

Impact of Gender on Patient Experiences of Self-Management in Type 2 Diabetes: A Qualitative Study

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Purpose: This study aims to identify gender disparities in knowledge, attitudes and behaviors related to self-management and control of Type 2 diabetes Mellitus (T2DM) among primary care patients. The research was conducted across multiple Spanish cities.

Patients and Methods: The study involved 8 Primary Care Centres located in four distinct regions of Spain: East (Barcelona), Centre (Madrid), North (Pamplona and Zumaia) and South (Vélez-Málaga and Málaga). A total of 111 individuals diagnosed with T2DM, comprising 52 women and 59 men, participated in 12 group discussions at these primary healthcare centers from February to June 2015. Participation was voluntary, and all participants provided informed consent by signing the consent form. A qualitative hermeneutic phenomenological study with a maximum variation sample was done. Participant profiles were defined based on gender, age, place of residence, type of treatment, years living with T2DM and the presence or absence of a cardiovascular event. Thematic analysis was used to analyze the data.

Results: Participants were aware that diabetes is a chronic condition, with varied levels of concern regarding the diagnosis. Participants' locus of control influenced their perception of the disease's cause, with women attributing it to stress and emotional situations, while men linked it to risky behaviors. Self-management strategies were shaped by beliefs about diabetes, with both genders facing challenges in implementing recommended practices. Gender differences were also evident in caregiving roles, with men receiving more family support for diet adherence, while women prioritized family needs over their self-care. Participants expressed satisfaction with professional-patient interactions but highlighted the need for more accessible information and specialist care, suggesting support groups for women and clear health guidelines for men.

Conclusion: Gender differences significantly influence how patients perceive and manage type 2 diabetes, with women experiencing greater concern and care burden compared to men. Effective diabetes management requires tailored support that addresses these gender-specific challenges. Enhancing healthcare services with clear guidelines and support groups can improve self-management outcomes in both men and women.

Keywords: gender, type 2 diabetes mellitus, self-care, personal experience

Introduction

Type 2 diabetes mellitus (T2DM) is a chronic disease that requires a lifelong commitment to complex lifestyle adjustments. These include dietary control, maintenance of a physically active lifestyle, regular self-monitoring of blood glucose levels, and adherence to oral and/or injectable treatments to control and prevent or delay diabetes complications.¹⁻³ Cardiovascular disease is the most important complication, is a leading cause of death and disability among people with diabetes and has a higher prevalence rate compared to their counterparts without diabetes.⁴ Among women, diabetes has a greater impact on cardiovascular disease than among men. It has been estimated that the relative risk of coronary heart disease is 44% higher in women compared to men, 27% higher in stroke and 19% higher in vascular dementia.⁵⁻⁷ However, despite these higher risks, women are less frequently prescribed medications aimed at preventing cardiovascular disease.^{8,9} Existing studies indicate that gender may play an important role in disease self-management,^{3,8,10} as well as differences in how men and women experience and manage diabetes.^{11,12}

According to the existing literature, some hypotheses could explain this phenomenon. First, there is limited representation of women in studies focused on cardiovascular disease. Second, healthcare professionals tend to assign lower cardiovascular risk ratings to women,¹³ an aspect that has received minimal research. Finally, there is a notable lack of awareness among women of the importance and risks associated with cardiovascular disease, potentially influenced by the perception that breast and cervical cancer are more pressing health concerns.^{10,14,15}

Perception of the disease is considered very important, as disease severity has been shown to be associated with patients' perception of severity.¹⁶ Perceptions of the disease could be shaped by gender-constructed social roles and expectations.¹⁷ The aim of this study is to identify gender differences in knowledge, attitudes, and behaviors related to the control and self-management of T2DM in primary care patients. The study was conducted in Primary Care Centers in different Spanish cities.

Materials and Methods

Design

This was a qualitative study, specifically adopting the Heideggerian hermeneutics phenomenological methodology,¹⁸ to delve into individual experiences related to control and self-management of T2DM within the primary care setting. We used an interpretive approach, aiming to understand discourses emerging from personal experiences and to identify the social context through the exploration of language.

Study manuscript follows the consolidated criteria for reporting qualitative research (COREQ) ([Supplementary Table 1](#)). The COREQ guide includes a reporting checklist for in-depth interviews and focus groups to promote complete and transparent reporting and to improve the rigor, completeness and credibility of these two data collection methods. The checklist contains 32 items with a description for each criterion and is made up of three domains: research team and reflexivity, study design, and analysis and findings.¹⁹

Conceptual Framework

This study was guided by a conceptual framework for self- and family management of chronic conditions, developed at Yale School of Nursing.²⁰ This framework includes risk and protective factors, as well as outcomes that potentially influence individuals' and families' capacity to manage chronic illness. The factors and outcomes included in this framework are categorized into four dimensions: 1) health status; 2) individual-level factors/outcomes; 3) family-related factors/outcomes; and 4) environmental context. According to this mode, self- and family management behaviors act as mediators between risk/protective factors and ultimate outcomes. Accordingly, health interventions can strategically target either the modification of risk/protective factors, or shaping self- and family management behaviors.

