**DEVELOPMENT**

# How do patients with uncontrolled diabetes in the Brussels-Capital Region seek and use information sources for their diet?

**Sabrina Meyfroidt**[1], **Daan Aeyels**[2], **Chantal Van Audenhove**[3], **Caroline Verlinde**[2], **Jan Peers**[2,4], **Massimiliano Panella**[4,5,6] and **Kris Vanhaecht**[4,5,7]

[1]Department of Reproduction, Development and Regeneration, Catholic University Leuven, Leuven, Belgium
[2]Huis voor Gezondheid, Brussels, Belgium
[3]Centre for Care Research and Consultancy, Catholic University Leuven, Leuven, Belgium
[4]Centre for Health Services and Nursing Research, School of Public Health, Catholic University Leuven, Leuven, Belgium
[5]European Pathway Association, Leuven, Belgium
[6]Department of Clinical and Experimental Medicine, University of Eastern Piedmont ''A. Avogadro'', Novara, Italy
[7]Western Norway Research Group on Integrated Care, Helse Fonna, Haugesund, Norway

**Objective:** The aim of this study was to obtain qualitative data to understand how type 2 diabetic patients with unregulated blood glucose levels (HbA1c >140 mg/dL) seek and use information sources for their diet. **Methods:** A descriptive, explorative study design was used with focus group interviews in the Brussels-Capital Region. Each interview was recorded, transcribed literally, and analysed thematically using a grounded theory approach. **Results:** GPs were the most important information source in this study. GPs and other professionals were considered to be reliable sources of information by the patients. All patients received information passively at diagnosis. Patients that actively sought information differed in their search behaviour and reported they were not sufficiently informed. Some information sources remained unknown to the diabetic patients in this study. **Conclusion:** Diabetic patients of the Brussels-Capital Region are not well informed about their diet. The main problem is how patients perceived the accessibility of information. **Practice implications:** Public health strategies are required to promote well-informed, proactive patients supported by healthcare teams.

**Key words:** Brussels-Capital Region; diet; focus groups; information sources; type 2 diabetes

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## Introduction

Type 2 diabetes mellitus (T2DM) is a chronic metabolic disease that is increasing worldwide (Knowler *et al.*, 2002; Zimmet, 2003; Hossain *et al.*, 2007; Shaw *et al.*, 2009). Epidemiological data show that this is even more so in disadvantaged communities that are composed of diverse socio-economic populations (Riste *et al.*, 2001; Hossain *et al.*, 2007; Agardh *et al.*, 2011). Brussels, the capital of Belgium and the headquarters of the European Union (EU) and North Atlantic Treaty Organization (NATO), has a large socio-economic diversity. In 2008, 28.1% of the population of the Brussels-Capital Region (BCR) had a foreign origin, originating from 45 different nationalities. The economy of the BCR is marked by very high levels of wealth creation, although more than one in four inhabitants has to manage with an income

Correspondence to: Sabrina Meyfroidt, MSc, Department of Reproduction, Development and Regeneration, Catholic University Leuven, Herestraat 49 – Box 7003, B-3000 Leuven, Belgium. Email: sabrina.meyfroidt@med.kuleuven.be

below the at-risk-of-poverty threshold. The region is characterised by a clear spatial differentiation between the poorer districts, mixed neighbourhoods, and the wealthy areas of the city. The prevalence of diabetes in the BCR was 3.0% for men and 4.2% for women in 2004. (Observatorium voor gezondheid en welzijn van Brussel-Hoofdstad, 2010; Belgian National Institute for Statistics, 2011). Management of T2DM focuses on lifestyle interventions, comprising diet, physical activity, and behavioural therapy. As weight loss is an integral component of the chronic management of type 2 diabetes, a healthy, balanced diet, which includes healthy fats and carbohydrates, is recommended (Norris et al., 2001; Zimmet, 2003; Hossain et al., 2007, Marion and Sheri Volger, 2010).

