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Physicians' Perspectives on Health-Related Quality of Life and Mental Health Aspects of People with Type 2 Diabetes Mellitus: A Cross-Sectional Study in Jeddah, Saudi Arabia

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Aim: To explore the physicians' knowledge, awareness, and perspectives on HRQoL and mental health aspects of people with T2DM in Jeddah, Saudi Arabia.

Methods: A cross-sectional survey study was conducted over a three-month period (October to December 2022) on 54 physicians. Physicians were requested to respond to a 12-item researcher-designed, self-administered survey questionnaire that explored their perspectives regarding the importance of their patients' general, physical, and mental health aspects using the 12-item Short Form Health Survey Version 2 (SF-12v2).

Results: Overall, 85.2% of physicians were male, with almost two-thirds (64.8%) practising in one medical and more than two-thirds (35%.2%) in the surgical specialties. Most physicians (57.4%) were consultants, which was also reflected in both subgroup specialties (54.3% versus 63.2%, respectively). The majority of physicians (83.3%) asked their patients about their general health; however, only 18.5% responded positively to questions about emotional problems. There was a low positive response to questions relating to the emotional component, such as feeling "calm and peaceful" (38.9%) and "feeling a lot of energy" (35.2%). This was even lower (25.9%) for questions related to mental health.

Conclusion: Our study is a "call for action" for future well-designed, multidimensional, and multisectoral research studies that will help broaden knowledge about the magnitude of the current problem. This may improve overall general, physical, and mental health by enhancing patient level of care, adherence to health care plans, and reducing long-term complications.

Keywords: type 2 diabetes mellitus, health-related quality of life, mental health, physicians, perspectives, awareness

Introduction

Diabetes mellitus (DM) is the most chronic metabolic disorder and one of the fastest-growing global health emergencies of the 21st century, reaching alarming levels. Overall, type 2 diabetes mellitus (T2DM) accounts for the vast majority (over 95%) of DM cases worldwide and is usually associated with a high morbidity mortality, poor mental health and low levels of Health-Related Quality of Life (HRQoL).[1] Saudi Arabia is one of the Gulf Cooperation Countries (GCC) and Middle East and North African (NENA) region countries that already report very high age-adjusted comparative prevalence rates of DM, along with Pakistan and Egypt (18.7%, 30.8% and 20.9%, respectively) in 2021.[2] Conversely, when Saudi Arabia is compared to a country like Australia, the former prevalence rate of DM is almost triple. This is projected to reach 20.4% by 2030 in Saudi Arabia compared to only 7.4% in Australia.[2] This trend will be about the same by 2045 (21.4% in Saudi Arabia versus 8.0% in Australia), indicating the enormous current and future magnitude of DM-related problems in all countries, specifically Saudi Arabia.[2]

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A complex bidirectional relationship has been reported to exist between T2DM, HRQoL, and mental health, indicating that all three aspects interact and influence each other.[3–5] Evidence has also accumulated about the importance of evaluating HRQoL and mental health aspects in the day-to-day management of patients with diabetes. This includes early identification of predictors that relate to worse HRQoL and mental health aspects among all patients with T2DM, specifically those patients with T2DM-related complications.[6,7] The evidence also indicates that lifestyle changes can help prevent complications and improve the overall long-term management of T2DM.[8,9]

However, fewer studies were published that explored the knowledge, awareness, practices, and perspectives of physicians and/or other healthcare providers regarding the overall management of their patients with T2DM.[10–12] Furthermore, very few studies have explored physicians' perspectives regarding their patients' HRQoL and mental health, as well as the challenges and difficulties physicians meet during the regular healthcare of their patients with T2DM.[13,14]

Our present study aimed to explore the physicians' knowledge, awareness, and perspectives on their patients' HRQoL and mental health aspects among people with T2DM in Jeddah, Saudi Arabia.