Participant and Recruitment

Subjects with a diagnosis of T2DM and age over 35 years were recruited by their general practitioner (GP) or nurse to participate in the study and to explain the structure and the purpose of the study. The research was conducted from February to June 2015 in 8 Primary Care Centers from four regions of Spain: East (Barcelona), Centre (Madrid), North

(Pamplona and Zumaia) and South (Vélez-Málaga and Málaga). Employing a theoretical sampling approach with maximum variation strategy, participants were selected based on gender, age, place of residence, type of treatment, years with T2DM and presence/absence of previous cardiovascular event. Thus, the eligibility criteria for the study were to have a diagnosis of DM2, 35 years of age or older and to belong to one of the participating health centers.

Data Collection

Data were obtained through discussion groups from 7 to 13 people. In each area, 3 focus groups were set up, one with men, one with women and one with both men and women. All groups consisted of people of different ages from 35 years old onward, taking different treatments for diabetes and with the absence/presence of cardiovascular event. A female moderator (AB) and a female observer (LM), both with previous experience in qualitative research, were present in all groups. Data were collected until saturation was reached.²¹

Prior to data collection, the interview guide was pilot tested with 3 individuals with T2DM who did not participate in the study. The guide explored 10 main components: 1) Coexistence with the disease and moment of diagnosis; 2) Knowledge about diabetes at the moment of diagnosis; 3) Communication and relationship with the health institution (locus of control, shared responsibility, individual responsibility in self-care); 4) Adherence to treatment and medical prescriptions, and perceived treatment benefits; 5) Coping strategies; 6) Support received/perceived; 7) States of mind and their effect on health. Contents of emotional variability; 8) Work environment; 9) Leisure and free time; and 10) Areas for improvement in the management of diabetes.

The dynamics of the discussion groups were designed to create a space where participants could openly share their experiences among peers (homogeneity criteria) while fostering significant discursive variability (heterogeneity criteria). These group sessions, held at the primary care centers to which the patients were affiliated, extended for approximately 90 to 120 minutes. Following the acquisition of informed consent, the sessions were both video and audio-recorded. A literal and systematic transcription of the audio and video recordings was undertaken, conducted by an experienced member of the research team. To ensure confidentiality, all data were anonymized. Additionally, observational field notes, capturing contextual characteristics, the overall atmosphere, and pertinent non-verbal expressions, were included in the analyses. The moderator actively recorded field notes during the focus group discussions. Data saturation was achieved in each discussion group. The field notebook, the saturation of information and the reflexivity of the research team regarding the entire research process are criteria of quality and rigor for qualitative studies.

Data Analysis

A thematic analysis^{21–23} was performed based on the transcriptions²⁴ and the moderator's notes obtained during the group discussions. The entire analytical process was carried out by two researchers. First of all, relevant subjects and texts were identified; text was fragmented into units of meaning and labeled with a code. Secondly, the categories were created by grouping the codes by similarity. This categorization was done in a mixed way, starting from the predefined categories in the focus group script (Additional file 1) based on the self- and family management framework²⁰ and expanded with the themes emerged from the discussion groups. Thirdly, the entirely text was fragmented by categories and analyzed each of them in detail. Finally, an explanatory framework with a new text was created after establishing the relationships between categories. NVivo v10 was used for the analysis.

The findings and discrepancies were discussed with the entire research team until consensus was reached. This consensus-seeking process (triangulation)²⁵ is a method used in qualitative research to ensure validity. The research team also shared the findings with a subset of 10 participants as part of the validation process. No objections were raised. This validation process added important insights to the analysis and facilitated consensus on the interpretation of results.

Ethical Considerations

The study was conducted according to the guidelines of the Declaration of Helsinki and Good Clinical Research Practice. Approval was granted by the Ethics and Clinical Research Committee of the Primary Care Research Institute Jordi Gol (P14/131). Comprehensive information about the study's objectives and procedures was communicated to all participants, and their informed consent form, including the publication of anonymous responses, was obtained before engaging

in the group discussions. All transcripts were coded and anonymized and data were securely stored to maintain confidentiality. The audio and video recordings will be securely deleted five years after the study's completion, in accordance with our data retention policy.

Results

Out of 116 subjects initially approached, 5 were excluded (1 due to the absence of diabetes and 4 for non-attendance due to personal reasons). Consequently, the final cohort comprised 111 subjects; 52 women and 59 men. The baseline characteristics of the included subjects are shown in Table 1. Through thematic analysis, eight categories were identified indicating potential gender-related differences in the management and control of T2DM. These categories were: 1) Impact of the diagnosis; 2) Attribution of responsibility; 3) Diabetes-related beliefs and self-management; 4) Emotions and self-management; 5) Self-care and carer's support; 6) Professional-patient interactions; 7) Sources of information and resources; and 8) Suggestions for Improvement.