The Chronic Care Model (CCM) promotes high-quality health care for people living with chronic illnesses. This model emphasises the importance of a patient's proactive role in his or her care. CCM represents a major shift from a reactive, acute-illness approach to a system in which informed, proactive patients interact with healthcare teams (Bodenheimer et al., 2002; Epping-Jordan et al., 2004). Even though its importance has been demonstrated, patient education or self-management promotion is present in only 60% of diabetes care programmes (Borgermans et al., 2008). In order to actively participate in his or her care, a patient should be well informed and should know which information sources are available (Bodenheimer et al., 2002; Epping-Jordan et al., 2004; Borgermans et al., 2008).

Recently, Belgium introduced different initiatives to enhance patient participation and quality of care for chronic diseases. The model care pathway, the global medical record, and the diabetes passport are Belgian initiatives and counterparts of the CCM. The global medical record contains all medical information of a patient and is set up and maintained by the patient's general practitioner. The model care pathway and the diabetes passport are tools custom crafted for individual diabetic patients. The tools support the disease management of a patient in collaboration with the patient's healthcare team (Mathieu et al., 2006; Persell et al., 2011).

The current literature contains numerous studies that have examined the active search behaviour of patients as they seek information about their disease on the Internet (Leydon et al., 2000; Diaz

et al., 2002; Peterson et al., 2003; Gray et al., 2005; Longo et al., 2010). Only one study, however, has identified how individuals with T2DM seek and use healthcare information from all possible sources (Longo et al., 2010). Therefore, the aim of the present study was to obtain qualitative data on how patients with uncontrolled T2DM within the BCR seek and use information sources about the diabetic diet. Our study focused on how patients use information sources, how they actively seek information and passively receive information, and what problems they encounter as they search for information on the diabetic diet.

## Methods

### Design

To address the aims of the study, an exploratory, descriptive, qualitative design was undertaken, using focus group discussions. Focus group discussions elicit a multiplicity of views, which can result in more in-depth information via a dynamic interchange between group members. Although the primary aim of this study did not include theory development, a grounded theory approach was used to guide the data collection and analysis because it has the potential to develop and refine theoretically relevant concepts, leading to an in-depth exploration of the use and seeking of diet information in the care process surrounding T2DM (Kitzinger, 1995; Sim, 1998; Corbin and Strauss, 2008).

### Subjects and study process

Participants were recruited from different medical settings such as a community health centre, solo or group practices in the BCR. Patients were included if they met the following criteria: (1) had T2DM; (2) had an HbA1c of >140 mg/dL (6.5%; International Diabetes Federation, 2005); (3) lived in the BCR; (4) spoke Dutch, French, or English; and (5) were at least 18 years of age. Exclusion criteria were: (1) patients with an underlying disease interfering with the diet such as renal insufficiency, hypertension, heart disease, cognitive or psychiatric disorder and (2) patients with gestational diabetes, secondary diabetes, maturity-onset diabetes of the young, latent autoimmune diabetes in adults, or maternally inherited diabetes and deafness. Data collection was superseded by theoretical sampling based

on emerging findings as the study progressed, to achieve the broadest possible range of information. In order to minimise regional bias, physicians were selected from the different regions of the BCR according to the socio-economic diversity of those regions. The GPs received invitation letters to invite patients from their database who fulfilled the criteria for participation. From the 12 GP practices invited, four did not respond to the invitation. This reflects a 67% response rate. The non-response of the GP was mainly due to lack of time needed to include patients and to considerations regarding patients' privacy. GPs and the investigators invited these patients to participate in focus groups and informed them about the study. New focus groups were scheduled until a certain saturation level was reached.

