

Do Medical Professionals Understand Barriers to and Motivations for Self-management of Diabetes by Working Patients?

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Abstract

In many countries there has been a shift toward a more patient-centered education in self-management of chronic diseases. To provide patient-centered education health professionals have to understand their patients. A qualitative study was conducted to examine whether medical professionals understand the experience of working adult patients self-managing diabetes. Twelve patients with Type II diabetes and paid jobs, and six medical professionals from a hospital in Wuhan, China were interviewed face-to-face in November 2015. Social pressure regarding drinking was a newly discovered work-related barrier to self-management. The results show that the medical professionals were able to identify some work related problems faced by patients. However, they failed to identify adverse physical responses, craving for certain food items, and social drinking as major barriers in patients' self-management practices. They also failed to identify family goals and family responsibilities as patients' motivations of self-management.

Key Words: diabetes self-management; diet control; health communication; perception gaps; China; qualitative method

Introduction

Diabetes is a major public health problem. Altogether 422 million adults globally were estimated to be living with diabetes in 2014 (World Health Organization, 2016). The rise of the diabetes epidemic in China has been faster than the global trend. The prevalence of diabetes in China increased from 3.2% in 1994 to 9.7% in 2008 (Yang et al., 2010). China accounted for about 25 percent of the cases of diabetes globally in 2013 (Chan, Zhang, & Ning, 2014), and has the largest diabetic population in the world (Shan, 2010).

Self-management, defined as the ability to manage the symptoms of a chronic condition through lifestyle changes, is a desirable way of living with diabetes (Shen, Edwards, Courtney, McDowell, & Wei, 2013). A good understanding of the factors influencing diabetes self-management will help medical professionals and health educators to design and implement effective educational and intervention programs for patients to manage their health issues.

There has been a shift in the US and other western countries toward a more patient-centered education of self-management of chronic diseases.

Health care professionals are educating patients to assume greater responsibility for their daily care. In other words, the patients are given more autonomy and involvement in setting the goals and making decisions in their daily lives (Funnell & Anderson, 2004).

Barriers in Self-management

Several qualitative studies were conducted among diabetes patients about their perceived barriers to practicing self-management programs. Most of the barriers were personal, including lack of financial resources, lack of will power, failure in trials, past experience of starving, mistrust of Western medicine, craving for specific foods, serious life events and lack of immediate rewards (Chen et al., 2012; Ebrahim, De Villiers, & Ahmed, 2014; Matthews, Peden, & Rowles, 2009; Shen et al., 2013). At the interpersonal level, perceived barriers included family role expectations, previous negative health care experiences, the need to prepare meals separately at home, eating at social events, experience of social stigma, and inefficient communication with health professionals (Ebrahim et al., 2014; Fort et al., 2013; Laranjo et al., 2015; Matthews et al., 2009; Shen et al., 2013; Wellard, Rennie, & King,

2008). Other perceived barriers identified were traditional cuisine culture, celebrations and religious practices, and lack of credible information sources (Ebrahim et al., 2014; Shen et al., 2013). A study among working young adults with Type I diabetes found that work-related time pressures and the non-routine nature of work and working environment were main reasons for neglect or delaying self-management (Balfe et al., 2014).

Perception Gaps between Health Care Professionals and Diabetes Patients

Do health care professionals see eye to eye with patients as to what is needed for self-management of diabetes? A study among 4,785 health professionals from 13 countries found that while many participants were still telling diabetes patients what to do, a shift toward patient-centered education was reported. Health care professionals began to listen more, and look for ways for diabetes patients to be self-motivated to follow their recommendations. Specifically, health care professionals made an effort to design individualized meal plans and exercise programs based on the patients' everyday life and preferences. They also adopted various motivational strategies such as providing emotional support for the patients (Stuckey et al., 2015).

A quantitative survey found that there were significant differences in perceptions of barriers to and strategies in self-management among patients and health professionals (Schultz, Sprague, Branen, & Lambeth, 2001).