Impact of the Diagnosis

Participants demonstrated awareness that diabetes is a chronic condition with no definitive cure. Notably, there was considerable variability in the levels of concern and assessment regarding this information. While some individuals

Table 1 Baseline Characteristics of the Participants

Site	Groups	n	Gender	Age				Treatment type				CV event
				35–44y	45–54y	55–64y	65–75y	No T	NIAD	I	NIAD&I	
Vélez-Málaga and Málaga	Women's Group Vélez Norte HC	9	Female: 9	2	3	1	3	1	3	5	0	Yes: 1 No: 8
	Men's Group Vélez Norte HC	9	Male: 9	0	1	5	3	0	6	1	2	Yes: 3 No: 6
	Mixed Group Puerta Blanca HC	9	Female: 3 Male: 6	2	3	2	2	0	8	0	1	Yes: 2 No: 7
Pamplona and Zumaia	Women's Group Azpilagaña HC	11	Female: 11	0	3	4	4	0	6	0	5	Yes: 3 No: 8
	Men's Group Azpilagaña HC	12	Male: 12	2	1	6	3	0	8	1	3	Yes: 5 No: 7
	Mixed Group Zumaia HC	13	Female: 6 Male: 7	2	0	7	4	0	9	1	3	Yes: 3 No: 10
Madrid	Women's Group Los Alpes HC	12	Female: 12	1	3	3	5	1	7	1	3	Yes: 4 No: 8
	Men's Group Los Alpes HC	10	Male: 10	0	4	2	4	0	5	2	3	Yes: 1 No: 9
	Mixed Group M ^a Jesús Hereza HC	7	Female: 5 Male: 2	1	0	0	6	0	4	2	1	Yes: 0 No: 7
Barcelona	Women's Group Sant Martí HC	4	Female: 4	0	0	1	3	0	4	0	0	Yes: 0 No: 4
	Men's Group Sant Martí HC	8	Male: 8	1	2	2	3	2	4	2	0	Yes: 1 No: 7
	Mixed Group Maragall HC	7	Female: 2 Men: 5	0	1	3	3	2	4	0	1	Yes: 0 No: 7

Abbreviations: HC, healthcare centre; y, year; T, treatment; NIAD, noninsulin antidiabetic drug; I, insulin; CV, cardiovascular.

regarded the diagnosis as a genuine life-threatening event, others perceived it as just another life occurrence devoid of particular significance. Several participants admitted to initially denying the reality of the disease at the time of diagnosis, revealing a shift in perspective over time as the disease progressed. Interestingly, women generally exhibited higher levels of concern, expressing the difficulty of coming to terms with the diagnosis, whereas men appeared to be less affected upon receiving the diagnosis.

“I felt overwhelming fear when my general practitioner informed me that I had diabetes”. (Female, 39 years old, treated with insulin without cardiovascular disease)

“My general practitioner delivered the diagnosis in a very calm manner, leading me to believe that it was a common disease (...). Surprisingly, my feelings have worsened over time, and I now find myself in a more challenging emotional state than at the moment of the initial diagnosis (...). (Male, 68 years old, treated with insulin with cardiovascular disease)

It is noteworthy that, for the majority of participants, diabetes was considered a socially accepted condition.

Attribution of Responsibility

The second category pertained to participants' locus of control, specifically whether they perceived their attitudes and behaviors as originating from internal or external conditions, and factors contributing to the development of T2DM. Notably, some participants, particularly women, attributed the onset of the disease to stressful and highly emotional situations, such as the death of a loved one or admissions to the hospital.

“I lost my dad, and two years later, I was diagnosed with diabetes”. (Female, 52 years old, treated with insulin with cardiovascular disease)

In contrast, men tended to attribute their health status to engaging in health-risk behaviors

“(…) I am paying the consequences (...)”. (Male, 35 years old, noninsulin antidiabetic drugs without cardiovascular disease)

Diabetes-Related Beliefs and Self-Management

The constructed meanings participants attributed to diabetes appeared to significantly influence their self-care strategies. Beliefs regarding exercise, diet, and pharmacological treatment also played a role in how patients self-managed diabetes. Some participants linked the disease to external factors, while others considered heredity and their own negligence toward health issues. Despite being aware of the necessary steps for diabetes management, patients often found it challenging to implement recommendations, citing age constraints and a lack of willpower. Faced with these limitations, patients sought alternative ways to manage diabetes, often rooted in their diabetes-related beliefs and a lack of information.

“I pass by a bakery, spot a chocolate croissant, and indulge. If I had to walk for one hour, I'll walk for two hours to burn off the calories (...). The philosophy is simple — ‘Poison doesn't kill; the dosage kills.’ It's all about moderation. Overindulging is what poses a threat”. (Female, 65 years old, insulin treatment without cardiovascular disease)

“(…) Diabetes is a disease that does not kill you (...)”. (Male, 55 years old, insulin treatment with cardiovascular disease)

These alternatives tended to justify sedentary behavior and poorly-balanced diets, hindering positive diabetes self-management. Notably, there was no observed variability between genders in this category.

Emotions and Self-Management

We observed significant diversity in participants' discourses, influenced by both cultural (regional) and gender factors. Women explicitly highlighted that factor such as lack of motivation, fatigue, anxiety, and family responsibilities posed challenges to maintaining consistent healthy behaviors.

“I can't take on more responsibilities. I already care for my mom and my sons, and adding things like different diets and exercise is simply impossible for me (...)”. (Female, 42 years old, noninsulin antidiabetic drugs without cardiovascular disease)

“But since I live alone, well, I kind of sense that sometimes you’re a bit down, and you just throw everything away, what they tell you to do (...).” (Female, 69 years old, insulin treatment without cardiovascular disease)

Conversely, men generally emphasized that mood, motivation, and fatigue were not as critical for them. Instead, they underscored the difficulties of balancing self-care and work responsibilities.

In women, mood was associated with conflicts and emotional distress, while for men, it was linked to stress issues.