## Data collection

Six focus groups were conducted in the BCR during April 2011. All focus groups were convened in an accessible and non-clinical environment. A simple questionnaire was handed out at the beginning of each session to obtain the sociodemographic characteristics of the patients and information about their treatment (Table 1 and Table 2). The interview was composed of open-ended questions that assessed the discussion of three areas: (1) use of information sources, (2) active information seeking and passive information receiving, and (3) problems encountered by the patients (see Appendix 1). One moderator (S.M.) and one observer (D.A.) were present at each focus group session. The researchers were multilingual (French, Dutch, and English), and thus no exclusion of native speakers had taken place. The interview took place in a language that everyone understood. Even when the language used was not the native language of a participant, no

**Table 1** Treatment information for focus group participants ($n = 21$)[a]

| | |
|---|---|
| Patients who indicated that they had diabetes (*n*, %) | 20 (95) |
| Patients who followed a diet (*n*, %) | 12 (57) |
| Patients in possession of (*n*, %) | |
|   Diabetes passport | 10 (48) |
|   Model care pathway | 4 (19) |
|   GMR | 13 (62) |
| GP setting (*n*, %) | |
|   Solo practice | 5 (24) |
|   Group practice | 7 (33) |
|   Community health centre | 9 (43) |

GMR = global medical record; GP = general practitioner.
[a] Values represent the absolute number of patients.

**Table 2** Sociodemographic characteristics of focus group participants ($n = 21$)

| Characteristics | Study population[a] | Brussels population[b] |
|---|---|---|
| Mean age in years (range) | 60 (41–85) | 38 (–) |
| Gender (*n*, %) | | |
|   Male | 14 (67) | – (48) |
|   Female | 7 (33) | – (52) |
| Marital status (*n*, %) | | |
|   Married | 13 (62) | – (35) |
|   Divorced | 3 (14) | – (9) |
|   Single | 4 (19) | – (51) |
|   Widowed | 1 (5) | – (5) |
| Education (*n*, %) | | |
|   Less than undergraduate degree | 13 (62) | – (66) |
|   Undergraduate degree or higher | 8 (38) | – (34) |
| Ethnicity (*n*, %) | | |
|   Caucasian | 15 (71) | – (72) |
|   Non-Caucasian | 6 (29) | – (28) |
|     African | 4 (19) | |
|     Asian | 2 (10) | |

[a] For the sample population, values represent the absolute number of patients, except for the mean age.
[b] For Brussels population, values were obtained from the literature (Observatorium voor gezondheid en welzijn van Brussel-Hoofdstad, 2010; Belgian National Institute for Statistics, 2011).

specific communication problem existed. Interaction between participants was encouraged by asking everyone's opinion. The researchers approached participants with an open and unbiased attitude by active listening and by responding sympathetically with careful consideration not to lapse into a therapeutic relationship. The anonymity of the participants and the confidentiality of the data collected were assured. The interviews were tape-recorded and field notes were taken. The focus group sessions lasted between 90 and 120 min.

### Data analysis

Data collection and analyses were cumulative iterative, with each focus group building on the discussion of the proceeding group. Between each focus group session, we performed a preliminary analysis of the field notes and completed questionnaires. Subsequently, all tapes were transcribed verbatim in the native language. In accordance with a Grounded Theory approach, the interview transcripts were examined to identify concepts, which were then refined in terms of their properties and dimensions. The coding process was supported by the software program NVivo9 (QSR International Ltd). This program enabled us to easily assemble the information and to isolate important items per theme. In this way, we could more easily identify the participants' use of information sources, their active information seeking and passive information receiving behaviour, and the problems they experienced. A collaborative process between investigators was used to work with the data and discuss the findings. Other measures used to ensure trustworthiness of the data were maintaining meticulous records of the interviews and of the investigators' personal impressions, in-depth methodological description, thick description, and debriefing sessions with the research supervisors. Saturation was obtained after six focus groups.