A review of literature found perception gaps between health care professionals and diabetes patients in self-management. The major gap is that health professionals often do not fully understand patients' barriers to practicing self-management of diabetes (Schultz et al., 2001). Is this the case in China too? Are the perception gaps greater or smaller in China, or are they due to different things than those we found in the literature?

A review also found that these studies focus on adult patients in general and senior patients. There has been no study that focuses on working adults. Working people spend a significant part of their lives out of their homes interacting with colleagues, clients, and business partners. Does the working context introduce to them a different set of barriers? Is the perception gap between health professionals and patients even greater for working adults?

A collective cultural context

How people in different countries manage their health is affected by their cultural values. In fact, culture

is defined as "the collective programming of the mind distinguishing the members of one group or category of people from others" (Hofstede, 1991). One of the cultural dimensions proposed by Hofstede is individualism vs. collectivism. Individualism indicates a social framework in which individuals look after themselves and their immediate families only. Collectivism indicates a social framework in which individuals look after their relatives or members of a particular in-group that they belong to (Hofstede, 1991). For example, North America and Europe have individualistic cultures. Asia and Africa have collectivist cultures. China, besides being in Asia, has a long history. Chinese culture is highly collectivist. Chinese people have a strong concern about the ability to support their family financially, or taking care of parents, children, and grandchildren. The responsibility toward their children remained well after the children reached adulthood.

A major contribution of this study is an understanding of the experience of working adults with diabetes in a collective cultural context. To our knowledge, this is also the first study of this nature in mainland China.

Research Objectives

This study attempts to examine whether medical professionals are able to understand the barriers and motivations in practicing self-management among diabetes patients with employment.

Method

Design

A qualitative interview methodology was adopted. This method has the advantage of understanding how people construct meaning and interpret things happening to them and to others in natural settings (Wimmer & Dominick, 2011).

Participants

A convenience sampling was adopted. The sample comprised 18 participants (12 patients, three doctors, and three nurses) recruited from the in-patient ward and the out-patient clinic of a comprehensive hospital in Wuhan, China. Wuhan was selected to represent a city in inland China. All patients were in paid employment working at least 20 hours a week. The lengths of time that they had had Type II diabetes ranged from one month to 18 years. They were aged between 30 and 55 years, with average age of 42 years. The average age of the medical professionals was 30. Three of the patients and all of the medical professionals were female. All the medical professionals were involved with the management or delivery of diabetes treatment,

with practicing experience between three and 10 years.

Procedure

Ethical approval was obtained from the University where the first author works. An information sheet was provided to the participants. They were made aware that their participation was voluntary, and they could withdraw from the research at any point. They also gave consent to having the interviews audio-recorded and the use of the interviews in publications. The interviews were conducted by two researchers (the first author and a PhD student studying public health). A semi-structured questionnaire was produced based on literature and the research objectives (see the Appendix). Follow-up questions were used to encourage the interviewees to elaborate meanings or clarify details. The questionnaire for patients was pilot tested among two Type II diabetes patients for clarity and sensitivity.

Interviews were conducted in November 2015. The patients were first asked when and how they learned about their diagnosis to familiarize them with the topic before being asked the questions in the questionnaire. The interviews lasted between 17 and 35 minutes. The average duration of interviews was 26 minutes for the patients and 29 minutes for the medical professionals. The patients were offered RMB120 (equivalent to US 18 dollars) in cash as an incentive for participation. No financial incentives were offered to the medical professionals.

