influence the support network.

However, insight into the linkages between individual self-management capabilities and support networks in real patient populations is limited. Most previous studies focused on single factors, such as group-based self-management support interventions or self-management interventions with partner involvement [18,19]. Studies on the simultaneous influence of personal, community organisations and neighbourhood networks seem to be lacking. Therefore, the relative impact of different network characteristics remains unclear. Also, it is unclear whether support networks in deprived patient populations could reduce the adverse effects of a low education.

In this study, we described the personal networks of type 2 diabetes patients and explored which aspects of these networks relate to self-management capabilities, using data from a study in six European countries. Moreover, we explored whether social context factors such as personal networks, community organisations and neighbourhoods can compensate the adverse health effects of a low education by assessing the relationships between self-management capabilities and personal network aspects in high and low education groups.

2. Methods

2.1. Study design, setting and participants

An international cross-sectional study in patients with type 2 diabetes was conducted. Data were collected as part of the EU-WISE project [20]. The study was conducted in 18 purposefully chosen geographical areas in six countries, reflecting a variety of health and welfare systems: Bulgaria, Greece, the Netherlands, Norway, Spain, and the United Kingdom. Within each participating country, one deprived urban area; one relatively affluent urban area; and one deprived rural area (relative to country) was selected. Urban was defined as located in a city with more than 100,000 inhabitants, whereas rural was defined as located in towns or villages with fewer than 30,000 inhabitants. This stratified sampling of areas (rather than a completely random sample in each country) allowed us to study both individual and area characteristics. Because the areas were chosen purposefully, these are not necessarily representative for the countries involved. In each area, 100 patients with a diagnosis of type 2 diabetes were recruited, resulting in about 300 patients in each country. This number allowed us to detect a medium effect size ($f^2 = 0.15$) based on $\alpha = 0.05$, intraclass correlation coefficient (ICC) = 0.03, power = 0.80 and the inclusion of eight independent variables in the analysis [20,21]. Patients attending primary or ambulatory healthcare practices in the defined geographic areas were recruited. This method of recruiting has the advantage of a confirmed diagnosis of diabetes by a physician and provides the possibility of a face-to-face contact with the patient. This personal contact can enhance participation, but inhibited the calculation of a meaningful response rate. Inclusion criteria were: medical diagnosis of type 2 diabetes and aged 18 years or over. Exclusion criteria were: pregnancy; pregnancy-related diabetes; recent/current major surgery or medical procedures; severe cognitive or psychiatric handicap; terminal illness/receiving palliative care; absence of translators (e.g. family members) for patients with insufficient language skills. Eligible patients were given an invitation letter with information, a consent form, and a written questionnaire via their healthcare practice. Participating patients were invited to take part in an interview as well. Ethical committees in the participating countries provided approval for the study.

2.2. Measures

Data collection consisted of two parts: the first part was a written questionnaire with validated measures recording demographic variables, co morbidities (high blood pressure, high cholesterol, angina pectoris, heart attack, coronary surgery, heart failure, transient ischaemic attack, stroke, peripheral arterial disease), participation in local organisations and self-management capabilities; the second part was a pre-structured face-to-face or telephone interview, focussing on social networks and social support. We chose for interviews for the social network questions, based on pilot testing in 25 diabetes patients, suggesting that

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