### Results

#### Types of information sources

As shown in Table 3, great variation existed between patients in the use of information sources about diet. Ninety percent of the patients listed the GP (either working in a group practice, a solo practice, or a community health centre) as the

**Table 3** Use and knowledge of information sources (*n, %*)

| Information source | Number of patients that used the information source (%) | Number of patients familiar with the information source (%) |
|---|---|---|
| General practitioner | 19 (90) | 21 (100) |
| Family | 10 (48) | 11 (52) |
| Television | 8 (38) | 11 (52) |
| Internet | 6 (29) | 7 (33) |
| Dietician | 6 (29) | 7 (33) |
| Books and magazines | 6 (29) | 12 (57) |
| Hospital | 5 (24) | 8 (38) |
| Friends | 5 (24) | 5 (24) |
| Advertising | 3 (14) | 3 (14) |
| Diabetes educator | 3 (14) | 3 (14) |
| Specialist | 3 (14) | 3 (14) |
| Health insurance | 3 (14) | 9 (43) |
| Pharmacist | 2 (10) | 7 (33) |
| Diabetes association | 1 (5) | 2 (10) |

most important information source. Besides the GP, nearly half of the patients also turned to their family for insight into their diet. The third most used source of information was the television. Healthcare professionals, family and friends, television, the Internet, and other information sources are discussed further below. Quotes from the six focus groups (FG 1 to FG 6) are also presented.

#### *Healthcare professionals as the principal information source*

Healthcare professionals, primarily GPs, were among the most frequently mentioned sources of information (see Table 3). Patients not only consulted them immediately after their diagnosis, but also throughout their treatment.

> *For me, following the doctor's advice is vital. And that's it.*
>
> (FG 5)

Patients received oral or written advice from their GP. A GP was the first person that a patient sought out when he/she had questions. Some patients with questions tended to be apprehensive about asking them.

*The first thing I would do is ask the doctor questions, and then he refers me based on what is necessary.*

(FG 5)

*If I have questions, I do not immediately go to the doctor. I have a checkup every three months. So I wait until the next appointment.*

(FG 1)

Although the patients believed that the information they received from their doctor is essential, they also believed that the information does not sufficiently help them with their diet. To gain more information, patients also consulted other healthcare professionals: dieticians, diabetes educators, specialists, and pharmacists. Dieticians were consulted after referral or at the hospital. Pharmacists were used as information source because they were readily available.

*In a first time it was the doctor who told me what I should eat and what not. Then he sent me to a dietician for more dietary advice.*

(FG 2)

*In addition, we have a good pharmacy. We can ask him anything. I ask him for example by what I can replace sugary food.*

(FG 3)

*Family and friends as support*

Forty-eight percent of the patients listed 'family' as a source of information (Table 3). This was especially the case in patients with a family history of diabetes. In addition, 24% of the patients used friends as a source of information (Table 3). Usually, these friends also had a history of diabetes. Relatives and friends were used as sounding boards for discussing diet and conflicting information.

*There are my friends who also have diabetes type 2. We talk about foods and ready-made products in stores that always contain sugar, and then we also talk about aspartame. We exchange information that we receive.*

(FG 3)

*Television and the Internet*

Eight patients viewed at least once a television programme on diabetic diet (see Table 3). For these patients, the information they received from television was a good addition to the information

they had received from healthcare professionals. Television was mainly used as a source of information by non-Caucasians.

*Two to three times a week there is a show on TV. I listen to what they say about what is good or bad to eat. On the show, specialists speak in my native language. When I am at home, I listen and then I apply it. And that helps.*

(FG 2)

Six of seven patients who acknowledged the Internet as an information source actually used it (see Table 3). Of these six patients, five had a higher education. The Internet was mainly used to obtain an answer to a specific question.

*I use the Internet for information when I have a specific question. For example, this week I used the Internet to find out if bananas are good for diabetes.*

(FG 6)

*Other information sources*

The patients also used information from other sources such as books, magazines, advertising, food labels, a diabetes association or the health insurance. These sources are less mentioned because patients are not always satisfied with the usefulness of the information.

*I was a member of the diabetes association. I found it quite expensive to get a paper 4 times a year. I have canceled the membership, and from then I had no more information.*

(FG 6)

*I need a long time to read what is on the food label and I do not read much valuable information. For example, jam is 'sweetened with fruit sugar'. But what is fruit sugar?*

(FG 6)

**Patients' perceptions of the reliability of information sources**

The participants judged healthcare professionals as a reliable source of information because of the professional education they received. Not only information from GPs was judged as reliable, but information from other healthcare professionals such as dieticians and medical specialists were also viewed as reliable. Besides healthcare professionals, other diabetic patients were considered as reliable

sources of information because of their experience. However, the participants believed that information from magazines, the Internet, and television is not reliable when it is associated with advertisements. They felt that the information was provided only to promote products. Notably, none of the participants actively researched information about the authors of the written work they used for reference or researched how the information had been acquired. One patient indicated that he had no idea what constitutes a reliable source of information.