“When I go through stress or nerves at work, call it whatever you want (.) and those days, when I take my sugar mid-morning, instead of having 125 I have 142. (Male, 63 years old, noninsulin antidiabetic drugs without cardiovascular disease)

“When I am very stressed by work, and on top of that I have to take care of my diabetes, and (.) There are times when I send it to hell, I’m fed up with diabetes, with work (.) Of course, because you end up desperate”. (Male, 45 years old, insulin treatment without cardiovascular disease)

Overall, participants stressed the importance of maintaining a positive attitude towards the disease for effective self-management. Both men and women acknowledged the impact of mood on glycemic levels. This category is closely interconnected with the following one.

Self-Care and Carer’ Support

This category reveals significant differences and inequalities between genders in the context of caregiving. Some men take on the role of caregivers, leading to notable distinctions in their experiences compared to women, particularly in terms of the impact on self-care. Many men acknowledge the support of their families, with a focus on dietary plans. They often identify their wives as “supervisors” who assist in adhering to the necessary diet and resisting food cravings.

“At times, my wife serves as a guardian, saving me from temptations”. (Male, 67 years old, noninsulin antidiabetic drugs without cardiovascular disease)

In contrast, women with diabetes express that they are already dedicated to caring for their families. As they prioritize family needs over their own, women frequently find themselves neglecting their dietary requirements and the necessity of engaging in physical activity.

“I go to work in the morning, and in the afternoon, I spend time with my daughter. Obviously, I’m not taking her for a walk”. (Female, 40 years old with insulin treatment and cardiovascular disease)

Variability in women’s discourses emerges, with some expressing explicit awareness of the burden of caring for their families. Those who view household chores as work and recognize their role within family networks tend to prioritize their self-care more. On the other hand, some women, while discussing housework, see caring for others “for love” and “as always” as their natural role as mothers or grandmothers, embracing gender-constructed expectations. These women may be less inclined to prioritize themselves over their families’ needs. Generally, the awareness of inequities in the distribution of household responsibilities and family care emanates more strongly from the discourse of the first group of women.

Professional-Patient Interactions

There was significant variability in discourse concerning institutions and the difficulties associated with health service cuts due to financial crises. Interestingly, individuals expressed contradictory opinions along the satisfaction-dissatisfaction spectrum on this matter.

In terms of information received, participants were generally satisfied, feeling well-informed and well-cared for by healthcare professionals. However, they hesitated to ask questions about diabetes and its emotional aspects due to awareness of the brief consultation times and the limited availability of health professionals.

“I have a good general practitioner, but I have numerous doubts that I need to address (...) concerns about the future, my relationships, and even aspects related to sex (...). Sometimes, the visit feels like a mere review of medical tests”. (Male, 58 years old, insulin treatment and without cardiovascular disease)

Some patients expressed the need for additional resources to supplement the information provided during regular visits. Additionally, they wished for information to be presented in a more accessible language, and sought easier access to specialist care. Participants emphasized the importance of healthcare professionals maintaining a positive attitude and encouraging patients to effectively self-manage T2DM.

“I would appreciate motivation from the nurse or general practitioner”. (Female, 38 years old, noninsulin antidiabetic drugs without cardiovascular disease)

Conversely, a too strict approach in medical instructions or an “alarmist attitude” was perceived as counterproductive to promoting good self-management.

Sources of Information and Resources

Participants identified close relatives and healthcare professionals as their primary sources of information. Health education had been provided to them on certain occasions in primary care centers. Additionally, participants mentioned utilizing other sources of information, including the Internet, friends who are physicians or endocrinologists, and fellow individuals living with diabetes.

“I would like to know the best places to find good information”. (Female, 50 years old, insulin treatment with cardiovascular disease)

“I need more information (.) my family doctor only showed me the results of the lab test (.) I need to know what my near future will be (.) what will be the consequences of this (.)”. (Male, 40 years old, noninsulin treatment without cardiovascular disease)

Suggestions for Improvement

Participants offered suggestions for enhancing healthcare services for individuals living with diabetes. Women stressed the significance of support groups for people with diabetes, as a means to promote adherence to physical activity and provide a platform for sharing emotional experiences.

“I wish for a group like this, where I can share experiences with people who have gone through similar situations and can understand me”. (Female, 40 years old, insulin treatment without cardiovascular disease)

In contrast, men recommended the implementation of clear guidelines to enhance health-protective behaviors, such as healthy eating.

“I would like to discover recipes that are suitable for me and easy to cook”. (Male, 40 years old, noninsulin antidiabetic drugs without cardiovascular disease; Male, 72 years old, noninsulin antidiabetic drugs without cardiovascular disease)

Discussion

In the present study, we explored the experiences of people diagnosed with T2DM. The aim was to understand gender differences in the knowledge, attitudes, and behaviors of people with diabetes in relation to self-management of the disease. Gender differences were observed in several dimensions of the experiences of patients with T2DM, especially in aspects related to emotions, feelings, and self-care.