Methods

Study Design and Participants

A cross-sectional survey was carried out over three-month periods (October to December 2022) on a convenience sample of 54 physicians in Jeddah, the second-largest city in Saudi Arabia. Physicians were recruited using the snowball sampling method (a recruitment technique in which research participants are asked to assist researchers in identifying other potential subjects) to explore their knowledge, awareness, and perspectives on HRQoL and mental health aspects of people with T2DM. All enrolled physicians practising in a public and/or private healthcare hospital in Jeddah that provided healthcare to patients diagnosed with T2DM from all medical, surgical specialties/subspecialties and family medicine physicians were eligible and invited to participate.

Only physicians who speak English, are licensed specialists in Jeddah, and regularly care for T2DM and/or T2DM-related complications as part of their regular practice were included.

Study's Procedures

At the beginning of the data collection processing, the researcher-designed and self-administered survey questionnaire was piloted and tested on a subsample to ensure the effectiveness, clarity, and accuracy of the questionnaire. After accepting the invitation of the principal investigator, physicians were sent an online link to their emails or phones that took them to an online page (through Microsoft Forms) that displayed a three-section form to be filled out by each physician. Physicians were first asked to consent to join the study and then given personal identification data. They were then requested to provide a response to a researcher-designed data collection form (through Microsoft Forms) regarding physicians' demographic characteristics, seniority level, length of experience per year, specialty, workplace, size of clinical practice per hospital beds, average number of patients per week, percentage of patients who have most of their diabetes care in the physicians' practice place (Table 1). In addition, physicians were asked to report their perceptions regarding encouraging patients to attend diabetic educational seminars, type of secondary healthcare support referral, how they base their decisions and types of used protocols/guidelines, types of challenges met in practice and their perspectives on preferable approaches to improve patients' mental health and quality of life (Table 2). Finally, physicians were then requested to answer a 12-item researcher-designed, self-administered survey questionnaire that explored their perspectives regarding the importance of their patients' general, physical, and mental health aspects. The questions were derived with modification, from the well-known 12-item Short Form Health Survey Version 2 (SF-12v2) questionnaire that consists of 12 questions that measure eight health domains to assess physical and mental health (General Health (GH), Physical Functioning (PF), Role Physical (RP), Body Pain (BP), Vitality (VT), Social Functioning (SF), Role Emotional (RE), and Mental Health (MH)). In general, Questions (Q) from 1 to 5 and 8 are related to the physical component, and Q6, Q7, Q9, Q10, Q11, and Q12 are related to the mental component in the survey (Table 3).

Table 1 Physicians' Demographic Characteristics

		Medical (n=35)			Surgical (n=19)			Total (n=54)	
		N	%	Row %	N	%	Row %	N	%
Gender	Female	6	17.1	75	2	10.5	25	8	14.8
	Male	29	82.9	63	17	89.5	37	46	85.2
Level of seniority	Specialist	16	45.7	69.6	7	36.8	30.4	23	42.6
	Consultant	19	54.3	61.3	12	63.2	38.7	31	57.4
Length of experience per years	< 5	7	20	87.5	1	5.3	12.5	8	14.8
	5–10	5	14.3	55.6	4	21.1	44.4	9	16.7
	> 10	23	65.7	62.2	14	73.7	37.8	37	68.5
Speciality	Internal medicine	11	31.4	100	N/A			11	20.4
	General surgery	N/A			4	21.1	100	4	7.4
	Endocrinology	4	11.4	100	N/A			4	7.4
	Nephrology	5	14.3	100				5	9.3
	Neurology	4	11.4	100				4	7.4
	Ophthalmology	1	2.9	100				1	1.9
	Family medicine	4	11.4	100				4	7.4
	Podiatry	N/A			2	10.5	100	2	3.7
	Anaesthesia	2	5.7	100	N/A			2	3.7
	Psychiatry	4	11.4	100				4	7.4
	Vascular surgery	N/A			13	68.4	100	13	24.1
Type of workplace	Public hospital	7	20	41.2	10	52.6	58.8	17	31.5
	Private hospital	22	62.9	81.5	5	26.3	18.5	27	50
	Public and private hospital	6	17.1	60	4	21.1	40	10	18.5
Size of clinical practice per hospital beds	< 100	7	20	100	0	0	0	7	13
	100–500	22	62.9	75.9	7	36.8	24.1	29	53.7
	> 500	6	17.1	33.3	12	63.2	66.7	18	33.3
Average patients per week	5–10	1	2.9	33.3	2	10.5	66.7	3	5.6
	> 10	34	97.1	66.7	17	89.5	33.3	51	94.4
Percentage of patients have most of their diabetes care in physicians' practice place	< 30	4	11.4	66.7	2	10.5	33.3	6	11.1
	30–90	24	68.6	68.6	11	57.9	31.4	35	64.8
	> 90	7	20	53.8	6	31.6	46.2	13	24.1