*I listen to the doctor. I don't believe what is said on television. It's only commercial.*
(FG 4)

*I trust the dietician because it's a dietician and because I'm being referred to her or him by the doctor.*
(FG 3)

*Anyone who is not diabetic cannot help me. So I will not listen to family and friends.*
(FG 5)

### Passive information receiving and active information seeking

Most patients passively received information about their diet at the time of diagnosis. Information was provided by the GP, the hospital, or after referral by a dietician. The need for information varied greatly between patients, as the information provided was crafted to the specific needs of individual patients. If two patients received the same information, that information might be sufficient for one but inadequate for the other. Some patients did not search for further information, even if they thought they were not sufficiently informed. Active information seeking behaviour depended on the individual. Furthermore, different focus groups exhibit different behaviour in seeking information. The seeking behaviour of patients remained the same over time. Even years after diagnosis, they generally continued to use the same information sources: television, the Internet, books and magazines, health insurance, food labels, and diabetes associations.

*I explained the information I received to my wife. She saw a program about diabetic diet on the television that was well explained, and she gave me more information about it.*
(FG 5)

*Right now the brochure from the doctor is sufficient. Besides a cookbook for diabetics which I bought, I have not looked for more information. Now it's up to me to lose weight.*
(FG 1)

### Problems and suggestions by the patients

*Problems*

The patients who indicated on the questionnaire 'not following a diet' stated during the focus group interview that they were paying attention to what they ate and were especially watchful of eating less sugar. The patients realised that they were insufficiently informed.

*I eat lots of fruit, but I'm not sure that I can eat all kinds of fruit. I might have other sources of information to manage my diabetes more effectively. But I don't know which doctor I should consult for this. That is something that they should communicate.*
(FG 6)

*I'm drinking this juice now. But I do not know if it is good or bad. Nobody has said anything about this to me. I should have asked for some water.*
(FG 1)

Although all the patients acknowledged GPs as an information source, they rarely acknowledged that other information sources were available (see Table 3).

*A dietician, is that not only for people who are obese? I do not know exactly how that works. Is that the recommended person?*
(FG 1)

*There are associations for cancer. So for diabetes, they also may exist or should exist. They would probably help me to adapt certain things for my diet.*
(FG 1)

Many patients said that they felt abandoned in terms of their diet:

*You can of course go on the Internet on your own, but compared to other diseases such as AIDS, information is more difficult to obtain.*
(FG 1)

Furthermore, some patients found that the information obtained was not sufficiently adapted to their lifestyle. This was not only the case with an African patient who followed a native African diet, but also with a Belgian man who did not ate poultry. The African man said:

*I have an enormous need for information. All information I receive I try to apply. But unfortunately, I came to Belgium with my eating habits from my motherland. Part of the food I use is not listed in the brochures I have received. So I ask myself the question: 'Can I eat this or not?'*

(FG 5)

*Suggestions*

All patients, including patients who believed they were adequately informed, desired to receive more information about their diet. Even years after their T2DM was diagnosed, the patients expressed the need for receiving periodic information. They favoured written rather than verbal information.

*With verbal information, the risk of forgetting certain things increases. So I prefer information on paper. And the easiest would be if the information is sent to my home.*

(FG 4)

The patients evaluated as most meaningful brochures and verbal information from their GP or from dieticians with experience in T2DM.