One of the main gender differences observed in the study was the emotional reactions following the diagnosis of T2DM. Women tended to express greater feelings of sadness and anxiety, whereas men showed relatively calm behavior in response to the diagnosis. Women have been considered to be more emotional than men, specifically with respect to negative emotions which are experienced with greater intensity and frequency.^{26,27} Gender differences have also been found in the way emotions are expressed. Women have been attributed a greater facility in using emotional language and expressing it verbally, whereas men tended to express themselves more through behavior.^{28,29} These distinctions may be influenced by social roles based on traditional constructs of femininity and masculinity, along with variations in emotional intensity.³⁰ In accordance with these constructs, men are often reluctant to engage in emotional discourse,

presenting themselves as “strong”, resilient, and self-sufficient in order to maintain their perceived masculinity. In contrast, women are expected to be emotional and.¹⁷

The diagnosis of a chronic disease requires patients to seek help and support, both from healthcare professionals and their family environment. Men may more often experience internal conflicts in having to act in a way that goes against their perceived social role as men defined as the provider of subsistence resources.¹⁷ On the other hand, although women tend to communicate their emotions more openly, they also face self-care challenges. Indeed, in this study, a tendency was observed among women to neglect their own needs and prioritize the needs of others, especially family members. This tendency can again be explained by socially constructed gender roles and norms, in which women are often seen as “caregivers” and men as “providers” within the family context.¹⁷

Regarding the attribution of responsibility for the conditions that contribute to the development of diabetes, women attributed the onset of the disease more to stressful and highly emotional situations, while men attributed it mostly to the performance of risky behaviors or poor health habits. This fact can be related to the concept of locus of control, which refers to the perceived ability to control an event depending on whether the control is perceived as internal or external.³¹ Internal locus of control is when responsibility is attributed to one’s own behavior (eg, poor health habits). In this case, the individual feels capable of controlling the event. Conversely, when responsibility is attributed to external factors such as the death of a family member (external locus of control), the outcome is considered random. Studies on locus of control and health have indicated that internal locus of control buffers the effects of physical and emotional symptoms of illness,³² while external locus of control can be seen as a predictor of illness.³³ In this study, women aligned more with external locus of control and men with internal locus of control, consistent with a study conducted with patients with T2DM in what men were significantly more likely to have internal locus of control than women and it was found that having internal locus of control had positive effects on self-care activities.³⁴

The American and European guidelines advocate lifestyle changes as the first step in the management of DM^{35–38} and maintain that good self-care habits, such as a balanced diet and exercise, are essential for good diabetes control. In this regard, gender differences were observed in the factors that hinder the adoption of good self-care habits. Women identified lack of time, probably related to the role of caregiver associated with the female gender, and low mood as the main obstacles, while men identified the difficulty of combining work and self-care as the main problem. Men may strive to maintain their pre-diagnosis public identity to preserve traditional masculine values such as independence, autonomy, and control of decision-making that may be threatened by a diagnosis of diabetes. Traditional masculine characteristics of autonomy, dominance, and stoicism may make self-care, glycemic control, and treatment compliance difficult, and it becomes difficult to cope with working, reflecting public identity, with the disease when it is perceived as threatening to masculinity.³⁹ These findings are consistent with previous studies; both men and women identified their emotional state and existing complications of the disease as influencing their health and attitude toward self-care.^{39–42} In women, mood was associated with conflict and emotional distress, whereas in men it was related to stress problems. As for work-related stress and the resulting negative emotional states, they have been shown to contribute to negative health behaviors, such as decreased levels of physical activity, eating more food than usual, and increased substance abuse, all conditions that worsen diabetes control.⁴³

Regarding the category of “self-care” and caregiver support, many men acknowledge receiving support from their families and/or partners, especially with regard to dietary aspects. In this regard, single men expressed more difficulties in self-care, especially in maintaining motivation for a healthy diet. In contrast, women with diabetes express that they are caregivers for their families, prioritizing the care of their family over their own self-care due to lack of time.⁴⁴ This often leads to neglect of dietary requirements and the need for physical activity. Women often consider caring for their family a priority,^{45,46} even at the expense of their own health.^{46,47} Social and family support has been shown to be a critical aspect of diabetes self-management.⁴² Women caregivers neglect themselves in order to provide care, diminishing their own time to dedicate to others.⁴⁵ On the other hand, patriarchal culture encourages the fulfillment of caregiving duties in women and the social and economic need to participate in educational, labor and political processes to survive in patriarchal society, trapping women between duty and development.⁴⁵ However, there are individual differences in women’s awareness of the barriers to self-care due to their role in the family. Some women were fully aware of the time and effort they devoted to their unpaid occupation of caring for their family, and how this commitment

left little time for self-care. When women were more aware of these challenges, they tended to seek alternatives to prioritize self-care. However, women who considered self-care secondary to family care often expressed that they were unable to find other options for managing diabetes. This aspect could be related to the fact that women often have access to a wider support network that includes other family members (sisters, daughters, etc) and friends as an alternative resource.³⁹

According to Lazarus and Folkman's theory, the way individuals cope with events such as the onset of a chronic illness can affect their health. In an initial assessment of the situation, it is determined whether it is perceived as a threat or as a challenge. If the situation is perceived as a threat, it may trigger a stress response. In a second assessment, the resources and abilities to cope with the situation and carry out a response are assessed. When the assessment of the situation and available resources is overwhelming, toxic stress is experienced, which can have serious effects on the individual's physical and mental health.⁴⁸ According to the results of the study, women perceive the available resources as more deficient than men, which, together with the external locus of control, may help us to better understand the difficulties they face in self-managing the disease.