Data Entry and Statistical Analysis

The data were collected through Microsoft Forms and then extracted into Microsoft Excel. All descriptive and analytical statistics were conducted using SPSS version 28 (IBM SPSS Statistics for Windows, Armonk, NY, USA) software.

Table 2 Physicians' Practice Characteristics (Seniority, Experience, Specialty, Working Place, Practice Volume) and Other Related Questions

		Medical (n=35)			Surgical (n=19)			Total (n=54)	
		N	%	Row %	N	%	Row %	N	%
Encourage the patients to attend diabetic seminar	No	20	57.1	62.5	12	63.2	37.5	32	59.3
	Sometimes	8	22.9	66.7	4	21.1	33.3	12	22.2
	Yes	7	20	70	3	15.8	30	10	18.5
Type of secondary healthcare support referral	Elective care only	0	0	0	0	0	0	0	0
	Emergency and elective care	11	31.4	73.3	4	21.1	26.7	15	27.8
	Emergency care only	5	14.3	45.5	6	31.6	54.5	11	20.4
	Mental health care only	19	54.3	67.9	9	47.4	32.1	28	51.9
	All	0	0	0	0	0	0	0	0
Decision based on any protocol or guidelines	No	10	28.6	90.9	1	5.3	9.1	11	20.4
	Sometimes	4	11.4	57.1	3	15.8	42.9	7	13
	Yes	21	60	58.3	15	78.9	41.7	36	66.7
Type of used protocol	Local	2	8	66.7	1	5.6	33.3	3	5.6
	International	11	44	64.7	6	33.3	35.3	17	31.5
	Both	12	48	52.2	11	61.1	47.8	23	42.6
Type of challenges	Limited time	15	42.9	71.4	6	31.6	28.6	21	38.9
	Lack of resources	9	25.7	50	9	47.4	50	18	33.3
	Difficult to find proper care support	7	20	70	3	15.8	30	10	18.5
	All	4	11.4	80	1	5.3	20	5	9.3
Preferable strategies to improve patients' mental health and quality of life	Individual support	3	8.6	100	0	0	0	3	5.6
	Community-based support	5	14.3	83.3	1	5.3	16.7	6	11.1
	Hospital-based support	5	14.3	45.5	6	31.6	54.5	11	20.4
	Referral to psychiatrist and cognitive therapy	6	17.1	85.7	1	5.3	14.3	7	13
	All	16	45.7	59.3	11	57.9	40.7	27	50

Descriptive statistics were presented as frequencies and percentages. The non-parametric continuous variable was described as the median and Interquartile Range (IQR), defined as the 25^{th} to 75^{th} percentile of the associated variable.

Results

Physicians' Demographic Characteristics

In this study, the response rate was 100%, and the overall median age of physicians was 55 years (51–59). Overall, (85.2%) of the studied physicians were males, who predominated in both the medical (82.9%) and surgical (89.5%)

Table 3 Physicians' Perspectives Regarding Their Patients' Mental Health and Health-Related Quality of Life