*When you have diabetes, you should automatically receive a membership in a diabetes association and you should receive regular information. If you get information at home you will read it. And this for example every 3 months with information that can help us without advertising. That would be great and it's the doctors who should be responsible for this.*

(FG 4)

*In Switzerland, there were free brochures for patients in hospitals or doctors' waiting rooms. And this was very well done. Here, these should also be made available. Brochures should be distributed systematically. Notice that the brochure I received was very useful for me.*

(FG 4)

The need for information varied between patients. Some patients wanted general information such as alternatives or recipes, whereas others wanted more specific information such as how nutrition can influence medication.

*You do not receive information about the influence of a diet on medication. I talked about it to the pharmacist but he did not know [about these influences].*

(FG 6)

Patients in this study were willing to participate in information sessions with other diabetic patients in order to exchange information. These sessions, however, must be moderated by a healthcare professional to guarantee that the information is reliable.

*Exchanging experiences would help me well. [Diabetes] Associations would have to arrange this, but with support from professionals who know their patients, for example, by a health centre.*

(FG 5)

In addition, information on food packaging in stores was seen as meaningful.

*In supermarkets, it would be easy if, for example, 'Reduces diabetes' was written on the food.*

(FG 1)

Telephone helplines that diabetic patients can call if they have a question about their diet were perceived as helpful by patients who did not use the Internet as an information source.

## Discussion, conclusion, and recommendations

### Discussion

To our knowledge, this study is the first attempt to fully understand the diet information needs of diabetic patients. Understanding the diet information needs could improve the possibility of self-management because of the great important of nutrition management in the diabetic treatment. There was a lack of data on this topic before our study was conducted. No differences with the literature are observed. The similarities between the results on the core themes (use of

information sources, active information seeking and passive information receiving, and problems encountered by patients) and those of other studies support the validity of the data. First, we discuss below similarities between our study and other studies. Second, we discuss the importance of our results for patient-centred care. Finally, we discuss the methodological limitations of this study.

Diet information sources used by diabetic patients in our study and the importance of each source were similar to those used by diabetics in general for their health (Longo *et al.*, 2010). GPs are the first persons patients consult for information, as they are considered to be the most reliable source. This finding is consistent with another study showing that patients still want physicians' help and guidance (Eysenbach, 2000). Our results and the results of Longo *et al.* (2010) show that patients rely further on family and friends. A possible explanation for the differences between the patients in active information seeking could be explained by the socio-economic and ethnic diversity of the study population. Longo *et al.* (2010) concurred on this point. The need for receiving periodic information was also observed by Longo *et al.* (2010). Patients adopted a non-participatory role in their care because of a lack of information. It should be noted, however, that we primarily interviewed older patients, who had a mean age of 60 years. As patients of this age cohort grew up in an era characterised by doctor-centred care, they may tend to view their role in their health care passively (Leydon *et al.*, 2000).

Patient-centred care in the setting of primary care is a core value of medicine for many GPs. The professionals need to understand and respond to the unique needs and preferences of patients, taking into account the socio-economic and ethnic diversity of the population. Diversity creates a gap between different population groups in the BCR. (Balik *et al.*, 2011). The results of this study may help to close this gap by promoting new tools aimed at patient-centred T2DM care.

In Leuven, Belgium, the Leuven Diabetes Project has demonstrated a need for improving primary diabetes care. Furthermore, the project has shown that the introduction of support measures for patients significantly improves the quality of care (Goderis and Mathieu, 2010). Model care pathways as support measures have been introduced in the past three decades (Vanhaecht *et al.*, 2011; Panella *et al.*, 2003; Goderis and Mathieu, 2010). Although

they represent complex interventions, they are not 'cookbook medicine'. Rather, their purpose is to decrease clinical variation, to increase follow-up by a multidisciplinary team, and to improve adherence to guidelines (Panella *et al.*, 2003; Deneckere *et al.*, 2011; Lodewijckx *et al.*, 2009; Vanhaecht *et al.*, 2011). Self-management support (a component of CCM) is central for improving care and outcomes, as it provides information and support that enables patients to take better care of their illness (Bodenheimer *et al.*, 2002; Epping-Jordan *et al.*, 2004).