Both genders evaluated the discussion groups and diabetes education positively, specifically because they had a space in which they could talk with people in similar situations about their concerns and their experience in diabetes self-management. There is evidence that patient groups can provide emotional support and understanding of the disease experience, as well as motivation regarding self-care practices.^{46,47}

Regarding interactions with health professionals, although they perceived their care as good, they felt that they did not have enough time during appointments to ask questions and express their concerns. They also considered that positive reinforcement was more useful than a pessimistic or alarmist attitude. The lack of time needed in primary care physicians' offices has been highlighted in previous studies.^{39,41} This time would be necessary for patients to ask diabetes-related questions, discuss their own experiences with T2DM, and seek emotional support.^{39,49} Of note, participants only mentioned their primary care physician in relation to their disease-related needs, but not primary care nurses. Primary care nurses, in fact, play a key role in empowering patients in their self-care.⁵⁰

The participants expressed the need to understand how T2DM originates and progresses and how they should modify their habits, aspects that agree with the studies of Andrade and Guinea.^{40,41} Beliefs related to the disease are an important factor in the daily practice of self-care and patient empowerment.⁴² Lack of understanding inevitably shifts the responsibility for care to health care professionals. This can lead to the development of paternalistic relationships between healthcare professionals and patients, rather than collaborative, patient-centered interaction. This is a critical issue, as recent research supports the relevance of patient involvement in personal and family decision-making and self-management, especially in the context of chronic disease.^{51–53}

This study has some limitations. First, the sampling strategy was not fully planned from the outset, as opportunistic rather than theoretical sampling had to be used. Second, there were difficulties in recruitment, so that the experiences of younger individuals with cardiovascular events could not be included. Finally, it was not possible to include variables related to socioeconomic level, a factor that influences self-management of the disease. The study also has strengths. First, it allowed us to observe the reality of self-care experiences in the focus groups through the discourse of the participants and their constructed realities. A wide range of discursive variability was captured, reflecting the cultural diversity of Spain and reaching data saturation. This variability is essential to avoid cultural bias in a country as diverse as Spain. Secondly, given the scarce evidence on this topic in the literature, this study can serve as a starting point for future research on specific differences in self-management among patients with T2DM.

Conclusion

Empowering patients to self-care is an important factor in improving health. The importance of understanding gender differences and barriers to self-care lies in the need to tailor healthcare and encourage patients to take care of their own health. This means empowering patients to act beyond gender roles and social expectations. This has important implications not only for clinical practice, but also for health policy and service development. First, there is a need to improve training programs for healthcare professionals to raise awareness of the relationship between gender and health. Health professionals must be able to tailor health information to the needs and experiences of each individual. The

primary care professional is the one who knows the patient best, making it essential to personalize care from the primary care center. It is important to work with the patient to identify the barriers they face in self-care, conduct a joint analysis of the social determinants affecting them, provide available resources at the center to minimize these obstacles, and help establish a support network with others facing similar challenges. Gender differences and underlying social determinants should be taken into account when developing health policies and services for people with T2DM. Given the gender differences highlighted in this study, it would also be essential for the entire family unit to understand and cooperate to optimize self-care among women living with T2DM.

Abbreviations

T2DM, type 2 diabetes mellitus; GP, general practitioner.

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Disclosure

The author reports no conflicts of interest in this work.