Data Analysis

Two researchers were involved in the data analysis, including the first author and a research associate employed for the project. Both researchers read the first four transcripts of patient interviews several times to familiarize with the data. The constant comparative method was adopted to generate meaningful categories in order to explore and investigate the data systematically (Strauss, 1987). The first researcher developed an initial set of codes based on the first four transcripts. Both researchers code the first four transcripts independently. They then discussed and reached consensus where there was disagreement (Charmaz, 2006). The codes were elaborated and refined based on the remaining transcripts for patients. One researcher continued to code the remaining eight transcripts of patient interviews. Another researcher read the coding for verification. The same set of codes was used to code the transcripts of interviews of the doctors and nurses. The excerpts for both the patients and the medical professionals were compared to search for relationships and themes. The identified themes were examined by another author to minimize subjectivity in the analysis (Weber, 2004). Representative quotes were

selected by the authors and translated into English. The software Dedoose (<http://www.dedoose.com/>) was employed throughout the process.

Results

The top four self-management methods reported by the patients and medical professionals are summarized in Table 1. A comparison of the frequencies and details of the self-management methods generated the two following themes.

Theme 1: *The medical professionals and diabetes patients had different priorities about methods of self-management.*

There were similarities and differences between the medical professionals and diabetes patients in their understanding of self-management of diabetes. The similarities were that diet control and exercises were brought up most frequently by both groups as methods of self-management. There were two differences in their understanding of self-management. Firstly, the medical professionals placed much more importance on monitoring glucose as a self-management method than the patients. All the sampled medical professionals reported that they would ask their patients to buy a glucose meter to record their glucose levels and submit the data in subsequent clinical visits. They commented that the information was vital for them to assess the patients' latest health conditions and to see if adjustment in their treatment was needed. Secondly, the medical professionals considered regular visits to clinics an important part of self-management, but none of the sampled patients considered it a self-management method.

For the diabetes patients, self-management mainly meant diet control and regular exercise. Monitoring glucose levels were brought up by some of the patients, but not as frequently as diet control and regular exercise.

Theme 2: *Regarding diet control, the medical professionals put emphasis on principles and guidelines while the patients put emphasis on specific lifestyle change.*

The medical professional described diet control as "eating according to our instructions", "adopting a scientific diet", or "counting the energy in food items". They said that certain food items should be avoided totally, such as desserts or deep fried food items. They also advised their patients to eat at regular intervals, or to maintain a good dietary habit.

To the patients, diet control represented a major change in lifestyle. They reported many dietary restrictions such as eating less meat, less rice, less sugary items, less oily foods, no alcoholic drinks, no cigarette, and less soft drink. Some patients reported a

change in eating times and eating frequencies, for example moving dinner time to a later hour so as to avoid the desire for snacks before bed, or eating more meals with smaller portions. Two patients reported that they consumed more home-made food because food prepared by restaurants was too oily. Sometimes a diet change could be drastic. For example, one patient

mentioned that he refrained from alcoholic drinks and one reported that he stopped drinking sweetened beverages. Diet control also involved the support of family members. One patient reported that his wife prepared appropriate dishes for him. Another patient reported that his family members kept an eye on him to stop him from consuming sweet food.

Table 1 Top four self-management methods reported by patients and medical professionals

Patients (n=12)	Freq	Medical professionals (n=6)	Freq
Diet control	34	Blood glucose monitoring	6
Exercise	17	Diet control	6
Blood glucose monitoring	9	Exercise	4
Alternative medicine	4	Regular visits to clinics	3

The top five barriers in self-management reported by the patients and medical professionals are summarized in Table 2. A comparison of the frequencies and details of the barriers generated two themes as follows.

Theme 3: *Medical professionals were able to identify most of the work-related problems as major barriers in self-management among patients.*

Work-related problems in self-management of diabetes were reported most frequently by both patients and medical professionals. The patients faced three major work-related problems, namely long hours of work, irregular dining times, and inconvenience of monitoring glucose level in the work environment. Here is a typical quote:

“I know that having regular mealtimes is very important. However, my mealtimes are very irregular. Moreover, sometimes I work overtime, maybe even till three o'clock in the morning.”

