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Perceived challenges and priorities in co-morbidity management of older patients with Type 2 diabetes

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Abstract

Aims—To explore older patients' perceived impact of chronic co-morbid conditions on Type 2 diabetes self-management.

Methods—We used purposive sampling to select 32 mentally alert community-dwelling adults, aged 60 years or older, diagnosed with Type 2 diabetes and at least one other chronic health condition to participate in focus groups. We summarized the discussions following each focus group and identified codes to describe the overarching themes.

Results—We conducted eight 90-min focus groups, each consisting of two to six patients. Three themes emerged. (i) Diabetes complications as a motivator: managing co-morbid conditions made health an important focal point in the lives of older patients. Most patients acknowledged the positive effect complications had on their diabetes self-management by motivating them to pay greater attention to their diabetes to diminish the progression of these complications. (ii) Prioritizing health conditions: patients reported prioritizing health conditions and selectively attending to the management of those conditions based on perceived severity or importance. Further, many patients perceived some conditions as more serious than others and admitted to prioritizing another health condition over their diabetes. (iii) Emotional impact of co-morbidity management: patients described feeling frustrated, confused, and overwhelmed in response to conflicting treatment recommendations, particularly for diet, physical activity and medication regimens.

Conclusions—Complications and co-morbidities may have differential impacts on the diabetes self-management of older patients. Addressing the perceived impact of co-morbidity on diabetes self-management may improve patients' outcomes; however, the most effective method of utilizing this information in clinical practice needs to be examined.

Keywords

co-morbidity; diabetes self-management; qualitative research; Type 2 diabetes

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Competing interests
Nothing to declare.

Introduction

Most diabetes patients have at least one co-morbid condition [1] and as many as 40% have three or more conditions [2]. Chronic co-morbidities can have a deleterious effect on patients' diabetes self-care [3–6], health status and quality of life [7,8]. Further, chronic co-morbidities that do not directly impact self-care may represent competing demands, which require substantial time, effort and money to manage effectively [9,10]. Given the increased likelihood of older patients having two or more distinct illnesses, understanding how co-morbidity impacts diabetes self-management from the patient perspective can help improve diabetes treatment. Important issues include whether patients perceive other chronic conditions as more serious than diabetes and how patients respond to potentially conflicting treatment recommendations. The purpose of this qualitative study was to explore older patients' perceived impact of co-morbidities on Type 2 diabetes self-management.

Methods

We used intensity sampling, a form of purposive sampling [11], to select older patients with Type 2 diabetes and complication/co-morbidities who were able to provide in-depth information on the phenomenon of interest. Potential participants were screened by telephone for eligibility and other socio-demographic information. Primary inclusion criteria included mentally alert community-dwelling adults, aged 60 years or older, reporting a diagnosis of Type 2 diabetes and the presence of one or more chronic conditions in addition to diabetes. Patients were excluded if they were diagnosed with Alzheimer's disease, other dementia, stroke or cancer in the past year, or had impaired activities of daily living (e.g. Do you have any difficulties with bathing, dressing, personal hygiene or walking?). We recruited patients from The Pennsylvania State University Diabetes Database and through flyers in the community. The Pennsylvania State University Institutional Review Board approved the study.

We devised a structured discussion guide and field-tested it for flow and clarity of the questions with a group of four patients. A trained moderator asked patients broad, open-ended questions about challenges to managing co-morbidities, how they cope with potentially interacting conditions and if they perceive some conditions as more severe/important than others. The focus groups were conducted at community sites (recreational centres and churches), university conference rooms, and occasionally at geriatric outpatient clinics. Focus group discussions were audio recorded and transcribed; names and identifiers were removed to protect confidentiality.

We analysed data using standard qualitative techniques [12,13]. Specifically, we summarized the discussion following each focus group and identified codes to describe the overarching themes. This process continued until data saturation was reached. Credibility of the data was supported via investigator triangulation, where more than one investigator independently coded the data [14,15]. Further, two experienced researchers outside the research team and four patients reviewed the findings to achieve researcher and patient corroboration [16].

Dependability of the data interpretations was supported with an audit trail tracking the decision-making process.

Results

We conducted eight 90-min focus groups, each consisting of two to six patients ($n = 32$, see Table 1 for demographic and health characteristics). Transcript identifiers are included with the quotations indicating identification number, gender, focus group number, age and number of health conditions. The following themes emerged during analysis.