		Medical (n=35)			Surgical (n=19)			Total (n=54)	
		N	%	Row %	N	%	Row %	N	%
Q1- Do you ask your diabetic patient about their general health?	No	1	2.9	100	0	0	0	1	1.9
	Sometimes	6	17.1	75	2	10.5	25	8	14.8
	Yes	28	80	62.2	17	89.5	37.8	45	83.3
The following questions are about their activities they might do during a typical day. Does their health now limit them in these activities? If so, do you ask them about these questions?									
Q2- Moderate activities such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.	No	8	22.9	66.7	4	21.1	33.3	12	22.2
	Sometimes	15	42.9	57.7	11	57.9	42.3	26	48.1
	Yes	12	34.3	75	4	21.1	25	16	29.6
Q3- Climbing several flights of stairs.	No	11	31.4	78.6	3	15.8	21.4	14	25.9
	Sometimes	14	40	60.9	9	47.4	39.1	23	42.6
	Yes	10	28.6	58.8	7	36.8	41.2	17	31.5
During the past 4 weeks, have you asked your diabetic patient if they had any of the following problems with their work or other regular daily activities as a result of their physical health due to suffering from Type 2 Diabetes Mellitus?									
Q4- Accomplished less than they would like.	No	10	28.6	76.9	3	15.8	23.1	13	24.1
	Sometimes	15	42.9	62.5	9	47.4	37.5	24	44.4
	Yes	10	28.6	58.8	7	36.8	41.2	17	31.5
Q5- Were limited in the kind of work or other activities.	No	10	28.6	90.9	1	5.3	9.1	11	20.4
	Sometimes	16	45.7	59.3	11	57.9	40.7	27	50
	Yes	9	25.7	56.3	7	36.8	43.8	16	29.6
During the past 4 weeks, have you asked your diabetic patient if they had any of the following problems with their work or other regular daily activities as a result of any emotional problems due to suffering from Type 2 Diabetes Mellitus (such as feeling depressed or anxious)?									
Q6- Accomplished less than they would like.	No	8	22.9	61.5	5	26.3	38.5	13	24.1
	Sometimes	19	54.3	61.3	12	63.2	38.7	31	57.4
	Yes	8	22.9	80	2	10.5	20	10	18.5
Q7- Did they work or do activities less carefully than usual?	No	10	28.6	71.4	4	21.1	28.6	14	25.9
	Sometimes	20	57.1	62.5	12	63.2	37.5	32	59.3
	Yes	5	14.3	62.5	3	15.8	37.5	8	14.8
Q8- During the past 4 weeks, have you asked your diabetic patient about how much did the pain interfere with their normal work due to suffering from T2DM?	No	10	28.6	100	0	0	0	10	18.5
	Sometimes	13	37.1	68.4	6	31.6	31.6	19	35.2
	Yes	12	34.3	48	13	68.4	52	25	46.3
These questions relate to how your diabetic patient was feeling during the past 4 weeks.									

(*Continued*)

Table 3 (Continued).

		Medical (n=35)			Surgical (n=19)			Total (n=54)	
		N	%	Row %	N	%	Row %	N	%
Q9- Do you ask them: have you felt calm and peaceful?	No	7	20	53.8	6	31.6	46.2	13	24.1
	Sometimes	13	37.1	65	7	36.8	35	20	37
	Yes	15	42.9	71.4	6	31.6	28.6	21	38.9
Q10- Do you ask them: did you have a lot of energy?	No	10	28.6	62.5	6	31.6	37.5	16	29.6
	Sometimes	11	31.4	57.9	8	42.1	42.1	19	35.2
	Yes	14	40	73.7	5	26.3	26.3	19	35.2
Q11- Do you ask them: have you felt down-hearted and blue?	No	13	37.1	56.5	10	52.6	43.5	23	42.6
	Sometimes	13	37.1	76.5	4	21.1	23.5	17	31.5
	Yes	9	25.7	64.3	5	26.3	35.7	14	25.9
Q12- During the past 4 weeks, have you asked your diabetic patient about how much of the time has their physical health or emotional problems affected by Type 2 Diabetes Mellitus and interfered with their social activities (like visiting friends, relatives, etc.)?	No	12	34.3	52.2	11	57.9	47.8	23	42.6
	Sometimes	10	28.6	83.3	2	10.5	16.7	12	22.2
	Yes	13	37.1	68.4	6	31.6	31.6	19	35.2

subgroups, respectively (Table 1). Almost two-thirds (64.8%) of physicians were practising in one of the medical specialties, whereas 35.1% were in the surgical specialties (Table 1).