Some patients reported that because of work shifts and irregular meal times, they often skipped their oral medications. Social image and inconvenience at the work place were most frequently reported as barriers to monitoring glucose level or injecting insulin. Here is a representative quote:

“I'm a salesperson and I sometimes take clients to meals. I don't want others to see me injecting insulin. You also need to take a lot of things with you for the injections. You need rubbing alcohol, cotton wool, a syringe and an ice bag for keeping the temperature of the insulin safe, which are very troublesome.”

Long hours of work and lack of energy after work were most frequently reported as barriers to exercise. Here is a typical quote:

“My work is sometimes too tiring. When I get home in the evening, and there is a lot to do at home, I just don't want to move.”

The medical professionals also identified long working hours, irregular meal times, and difficulty in monitoring glucose level at the workplace major problems faced by patients in self-management. They prescribed instructions that at times did not take into consideration diabetes patients' work context. For example, a doctor reported that she advised a patient not to work at night shift in order to have a regular meal schedule, but the patient said this was not an option. The medical professionals perceived that the injection of insulin at the workplace was a barrier. They commented that patients were not able to keep insulin at the required temperature at their workplaces. They also perceived that patients would have a social image problem if they inject insulin in public. Here is a typical quote:

“A kind of insulin is short-acting. It has to be injected before each meal. Injecting insulin before lunch is a problem. Some workplaces don't have a refrigerator, and this kind of insulin has to be kept between 2 to 8 degrees Celsius. We may provide the patients with an insulation bag. Yet they sometimes don't want to inject themselves when their colleagues are around.”

Inability to drink alcohol in social gatherings was brought up by patients as a source of social barrier. However, none of the medical professionals reported it.

Theme 4: *The medical professionals failed to identify adverse physical responses and food craving as major barriers faced by patients in self-management.*

The patients reported that they experienced a variety of adverse physical responses to their self-management methods, including hunger (mentioned five times), physical pain due to glucose level monitoring

(mentioned three times), shaky hands, sweating, and weight gain. One patient reported that he struggled with hunger almost every day. Two patients reported that when they were hungry, they would lose control of their diet. However, none of the medical professionals in the sample reported adverse physical responses as a problem for self-management.

Furthermore, only one medical professional reported food craving as a cause for patients' failure to control their diet. A number of patients reported that they

found it difficult to resist the temptation of sweet food and big meat portions. They found the "forbidden" food pleasing to the eyes and delicious. Two patients also mentioned that it was extremely difficult to resist the craving when they saw other people enjoying food freely. Here is a typical quote:

"I crave foods. In the hospital you see people like yourself and their food is like yours, but outside you see normal people, who eat sweet, delicious foods, so you crave them."

Table 2 Top five barriers in self-management reported by patients and medical professionals

Patients (n=12)	Freq	Medical professionals (n=6)	Freq
Work related problems	21	Work related problems	11
Adverse physical responses	11	Social influence	10
Not taking diabetes seriously	6	Inconvenience of oral medication and glucose monitoring	4
Social influence	6	Not taking diabetes seriously	2
Difficult to resist food craving	4	Financial constraint	2

The motivations for self-management reported by the patients and medical professionals are summarized in Table 3. A comparison of them and their frequencies generated the following theme.

Theme 5: *The medical professionals fail to recognize that goals to fulfill family responsibilities drive patients' self-management.*

Family related concerns were reported most frequently by the patients as motivations for self-management. Four patients reported that they would like to care for their children until the children got married. One female patient expressed her concern about having

a baby to maintain a good marriage. Two patients reported that they did not want to become burdens to their families. Family related concerns as motivations for self-management were reported only twice by the medical professionals. The emphasis was on not being a burden to the family.

A better or longer life was reported most frequently by the medical professionals as patients' motivations for self-management. However, it was seldom reported by the patients. To the patients, a better life was related to ability to achieve life goals, especially goals related to family duties.