Diabetes complications as a motivator

Nearly all patients acknowledged the risk of developing diabetes-related complications. Several stated that the risk of complications motivated them to pay greater attention to their diabetes self-management:

‘...I became concerned not when I started [managing] but when I began reading about it and its complications. It’s partly what motivated me to stay under control with it. The things that it can cause are really dreadful things... You can lose your eyesight, you can lose your feet and your mobility’ (patient 27, male, group 7, 83 years, 7 conditions).

For patients who had already been diagnosed with diabetes-related complications, their experiences represented the harsh realities of poor glycaemic control. These experiences represented a ‘wake-up call’ for many patients, forcing them to take greater responsibility for their diabetes self-management:

‘About two and a half years ago, I got an infection in my left foot and because of my diabetes I came pretty close to losing my big toe. That was the waker-upper! Then I really took hold of it. It took having a complication to get me to manage it’ (patient 20, male, group 6, 68 years, 4 conditions).

Further, many recognized the relationship between their diabetes and complications and believed they could improve the status of these conditions (e.g. reduce symptoms, slow the progression) by improving their glycaemic control:

‘My neuropathy... makes me pay attention to my diabetes more. I still have this thought in my mind that it is reversible to some extent—and I think it’s iffy—but as long as I keep my blood sugars down maybe the pain will go away’ (patient 44, male, group 1, 68 years, 7 conditions).

Prioritizing health conditions

Although patients acknowledged the importance of managing each of their health conditions, many perceived some conditions as more serious than others and admitted to prioritizing another condition over their diabetes:

‘I think my arthritis is worse than my diabetes... The diabetes is more minor’ (patient 12, female, group 4, 83 years, 4 conditions).

Another patient stated:

‘I think of everything, the atrial fibrillation is the highest priority. I’ve been hospitalized three times and been in the emergency room a few times’ (patient 5, female, group 2, 81 years, 8 conditions).

Perhaps not unrelated, these same patients experienced fewer diabetes-related complications. Further, the challenge of managing multiple complex self-care regimens limited some patients’ ability to deal with co-morbidity in their day-to-day lives. Some found it too difficult to manage all of their conditions, leading them to selectively attend to conditions based on perceived severity:

‘...I’ve had kidney stones about 30 times and every time I get an attack I don’t worry at all about my diet or anything else until I get done treating it to get the pain to go away...I don’t give a single thought to my blood sugar when that happens’ (patient 4, male, group 1, 68 years, 7 conditions).

For others, financial and/or insurance barriers from managing multiple health conditions led them to selectively attend to conditions based on perceived importance. To illustrate patients’ adjustment to financial and/or insurance limitations, this patient explained:

‘I cut four medicines out. I took away two medicines, which are for my pain, and one for my kidney stones, which I have on a regular basis, and the other for shrinking my prostate’ (patient 4, male, group 1, 68 years, 7 conditions).

Emotional impact of co-morbidity management

Most patients stated that managing co-morbidities had a negative impact on their emotional well-being. Patients described feeling frustrated and overwhelmed with the challenge of integrating numerous self-management behaviours for multiple health conditions:

‘When I found out about my diabetes, I went on a diet immediately and started reading labels in the grocery store. I’d spend hours in the store—that was a very frustrating process. You’d find a product that was low in sugar, low in cholesterol, low in fat but had a ton of salt in it... Which is the best way to go? You’re not supposed to have all that salt because of the high blood pressure. You don’t want the carbs because of diabetes. You don’t want the fat because of high cholesterol’ (patient 30, male, group 8, 73 years, 8 health conditions).

Patients also reported feeling confused as a result of conflicting treatment recommendations, particularly for diet, physical activity, and medication regimens:

‘That’s where I really get confused... It’s like a conflict between my diabetes and this other thing [Duhring’s disease]. Sometimes there aren’t a lot of things available on the menu. It’s so hard trying to manage your diabetes along with other health problems’ (patient 5, female, group 2, 81 years, 8 health conditions).

Conclusions

In our focus group study of 32 older patients with Type 2 diabetes and chronic co-morbidities, patients perceived some conditions as more serious than diabetes and selectively attended to the self-management of those conditions based on perceived severity or

importance. Patients also reported difficulty and confusion integrating numerous self-management behaviours for potentially interacting conditions. Many felt frustrated and overwhelmed with the multiple lifestyle, self-care, and medical demands required to manage their co-morbidities. Despite these challenges, most patients acknowledged how their co-morbid conditions seemed to motivate them to improve their self-management by focusing on preventing or diminishing the progression of complications.