Physicians' Practice Characteristics (Seniority, Experience, Specialty, Working Place, Practice Volume)

Most physicians were identified to be at the consultant level (57.4%), which was applied to both subgroups (54.3% and 63.2%), respectively. The majority (85.2%) of physicians had ≥ 5 years of field experience (Table 1). The most common specialties in the medical group were internal medicine (31.4%), followed by nephrology (14.3%) and endocrinology (11.4%), whereas for the surgical specialties, it was vascular surgery (68.4%) and general surgery (21.1%) followed by podiatry (10.5%) (Table 1). Only, (11.4%) were practising family medicine or psychiatry (Table 1). Half of all physicians were working in the private sector, and more than four-fifths (87%) were in hospitals with a bed capacity of ≥ 100 (Table 1). The vast majority (94.4%) of physicians reviewed > 10 patients per week and claimed that > 24.1% of their patients had most of their diabetes care in their practice (Table 1).

Physicians' Perspectives Regarding Patients' Education, Referral to Mental Health, Protocols/Guidelines, Challenges Met, Suggestions for Improving Patients' Mental Health and HRQoL

When asked about their encouragement of patients to attend health educational seminars, only 18.5% answered "Yes" they do, whereas a higher percentage (59.3%) answered "No" (Table 2). With regards to referral to mental health care, only 51.9% of all physicians claimed they do (more likely in medical than surgical specialties, 67.9% versus 32.1%, respectively) (Table 2). Almost two-thirds (66.7%) of physicians answered "Yes" that they base their decision on protocols/guidelines, whereas the other third answered "sometimes" or "No" (consisting of 13% and 20.3%, respectively) (Table 2). International protocols and/or guidelines were used more than local ones (31.5% versus 5.6%), and the common pattern was to base decisions on referrals that had established international and local protocols and/or guidelines (42.6%) (Table 2) from other disciplines. Two-thirds of physicians indicated that their main challenges were limited to

the time allocated for patients' visits in daily practice as well as a lack of resources (Table 2). Finally, when asked about their perspectives on preferred approaches to improve patients' mental health and HRQoL, only 20.4% indicated the need for hospital-based support, 13% referred to psychiatrist and cognitive therapy, 11.1% community-based support, 9.3% individualised support and almost half of physicians indicated the need for all of the previous approaches (Table 2).

Physicians' Perspectives Regarding Their Patient's Mental Health and HRQoL, Including Physical and Emotional Health Problems

The details of physicians' responses to the 12 questions in the questionnaire are demonstrated in (Table 3). The majority of physicians (83.3%) asked their patients about their general health (Q1); however, when it came to asking patients about activities that they might do during a typical day and related limitations in these activities (Q2), like moving a table, pushing a vacuum cleaner, bowling, or playing golf; only 29.6% of the studied physician answered "Yes" (Table 3). Similar percentages (31.5%), (31.5%) and (29.6%) were reported to questions (3, 4, and 5) respectively, regarding climbing several flights of stairs, accomplishing less than they would like and limitations in the kind of work or other activities (Table 3).

In contradiction, when physicians were questioned about asking their patients, during the past four weeks, as to whether they had problems with their work or other regular daily activities as a result of any emotional issues (such as feeling depressed or anxious), only 18.5% responded positively to (Q6) related to accomplishing less than they would like, and 14.8% asked patients about working or doing activities less carefully than usual (Q7) (Table 3). However, a higher percentage (46.3%) was noted regarding asking patients how much the pain interfered with their patients' normal work (Q8) (Table 3).

Low percentages were also noted with regards to questions related to the role emotional components, including feelings such as feeling "calm and peaceful" (Q9) and "feeling a lot of energy" (Q10), as only 38.9% and 35.2%, respectively, answered "Yes" to these two questions (Table 3). A much lower percentage (25.9%) related to mental health (ie, Q11 on feeling down-hearted and blue) (Table 3) was noted. Finally, 35% of physicians answered "Yes" to the questionnaire's last question (Q12) related to the social role among patients with T2DM (Table 3).