Table 3 Top four motivations for self-management reported by patients and medical professionals

Patients (n=12)	Freq	Medical professionals (n=6)	Freq
Family related	14	A better or longer life	8
Personal comfort/health	6	Prevention or delay of complications	4
A better or longer life	4	Economic concerns	4
Prevention or delay of complications	4	Ability to work normally	3

Discussion

Newly discovered work-related barriers to self-management.

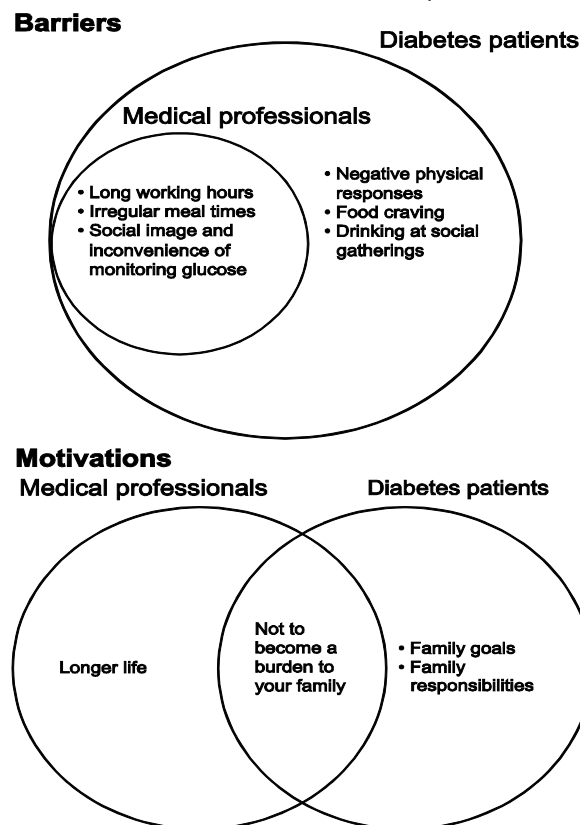
Most of the barriers to self-management of diabetes found in this study have existed in the literature. The newly identified barriers to self-management of Type II diabetes that working adults reported include long working hours (which hinder exercise), irregular meal times (which make it difficult to follow dietary instructions), and social pressure regarding drinking. Time pressure at work and irregular work routine had been identified as barriers to self-management among working Type I diabetes patients. Our study found that these perceived barriers were also found among Type II diabetes

patients. Social pressure regarding drinking was not reported as a perceived barrier in previous studies.

Perception gaps.

The five themes indicated that the medical professionals did not have a thorough understanding of working diabetes patients' perceived barriers to self-management and motivations for behavioral change. The perception gaps identified in this study are summarized in Figure 1, which shows that the medical professionals were able to identify some but not all of the barriers faced by diabetes patients. Three barriers that they failed to identify were negative physical responses, food craving, and drinking at social gatherings. They also missed some key motivations for self-management of diabetes.

Figure 1 Perception gaps in barriers and motivations of medical professionals and working diabetes patients



(Source: from our analysis)

The diet control instructions that medical professionals offered are often generic and were not customized to the individual's unique circumstances. Medical professionals tend to adopt an authoritative and disease-centered approach when communicating with the patients. In this approach, medical professionals

expect patients to follow the self-management methods that they recommend without question or negotiation (Alder, Abraham, van Teijlingen, & Porter, 2009). Though some medical professionals in our study showed some understanding of patients' emotional needs and life issues, they seldom attempted to find common

ground on specific problems patients faced and develop mutually agreed ways of self-management.

Our sampled medical professionals acknowledged that an irregular meal schedule due to work was a barrier for diet control. However, they did not provide any specific guidance on how to cope with this.

Empowering patients in self-management.

As health education and patient empowerment has demonstrated to be effective in encouraging self-management (Mantwill, Fiordelli, Ludolph, & Schulz, 2015), there is a need for medical professionals to integrate patients' specific perceptions and life goals in the health education process.