References

1. Baviera M, Santalucia P, Cortesi L, et al. Sex differences in cardiovascular outcomes, pharmacological treatments and indicators of care in patients with newly diagnosed diabetes: analyses on administrative database. *Eur J Intern Med.* 2014;25(3):270–275. doi:10.1016/j.ejim.2014.01.022
2. Virani SS, Alonso A, Aparicio HJ, et al. Heart disease and stroke statistics—2021 update. *Circulation.* 2021;143(8):e254–e743. doi:10.1161/CIR.0000000000000950
3. Strom Williams JL, Lynch CP, Winchester R, Thomas L, Keith B, Egede LE. Gender differences in composite control of cardiovascular risk factors among patients with type 2 diabetes. *Diabetes Technol Ther.* 2014;16(7):421–427. doi:10.1089/dia.2013.0329
4. The Emerging Risk Factors Collaboration. Diabetes mellitus, fasting blood glucose concentration, and risk of vascular disease: a collaborative meta-analysis of 102 prospective studies. *Lancet.* 2010;375(9733):2215–2222. doi:10.1016/S0140-6736(10)60484-9
5. Peters SAE, Huxley RR, Woodward M. Diabetes as risk factor for incident coronary heart disease in women compared with men: a systematic review and meta-analysis of 64 cohorts including 858,507 individuals and 28,203 coronary events. *Diabetologia.* 2014;57(8):1542–1551. doi:10.1007/s00125-014-3260-6
6. Peters SAE, Huxley RR, Woodward M. Diabetes as a risk factor for stroke in women compared with men: a systematic review and meta-analysis of 64 cohorts, including 775,385 individuals and 12,539 strokes. *Lancet.* 2014;383(9933):1973–1980. doi:10.1016/S0140-6736(14)60040-4
7. Chatterjee S, Peters SAE, Woodward M, et al. Type 2 diabetes as a risk factor for dementia in women compared with men: a pooled analysis of 2.3 million people comprising more than 100,000 cases of dementia. *Diabetes Care.* 2016;39(2):300–307. doi:10.2337/dc15-1588
8. Franch-Nadal J, Mata-Cases M, Vinagre I, et al. Differences in the cardiometabolic control in type 2 diabetes according to gender and the presence of cardiovascular disease: results from the econtrol study. *Int J Endocrinol.* 2014;2014:1–11. doi:10.1155/2014/131709
9. Ramírez-Morros A, Franch-Nadal J, Real J, Gratacòs M, Mauricio D. Sex differences in cardiovascular prevention in type 2: diabetes in a real-world practice database. *J Clin Med.* 2022;11(8):2196. doi:10.3390/jcm11082196
10. Flink L, Mochari-Greenberger H, Mosca L. Gender differences in clinical outcomes among diabetic patients hospitalized for cardiovascular disease. *Am Heart J.* 2013;165(6):972–978. doi:10.1016/j.ahj.2013.02.024
11. McCollum M, Hansen LB, Lu L, Sullivan PW. Gender differences in diabetes mellitus and effect on self-care activity. *Gen Med.* 2005;2(4):246–254. doi:10.1016/S1550-8579(05)80054-3
12. Wilkinson A, Whitehead L, Ritchie L. Factors influencing the ability to self-manage diabetes for adults living with type 1 or 2 diabetes. *Int J Nurs Stud.* 2014;51(1):111–122. doi:10.1016/j.ijnurstu.2013.01.006
13. Buil-Cosiales P, Gómez-García C, Cos X, Franch-Nadal J, Vlachos B, Millaruelo JM. Poor awareness among health care professionals about gender differences in the relationship between type 2 diabetes mellitus and cardiovascular disease. *Semergen.* 2020;46(2):90–100. doi:10.1016/j.semern.2019.10.002
14. Santalucia P, Pezzella FR, Caso V. Call for research on women on behalf of women stroke association. *Eur J Intern Med.* 2014;25(4):e52. doi:10.1016/j.ejim.2014.02.001
15. Baena-Diez JM, Peñafiel J, Subirana I, et al. Risk of cause-specific death in individuals with diabetes: a competing risks analysis. *Diabetes Care.* 2016;39(11):1987–1995. doi:10.2337/dc16-0614
16. Greco A, Steca P, Pozzi R, Monzani D, Malfatto G, Parati G. The influence of illness severity on health satisfaction in patients with cardiovascular disease: the mediating role of illness perception and self-efficacy beliefs. *Behav Med.* 2015;41(1):9–17. doi:10.1080/08964289.2013.855159

