

Annex 1. QTelemeDiab Questionnaire

QTelemeDiab

Instrument for assessing patient's acceptability, desirability, and adherence to telemedicine programs in diabetes care

SECTION 1. TELEMEDICINE IN DIABETES MELLITUS

Q1. Have you ever used telemedicine?

1. Yes
2. No

Q2. If you have answered "yes" at question Q1, which technical category of telemedicine have you used? (select all that apply)

1. Videoconference
2. Telephone call to a call-center
3. E-mail or real-time chat
4. A specific form integrated on the website of a healthcare provider
5. A mobile app for smartphones
6. Telemonitoring of various parameters (i.e., blood pressure, heart rate, heart rhythm, glycaemia)
7. Other technical options

Q3. If you have answered "yes" at question Q1, would you use telemedicine in the future?

1. Yes
2. No

Q4. If you have answered "no" at question Q1 or Q3, would you accept to use telemedicine when your physician would recommend it to you?

1. Yes
2. No

Q5. Which are the instances of telemedicine for which you would accept to use it in the communication with your physician? (select all that apply)

1. Transmitting details about your health status to your physician
2. Transmitting details about your medical history to your physician
3. Transmitting medical information (glycaemia, height, weight, blood pressure)
4. Transmitting your medical documents (medical referral letters) to your physician
5. Receiving medical advice regarding lifestyle and medication
6. Receiving your medical prescription
7. Receiving your medical referral letter
8. Receiving your referrals to medical tests or consultations

Q6. Which is the most appropriate answer for you for each sentence, on a scale from 1 to 5, where 1 means total disagreement ("not at all"), 3 means a neutral response, while 5 means complete agreement ("very much")?

		points				
		1	2	3	4	5
a)	I would like to use telemedicine for consultations in a regular epidemiological context					
b)	I would like to use telemedicine for consultations in an unfavourable epidemiological context (for example, in a pandemic)					
c)	I think that a consultation through telemedicine services can increase the efficacy of the patient-physician interaction					
d)	I am interested to learn to use a telemedicine mobile app for smartphones					
e)	I think that an app for telemonitoring of various parameters (blood pressure, heart rate, heart rhythm, glycaemia, etc.) is useful					
f)	I trust the confidentiality of medical data and the security of using a telemedicine service					
g)	I think that the medical act has a lower quality when it is performed through telemedicine					

Q7. How useful do you consider the following options in the context of a telemedicine consultation? Choose the most appropriate answer for you for each statement, on a scale from 1 to 5, where 1 means total disagreement ("not important at all"), 3 means a neutral response, while 5 means complete agreement ("very important").

		points				
		1	2	3	4	5
a)	Transmitting details about your health status to your physician					
b)	Transmitting details about your medical history to your physician					
c)	Transmitting medical information (glycaemia, height, weight, blood pressure)					
d)	Transmitting your medical documents (medical referral letters) to your physician					
e)	Receiving medical advice regarding lifestyle and medication					
f)	Receiving your medical prescription					
g)	Receiving your medical referral letter					
h)	Receiving your referrals to medical tests or consultations					

Q8. How important do you think technology is in the management of diabetes mellitus? Choose the most appropriate answer for you for each sentence, on a scale from 1 to 5, where 1 means total disagreement ("not at all"), 3 means a neutral response, while 5 means complete agreement ("very much").

		points				
		1	2	3	4	5
a)	Technology in medicine helps improve the quality of life of patients with diabetes mellitus					
b)	Telemedicine can help patients in following the recommendations of their physician					
c)	Consultations performed through telemedicine are timesaving for patients					
d)	Consultations performed through telemedicine bring benefits to patients located at a greater distance from their physician					
e)	Telemedicine reduces the risk of infection in a regular epidemiological context					

f)	Telemedicine reduces the risk of infection in an unfavourable epidemiological context (pandemic)					
g)	Consultations performed through telemedicine contribute to the achievement of an improved glycaemic control due to a closer patient-physician relationship					
h)	Telemedicine can contribute to the trust of the patient in the self-management of his own disease due to the possibility of receiving more frequent recommendations regarding the insulin doses, the therapeutic attitude in complications etc.					
i)	Telemedicine services are useful due to the possibility of receiving accurate and updated information regarding various medical topics (COVID-19, nutrition, prevention of certain conditions etc.)					