Our findings suggest that the threat or onset of diabetes complications may motivate patients to perform recommended self-care behaviours. A few patients attributed this motivation to learning about potential diabetes complications, while most attributed it to a ‘wake-up call’ after developing complications. A possible explanation is that patients internalized their fear of diabetes complications, which may have served as a catalyst to performing self-care. Whether external sources (e.g. diabetes education) of fear or clinicians’ use of threats motivate or inhibit patients’ self-care is not clear. Most literature reports the use of threats or scare tactics as an ineffective clinical strategy [17–21], although a few find these techniques useful [21–23]. Information about how diabetes complications can be used in clinical practice to energize patients without diminishing quality of life or self-efficacy is needed.

Additionally, our findings indicate that many patients prioritized another health condition over their diabetes. Similarly, two qualitative studies examining barriers to co-morbidity management also found patients prioritized the management of one health condition over another [24,25]. In our study, patients may have assigned lower priority to their diabetes because they had not yet experienced serious complications. These patients may not have understood the benefits of immediate and long-term treatment recommendations or the rationale for carrying out self-care behaviours. Further examination of the number, type and severity of co-morbidities may provide explanations for patients’ prioritization of health conditions [6,26,27]. Research is also needed to address specific co-morbidity barriers and develop and test strategies that help patients prioritize diabetes self-care in the absence of crisis. Study limitations include homogeneity of the study sample, participant self-selection and self-reported data. Cultural and social variations regarding co-morbidity management among varied ethno-cultural groups warrant further study.

In summary, complications and co-morbidities may have differential impacts on older patients’ diabetes self-management. Addressing the perceived impact of co-morbidity on diabetes self-management may improve patients’ outcomes; however, the most effective method of utilizing this information in clinical practice needs to be examined.

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References

1. Druss BG, Marcus SC, Olfson M, Tanielian T, Elinson L, Pincus HA. Comparing the national economic burden of five chronic conditions. *Health Aff.* 2001; 20:233–241.
2. Wolff JL, Starfield B, Anderson G. Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Arch Intern Med.* 2002; 162:2269–2276. [PubMed: 12418941]
3. Ciechanowski PS, Katon WJ, Russo JE. Depression and diabetes: impact of depressive symptoms on adherence, function, and costs. *Arch Intern Med.* 2000; 160:3278–3285. [PubMed: 11088090]
4. Schoenberg NE, Drungle SC. Barriers to non-insulin dependent diabetes mellitus (NIDDM) self-care practices among older women. *J Aging Health.* 2001; 13:443–466. [PubMed: 11813736]
5. Krein SL, Heisler M, Piette JD, Makki F, Kerr EA. The effect of chronic pain on diabetes patients' self-management. *Diabetes Care.* 2005; 28:65–70. [PubMed: 15616235]
6. Kerr EA, Heisler M, Krein SL, Kabeto M, Langa KM, Weir D, et al. Beyond comorbidity counts: How do comorbidity type and severity influence diabetes patients' treatment priorities and self-management? *J Gen Intern Med.* 2007; 22:1635–1640. [PubMed: 17647065]
7. Glasgow RE, Dryfoos J, Ruggiero L, Chobanian L, Eakin E. Quality of life and associated characteristics in a large sample of adults with diabetes. *Diabetes Care.* 1997; 20:562–567. [PubMed: 9096981]
8. Wray LA, Ofstedal MB, Langa KM, Blaum CS. The effect of diabetes on disability in middle-aged and older adults. *J Gerontol A Biol Sci Med Sci.* 2005; 60:1206–1211. [PubMed: 16183964]
9. Jaen CR, Stange KC, Nutting PA. Competing demands of primary care: a model for the delivery of clinical preventive services. *J Fam Pract.* 1994; 38:166–171. [PubMed: 8308509]
10. Chernof BA, Sherman SE, Lanto AB, Lee ML, Yano EM, Rubenstein LV. Health habit counseling amidst competing demands: effects of patient health habits and visit characteristics. *Med Care.* 1999; 37:738–747. [PubMed: 10448717]
11. Morse, J.; Field, P. *Qualitative Research Methods for Health Professionals.* 2nd. Thousand Oaks, CA: Sage Publications; 1995.
12. Krueger, RA. *Focus Groups: A Practical Guide for Applied Research.* 2nd. Thousand Oaks, CA: Sage Publications; 1994.
13. Krueger, RA. *Focus Groups: A Practical Guide for Applied Research.* 3rd. Thousand Oaks, CA: Sage Publications; 2000.
14. Miles, MB.; Huberman, AM. *Qualitative Data Analysis: An Expanded Sourcebook.* 2nd. Thousand Oaks, CA: SAGE Publications; 1994.
15. Russell CK, Gregory DM. Evaluation of qualitative research studies. *Evid Based Nurs.* 2003; 6:36–40. [PubMed: 12710415]
16. Denzin, NK. *The Research Act: A Theoretical Introduction to Sociological Methods.* 2nd. New York, NY: McGraw-Hill; 1978.
17. Votroubek, WL.; Townsend, J. *Pediatric Home Care.* 2nd. Gaithersburg, MD: Aspen Publishers Inc; 1997.
18. Polonsky WH, Jackson RA. What's so tough about taking insulin? Addressing the problem of psychological insulin resistance in Type 2 diabetes. *Clin Diabetes.* 2004; 22:147–150.
19. Kokanovic R, Manderson L. Exploring doctor–patient communication in immigrant Australians with Type 2 diabetes: a qualitative study. *J Gen Intern Med.* 2007; 22:459–463. [PubMed: 17372793]
20. Escudero-Carretero MJ, Prieto-Rodríguez M, Fernández-Fernández I, March-Cerdá JC. Expectations held by type 1 and 2 diabetes mellitus patients and their relatives: the importance of facilitating the health-care process. *Health Expect.* 2007; 10:337–349. [PubMed: 17986070]
21. Ward SH, Gray AM, Paranjape A. African Americans' perceptions of physician attempts to address obesity in the primary care setting. *J Gen Intern Med.* 2009; 24:579–584. [PubMed: 19277791]
22. But I want to motivate you. *Diabetes Educ.* 1986; 12:96–97. [PubMed: 3634704]
23. Powers, MA. *Handbook of Diabetes Medical Nutrition Therapy.* Gaithersburg, MD: Aspen Publishers Inc; 1996.