To improve clinical effectiveness and efficiency, tools need to take into account the different needs and lifestyles of patients. According to Grol and Grimshaw (2003), education and information have only short-term effects, unless they are interactive and continuous. Even if worldwide initiatives were to be implemented to provide information on a wide range of health topics directly aimed at patients, our results indicate that in the BCR the biggest challenge is making information about the diabetic diet easily accessible. Both GPs and patients need to be aware of existing information sources and the variable quality of this information (Jones, 1999; Shepperd *et al.*, 1999; International Diabetes Federation, 2005).

This study had some methodological limitations. One patient was not aware that he suffered from T2DM. Nonetheless, we included him into our study because during the interview he said he had received nutrition advice. Although the educational level and ethnicity distribution of the sample were similar to the general population of Brussels (see Table 2), the results should still be interpreted cautiously. The proportion of men we interviewed (67%) was markedly higher than the proportion of male diabetic patients in Brussels (43%; Observatorium voor gezondheid en welzijn van Brussel-Hoofdstad, 2010). The present study focused specifically on patients from primary care practices, as did Longo *et al.* (2010) who recruited patients from clinics and found similar use of information sources. Another limitation is that only one patient showed up for one of the focus groups. Thus, instead of six focus groups, the study included the discussions of five focus groups plus one individual interview. It is relevant to note, however, that the small sample size generated data that achieved saturation. The saturation of data, the measures taken to ensure trustworthiness of the study, and

the similarities with the literature led us to conclude that the findings are generalisable to uncontrolled patients with T2DM in the BCR.

## Conclusion

This study shows that GPs are the most important information source. Other important information sources include healthcare professionals, family and friends, television, and the Internet. All patients received passive information about their diet at diagnosis. Patients who actively sought information used a variety of information sources and displayed the same search pattern over time. All patients desired to receive more information about their diet. They favoured written information and information that is readily available. The main problem was patients' perception of the accessibility of information and the passive, 'non-participatory' role patients displayed towards their care.

## Recommendations

In countries having broad ethnic and socio-economic diversity, new public health strategies should endeavour to educate patients about their disease and to show them how to approach its management and treatment proactively. One way this can be achieved is by providing regular and easily accessible written information. Local diabetes associations could play a major role in producing and distributing brochures, and hence improve patient-centred care. Because diabetic patients require frequent check-ups with their GP, GPs are equally appropriate for delivering written information. Brochures must contain general information about diet and information about referrals to specific nutrition information. Besides written information, patients should be referenced to group sessions, supervised by professionals. This should allow patients to discuss specific problems in the group, with the guarantee of qualitative information. To cover the total BCR population, the information needs to be available in different formats, such as braille, audiotape, and video, and in different languages. These information sources could be included in a database, providing the professional the opportunity to give written information in the patient's native language. In this way, all individuals with T2DM in the BCR could be well informed and better self-manage their diet.

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## Appendix 1: Focus Group Guide

### Introduction
- Thank the patients for participation
- Introduce the researchers
- Explanation of language progress
- Explanation of the aim focus group and research
- Discuss the rules of the interview
- Ensure anonymity
- Check understanding
- Participants introduce themselves by their first name and by how long they suffered from diabetes

### Diabetes and nutrition
- What means diabetes for you?
- What is for you a diabetes diet?

### Information sources
- What sources or types of sources have you personally used in the past to get nutritional

information? Why do you use that source of information?

- What sources are credible to you? What leads you to believe that a source of information about diabetes is credible?
- What do you think about the information you get? Are you satisfied with the information you have? What do you like or dislike?

## Passive information receiving and active information

- How do you seek information? What prompts you to seek out information about your diabetes diet? Who or what helps you to get information?
- How did your strategy to obtain information changed over time?

## Problems and suggestions

- Have you ever had problems arise where you felt that you could not obtain information that would help you make decisions about your diet? How did you ultimately handle the problem?
- What do you do if you have questions about the information you get?
- Do you have any suggestions to get more information?

## Explore data from previous focus groups

- What do you think about …?

## Closing interview

- This is the end of the interview. Does somebody want to add anything to the discussion?