Discussion

Numerous studies, including work from a cross-sectional survey from our research group evaluating HRQoL and mental health aspects among people with T2DM, with and without diabetes-related complications in Jeddah, Saudi Arabia, explored the burden of T2DM on HRQoL and mental health aspects among people with T2DM.[6–9] Our study investigated the burden of T2DM on HRQoL and mental health aspects from a physicians' perspective. It is one of the very few studies that has attempted to examine the awareness, practices and perspectives of physicians who care for people with T2DM by exploring the importance of assessing HRQoL and mental health aspects among patients during daily management. This was performed by using a researcher-designed data collection form and a 12-item researcher-constructed, self-administered survey questionnaire.

In view of the unavailability of a validated and reliable tool that is specially constructed to explore the physicians' perspectives, we opted to use a self-constructed tool, similar to other researchers who used different self-constructed research tools to explore knowledge, awareness, practices and perspectives of physicians and/or other health care providers regarding the overall management of their patients with T2DM; and also to other investigators who specifically explored physicians' perspectives regarding their patients' HRQoL and mental health.[10–17] Furthermore, the present study uses a research instrument based on or inspired by the same instrument (SF-12v2) we used previously to examine the influence of T2DM on HRQoL and mental health aspects among people with T2DM, specifically those with T2DM-related complications which was found to be one of the most common and validated instruments to evaluate HRQoL and mental health in patients with T2DM by our research group.[18]

The current study involved males and females; however, overall, a higher percentage of males was noted (85.2% versus 14.8%), with most physicians experienced at a consultant level (Table 1). It also included physicians in the public and private sectors, as both sectors usually provide services to Saudi patients (Table 1). Most of the physicians were

practising in well-sized hospitals and were, therefore, managing considerable numbers of patients with diabetes, with or without related complications, who were receiving their care in the same facility (Table 1).

Evidence is growing regarding the negative impacts of T2DM on several aspects of general, physical, HRQoL and mental health aspects of people with T2DM.[19–21] On the other end, mental health problems adversely affect many aspects of patients' daily lives with regard to their general, physical and self-adherence to a diabetes care plan.[20] Given this, healthcare providers, specifically physicians, are supposed to be fully aware of their expected roles in early diagnosis of mental health issues that may affect diabetes care and HRQoL among their patients, and vice versa, regardless of their specialty.

Several clinical practical guides for healthcare professionals working with people with T2DM who experience emotional difficulties have offered strategies and tools for recognising and having conversations about emotional problems with patients and providing appropriate support.[19–23] In this regard, the Saudi Diabetes Clinical Practice Guidelines (SDCPG) recommended referral to a mental health provider in certain circumstances like anxiety, depressive symptoms, fears of hypoglycaemia, eating disorder, suspected mental illness, cognitive impairment, impaired diabetes self-care, and before and after obesity surgery.[23] However, very few studies explored the perspectives of physicians about their norms in this regard and their perspectives about challenges and difficulties met during the day-to-day management of their patients, including their attitude towards referring their patients to mental health services, health education and support groups activities in the same health facilities, using protocols/guidelines and suggestions for improving patients' mental health, if any; in addition to, exploring physicians' perspectives regarding exploring their patients' HRQoL mental health aspects.[14] Recognition and understanding of physicians' challenges when treating diabetes patients' physical, social and emotional difficulties are essential for developing programmatic interventions.[14]

Positive findings from our study include physicians' awareness when using different protocols and/or guidelines to base their decisions on managing people with T2DM in their practices, as more than two-thirds (66.7%) of studied physicians answered "Yes" that they do (Table 2). In contrast, with regards to referral to mental health care, only 51.9% of all physicians answered "Yes" in that they are more likely in the medical than the surgical specialties (67.9% versus 32.1%, respectively) (Table 2). Also, when explicitly asked about their perspectives on preferred approaches to improve patients' mental health and HRQoL, only 13% would consider referral of their patients to psychiatry and cognitive therapy services (Table 2).