24. Bayliss EA, Steiner JF, Fernald DH, Crane LA, Main DS. Descriptions of barriers to self-care by persons with comorbid chronic diseases. *Ann Fam Med*. 2003; 1:15–21. [PubMed: 15043175]
25. Jowsey T, Jeon YH, Dugdale P, Glasgow NJ, Kljakovic M, Usher-wood T. Challenges for comorbid chronic illness care and policy in Australia: a qualitative study. *Aust New Zealand Health Policy*. 2009; 6:22–29. [PubMed: 19735576]
26. Piette JD, Kerr EA. The impact of comorbid chronic conditions on diabetes care. *Diabetes Care*. 2006; 29:725–731. [PubMed: 16505540]
27. Childs B. Complications and comorbidities: effects on diabetes self-care. *Am J Nurs*. 2007; 6:55–59. [PubMed: 17563441]

Table 1

Patients' demographic and health characteristics

	Mean \pm sd (<i>n</i> = 32)	Range
HbA _{1c} (%) *	7.0 \pm 0.8	5.6–8.2
HbA _{1c} (mmol/mol)	53 \pm 15	38–66
Diabetes duration (years)	15.0 \pm 12.6	2–50
Prescribed oral hypoglycaemic medication(s) * (%)	87.5	
Prescribed insulin injections * (%)	46.9	
Mean number of health conditions including diabetes	5.2 \pm 1.7	3–9
BMI (kg/m ²) *	29.9 \pm 6.5	19.8–48.8
Age (years)	75.3 \pm 7.4	60–88
Education (years)	14.6 \pm 2.8	9–20
Female (%)	56.3	
White (%)	100.0	
Married (%)	71.9	
Retired (%)	93.8	

Most common conditions [†]	Per cent reporting condition (<i>n</i>)
High blood pressure	66% (23)
Arthritis	54% (19)
Retinopathy	43% (15)
Hypercholesterolaemia (high cholesterol)	34% (12)
Coronary artery disease (heart disease)	23% (8)
Neuropathy	23% (8)
Cardiac arrhythmia	17% (6)
Hypothyroidism	17% (6)
Depression	14% (5)
Post-myocardial infarction	14% (5)
Asthma	11% (4)
Chronic pain	9% (3)
Presbycusis (hearing loss)	9% (3)
Stroke	9% (3)
Chronic obstructive pulmonary disease	6% (2)
Leukaemia	6% (2)
Nephropathy	6% (2)
Prostate cancer	6% (2)
Insomnia	6% (2)

* HbA_{1c}, BMI, prescribed oral hypoglycaemic medication(s) and prescribed insulin injections are based on self-report.

[†] Reported by at least two patients.