17. Spence J, Helmreich RL. *Masculinity & Femininity: Their Psychological Dimensions, Correlates, & Antecedents*. Austin: University of Texas Press; 1978.
18. Walters AJ. The phenomenological movement: implications for nursing research. *J Adv Nurs*. 1995;22(4):791–799. doi:10.1046/j.1365-2648.1995.22040791.x
19. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Heal Care*. 2007;19(6):349–357. doi:10.1093/intqhc/mzm042
20. Grey M, Knafl K, McCorkle R. A framework for the study of self- and family management of chronic conditions. *Nurs Outlook*. 2006;54(5):278–286. doi:10.1016/j.outlook.2006.06.004
21. Berenguera A, Fernández de Sanmamed MJ, Pons M, Pujol E, Rodríguez D, Saura S. *Escuchar, Observar y Comprender. Recuperando la narrativa en las ciencias de la salud. Aportaciones de la investigación cualitativa*. Inst Univ d'Investigació en Atenció Primària Jordi Gol (IDIAP J Gol); 2014.
22. Mays N. Qualitative research in health care: assessing quality in qualitative research. *BMJ*. 2000;320(7226):50–52. doi:10.1136/bmj.320.7226.50
23. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101. doi:10.1191/1478088706qp063oa
24. MacLean LM, Meyer M, Estable A. Improving accuracy of transcripts in qualitative research. *Qual Health Res*. 2004;14(1):113–123. doi:10.1177/1049732303259804
25. Rodríguez Sabiote C, Pozo Llorente T, Gutiérrez Pérez J. La triangulación analítica como recurso para la validación de estudios de encuesta recurrentes e investigaciones de réplica en Educación Superior. *Reli - Rev Electrónica Investig y Evaluación Educ*. 2014;12(2):1. doi:10.7203/relieve.12.2.4231
26. Gard MG, Kring AM. Sex differences in the time course of emotion. *Emotion*. 2007;7(2):429–437. doi:10.1037/1528-3542.7.2.429
27. Fernández C, Pascual JC, Soler J, Elices M, Portella MJ, Fernández-Abascal E. Physiological responses induced by emotion-eliciting films. *Appl Psychophysiol Biofeedback*. 2012;37(2):73–79. doi:10.1007/s10484-012-9180-7
28. Fugate JMB, Gouzoules H, Barrett LF. Separating production from perception: perceiver-based explanations for sex differences in emotion. *Behav Brain Sci*. 2009;32(5):394–395. doi:10.1017/S0140525X09990203
29. Kret ME, De Gelder B. A review on sex differences in processing emotional signals. *Neuropsychologia*. 2012;50(7):1211–1221. doi:10.1016/j.neuropsychologia.2011.12.022
30. Fischer A, LaFrance M. What drives the smile and the tear: why women are more emotionally expressive than men. *Emot Rev*. 2015;7(1):22–29. doi:10.1177/1754073914544406
31. Bandura A. *Auto-Eficacia: Cómo Afrontamos Los Cambios de La Sociedad Actual*. Desclée De Brouwer; 1999.
32. Pilisuk M, Montgomery MB, Parks SH, Acredolo C. Locus of control, life stress, and social networks: gender differences in the health status of the elderly. *Sex Roles*. 1993;28(3–4):147–166. doi:10.1007/BF00299278
33. McNaughton ME, Patterson TL, Smith TL, Grant I. The relationship among stress, depression, locus of control, irrational beliefs, social support, and health in alzheimer's disease caregivers. *J Nerv Ment Dis*. 1995;183(2):78–85. doi:10.1097/00005053-199502000-00003
34. Büyükkaya Besen D, Güntüsen N, Arda Sürücü H, Koşar C. Predictor effect of locus of control (LOC) on self-care activities and metabolic control in individuals with type 2 diabetes. *PeerJ*. 2016;4:e2722. doi:10.7717/peerj.2722
35. American Diabetes Association. 4. Lifestyle management: standards of medical care in diabetes—2018. *Diabetes Care*. 2018;41(Supplement_1):S38–S50. doi:10.2337/dc18-S004
36. Sluik D, Buijsse B, Muckelbauer R, et al. Physical activity and mortality in individuals with diabetes mellitus. *Arch Intern Med*. 2012;172(17):1285. doi:10.1001/archinternmed.2012.3130
37. Evert AB, Boucher JL, Cypress M, et al. Nutrition therapy recommendations for the management of adults with diabetes. *Diabetes Care*. 2014;37(Supplement_1):S120–S143. doi:10.2337/dc14-S120
38. Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycaemia in type 2 diabetes, 2015: a patient-centred approach. Update to a position statement of the American diabetes association and the European Association for the study of diabetes. *Diabetologia*. 2015;58(3):429–442. doi:10.1007/s00125-014-3460-0
39. Mathew R, Gucciardi E, De Melo M, Barata P. Self-management experiences among men and women with type 2 diabetes mellitus: a qualitative analysis. *BMC Fam Pract*. 2012;13(1):122. doi:10.1186/1471-2296-13-122
40. Andrade S, Antonio T, Cerezo AM. Creencias en salud de la persona que vive con diabetes. *Desarro científico Enferm*. 2012;20(8):255–260.
41. Campo Guinea N, Portillo MC. El automanejo de los pacientes con diabetes tipo 2: una revisión narrativa. *An Sist Sanit Navar*. 2013;36(3):489–504. doi:10.4321/S1137-66272013000300014
42. Cortez DN, Macedo MML, Souza DAS, et al. Evaluating the effectiveness of an empowerment program for self-care in type 2 diabetes: a cluster randomized trial. *BMC Public Health*. 2017;17(1):41. doi:10.1186/s12889-016-3937-5
43. Williams DR. The health of men: structured inequalities and opportunities. *Am J Public Health*. 2003;93(5):724–731. doi:10.2105/ajph.93.5.724
44. García-Calvente M, Mateo-Rodríguez I, Eguiguren A. El sistema informal de cuidados en clave de desigualdad. *Gac Sanit*. 2004;18(4):132–139. doi:10.1157/13062262
45. Lagarde M. Mujeres cuidadoras: entre la obligación y la satisfacción. In: *Congreso Internacional Sare 2003: Cuidar Cuesta: Costes y Beneficios Del Cuidado*. Emakunde; 2003.
46. Krmpotic CS, De Ieso LC. Los cuidados familiares: aspectos de la reproducción social a la luz de la desigualdad de género. *Rev Katálisis*. 2010;13(1):95–101. doi:10.1590/S1414-49802010000100011
47. Domínguez Mon A. Cuidados de sí y relaciones de género: trabajo en red en un grupo de personas que viven con diabetes (PVD) en un centro de atención primaria de la salud (CAP) en José León Suárez, Argentina. *Rev Ciencias Sociales*. 2015;42:133–154.
48. Folkman S, Lazarus RS. The relationship between coping and emotion: implications for theory and research. *Soc Sci Med*. 1988;26(3):309–317. doi:10.1016/0277-9536(88)90395-4
49. Ansari RM, Dixon JB, Browning CJ. Socio-ecological approach to self-management of type 2 diabetes: physical activity and dietary intervention. In: *Type 2 Diabetes*. InTech; 2013. doi:10.5772/56512
50. Talavera Pérez ML, Fontseré Casadesús AM, Raya Tena A. La enfermera de atención primaria: rol y responsabilidades. *Atención Primaria*. 2022;54(7):102345. doi:10.1016/j.aprim.2022.102345
51. González Mestre A. La autonomía del paciente con enfermedades crónicas: de paciente pasivo a paciente activo. *Enfermería Clínica*. 2014;24(1):67–73. doi:10.1016/j.enfcli.2013.11.005

52. Ryan P, Sawin KJ. The individual and family self-management theory: background and perspectives on context, process, and outcomes. *Nurs Outlook*. 2009;57(4):217–225.e6. doi:10.1016/j.outlook.2008.10.004
53. Jovell AJ, Navarro Rubio MD, Fernández Maldonado L, Blancafort S. Nuevo rol del paciente en el sistema sanitario. *Atención Primaria*. 2006;38(4):234–237. doi:10.1157/13092347

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