With regard to physicians' responses to the 12 questions regarding their patients' mental health and HRQoL, physicians did better in the physical domain compared to the mental one (Table 3). Among the 12 answers, the best positive response of physicians was on Q1, which was associated with the physical health-related domain. Here, the majority of physicians (83.3%) answered "Yes" when asked their patients about their general health (Table 3). This was followed by Q8, relating to pain interference with their patients' normal work, as 46.3% of physicians indicated that they did ask about that (Table 3).

In contrast, the worst responses were on the vitality questions of the mental domain that relate to emotional problems (Q6 and Q7); only 18.5% and 14.8% answered "Yes" (Table 3). The responses to the remaining questions were suboptimal as the percentages of those physicians who answered "Yes" were modest, ranging between 25.9% and 38.9% (Table 3). Overall, the lower percentages were more associated with their response to the mental domain questions (Table 3). With regard to the difficulties met, two-thirds of physicians indicated that the main challenges they face in daily practice are limited time allocated for patients' visits and lack of resources (Table 2).

Several causes may be responsible for these results, such as the importance of HRQoL and mental health not being commonly taught. Physicians need to be better educated in this area to decrease this gap. In addition, we should also focus on the availability of educational courses and/or include the importance of HRQoL and mental health among aspects and review of patients with T2DM in current guidelines.[10–13] This may highlight the need to evaluate patients during clinic hours.

Strengths and Limitations

The main strength of our study is that all of the invited physicians agreed to participate. This study is also among the few that explored the physicians' knowledge, awareness, and perspectives on HRQoL and mental health aspects of people

with T2DM.[12–14,17] Another strength is the inclusion of a self-constructed tool based on the SF-12v2 health survey, which covered HRQoL and mental health domains. The simplicity of the questions may help reduce the risk of bias and variability in the answers and interpretations. The studied sample involved good numbers and representation of senior and experienced physicians who were practising in various related medical and surgical specialties and not limited to one specialty. This ensured a more comprehensive representation of caring physicians from different related medical and surgical specialties practising in public and private sector hospitals.

Nevertheless, the present study has some limitations. One of the main limitations of our study is that we used an unvalidated self-reported questionnaire for data collection, which could be subjected to a potential source of bias, however, it was specifically built for the purpose of the study based on a thorough systematic/literature review. Secondly, it is a descriptive cross-sectional survey study on a convenience sample (a larger sample size would have been beneficial to improve this study), and it was limited to physicians working in one city of Saudi Arabia, which may limit generalisability. Despite these limitations, which are commonly demonstrated with these types of study designs relating to this topic, it has provided the essential characteristics and preliminary evidence and has identified gaps that will be essential for improvement and future planning.[13–15,17]

Conclusions

Findings from our study demonstrate several gaps in knowledge as well as suboptimum practices towards HRQoL and mental health aspects among studied physicians during their regular care for people with T2DM. Therefore, there is a greater need for more extensive, well-designed, multidimensional and multisectoral research studies in this area. This will help accumulate greater knowledge relating to physicians and all healthcare providers' perspectives. It will also identify the magnitude of the current problems as well as challenges met during regular healthcare of people with T2DM; specifically, in dealing with the physical and emotional burden on T2DM in these patients. Such studies will consequently outline implementation plans for mitigating the current difficulties and challenges met during regular health care of people with T2DM. Moreover, implementing regular workshops to raise awareness and knowledge about the importance of HRQoL and mental health aspects among physicians dealing with T2DM patients is needed.

Abbreviations

T2DM, Type 2 Diabetes Mellitus; HRQoL, Health-Related Quality of Life; SF-12v2, The 12-item Short Form Health Survey Version 2; SA, Saudi Arabia, AUS, Australia; GCC, Gulf Cooperation Council.

Data Sharing Statement

The current data will be available by requesting the corresponding author.

Ethics Declarations

All procedures performed in this study involving human participants were by the ethical standards of the institutional and national research committee and with the 1964 helsinki Declaration and its later amendments. This study was approved by the Unit of Biomedical Ethics at the Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia (Reference No 324-22). Informed consent was obtained from all of the participants included in this study.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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