A previous study found that diabetes patients valued doctors that showed respect for them and were willing to discuss openly with them their options (Hewitt-Taylor & Bond, 2012). Medical professionals therefore need to listen to their patients and help them to overcome their problems. Restrictive eating and the feeling of hunger as major barriers to diet control reported by the patients were consistent with the findings of a previous study of US patients (Schultz, et al., 2001), which suggested that patients' favorite food items should be included in setting dietary goals to reduce feeling of deprivation. Our study did not show that the medical professionals worked with patients to set up a mutually agreed meal plan. Equipping patients with knowledge and skills of making informed food choices and allowing them to negotiate about favorite food items in the designed diet may encourage a positive behavioral change. Medical professionals also need to give advice on what patients should do to deal with adverse physical responses.

The strong desire for patients to maintain social relations was consistent with the findings of Ebrahim et al.'s (2014) study. It also reflects the orientation of a collectivist culture. What is new in this study is that the patients demonstrated a strong desire to contribute to their family. Medical professionals can take advantage of this aspiration to encourage patients' participation in self-management. Medical professionals can also establish partnership with patients' family members to provide support to the patients.

Social acceptance of diabetes.

The medical professionals were aware of social influence as a barrier to diabetes self-management. However, their emphasis was on the social stigma of injecting insulin and taking medications in public. On the

Another example of a work related issue that medical professionals in this study did not address was the barrier to diet control due to social engagements. Drinking alcohol with business associates and friends were considered by some patients as an important part of their social and work life. None of the medical professionals in the sample reported this barrier. On the other hand, the patients in this study were concerned about social rejection if they stop drinking at social gatherings. We recommend that medical professionals should discuss with diabetes patients how they practice self-management of their disease in a socially acceptable way. How to deal with social drinking should be one of the topics of discussion.

Limitations

Since participation in the study was voluntary, participants might be those self-management was relatively successful. Patients who refused to participate might encounter barriers to self-management that we were not able to identify. Owing to the limitations of the convenience sample and the small sample size, care should be taken to generalize the results of the current study to diabetes patients or the medical profession in other Chinese cities. Some perception gaps identified in this study should be explored both in future research in other countries and in more in-depth research using quantitative methodology in China.

Conclusion

To conclude, the study found that there were perception gaps between health care professionals and diabetes patients in self-management. Health care professionals failed to identify adverse physical responses, craving for certain food items, and drinking at social gathering as major problems in working diabetes patients' self-management practices. Medical professionals also did not identify family goals and responsibilities as major motivations for self-management. This study suggests that health care providers need to improve patients' ability to manage their health issues through a more patient-centered approach. Health care professionals have to understand patients better if they really want to help them, and that they need to not just educate patients coldly but recognize "emotional" barriers patients that may face if they follow the routine which health care professionals prescribed.

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Appendix

Questions (for working diabetic patients)

1. Have you heard about any methods of managing diabetes? What are the methods you have heard about?
2. What motivates you to start or maintain diabetes self-management in your daily life?
3. What hinders you from starting or maintaining diabetes self-management in your daily life?
4. Has anyone discussed methods of diabetes self-management with you?
5. If so, who are they?
6. Have they tried to understand your financial conditions and desired quality of life?
7. Have you discussed with them anything (for example, your values) that hinders your self-management of diabetes? If not, why not?

(for diabetes doctors or nurses)

1. In general what are the most important methods for self-management of diabetes?
2. If you want to encourage a patient to start or to maintain self-management of their diabetes what information of theirs would you first try to find out? Why?
3. Do you think it is important to understand diabetic patients' values, financial conditions and desired quality of life?
4. What do you think will motivate a working diabetic patient to start or maintain diabetes self-management in their daily life?
5. If a working diabetic patient wishes to start or to maintain self-management of their disease what obstacles do you think they will face?

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