Q9. What type of online medical consultation would you prefer? Choose the most appropriate answer for you for each sentence, on a scale from 1 to 5, where 1 means total disagreement ("not at all"), 3 means a neutral response, while 5 means complete agreement ("very much").

		points				
		1	2	3	4	5
a)	Videoconference consultation					
b)	Electronic consultation through email or real-time chat					
c)	Consultation through an app in which the patient uploads medical documents and details her/his symptoms and, afterwards, the physician evaluates the case and submits medical recommendations					
d)	Periodic therapeutic counselling through audio, video, or text-based mobile apps					
e)	Therapeutic counselling through phone calls (through a call-centre)					
f)	Telemonitoring of glycaemic levels					
g)	Telemonitoring of blood pressure and heart rate					

SECTION 2. DEMOGRAPHIC AND SOCIO-ECONOMIC INFORMATION

Q10. What is your age? _____ years

Q11. Specify your gender:

1. Female
2. Male

Q12. Where do you live?

1. Rural area
2. Urban area

Q13. What is your economic status?

1. Freelancer
2. Employee
3. Retired
4. Student
5. Homemaker

Q14. What is your highest level of education?

1. No formal schooling
2. Primary school
3. Professional school
4. High school
5. University
6. Post-university studies
7. Master's Degree / Doctoral Degree

Q15. What is the total income of your family in a month?

1. Very low
2. Low
3. Average
4. High
5. Very high
6. I would prefer not to answer this question

Q16. Which of the following statements describes your internet access the best?

1. You have internet access multiple times per day
2. You have internet access once per day
3. You do not have internet access

Q17. What types of devices do you use the most during a regular day?

1. PC
2. Laptop
3. Tablet
4. Smartphone
5. Mobile phone
6. None of the before mentioned devices

SECTION 3. MEDICAL INFORMATION ABOUT THE MANAGEMENT OF DIABETES MELLITUS

Q18. What type of diabetes mellitus do you have?

1. Type 1 diabetes mellitus
2. Type 2 diabetes mellitus
3. Other forms of diabetes mellitus

Q19. When have you been diagnosed with diabetes mellitus?

1. Less than 1 year ago
2. 1-5 years ago
3. 6-10 years ago
4. More than 10 years ago

Q20. What type of antidiabetic treatment are you currently on?

1. Only diet
2. Oral antidiabetic drugs
3. Oral and injectable non-insulin antidiabetic drugs
4. Oral antidiabetic drugs and insulin
5. Only insulin
6. Insulin pump

Q21. How often do you measure your glycaemic levels?

1. Never
2. Once every few months
3. Once every few weeks
4. Once per week
5. Once per day
6. Multiple times per day

Q22. What type of devices do you use to monitor your glycaemic levels?

1. A glucometer accompanied by writing down the result in a diabetes journal/notebook
2. A glucometer without writing down the result
3. Continuous glucose monitors
4. I only measure my glycaemic levels through a laboratory
5. I never measure my glycaemic levels

Q23. Have you ever been admitted to the hospital due to complications of diabetes mellitus?

1. Yes, due to a very increased glycaemic level
2. Yes, due to a hypoglycaemia
3. Yes, due to another complication
4. No, I haven't

Q24. What is the most recently measured result of your HbA1c (glycated haemoglobin)? _____

Q25. How often do you check the level of your HbA1c (glycated haemoglobin)?

1. Once every 3 months
2. Once every 6 months
3. Once a year
4. Once every few years
5. Never

Q26. In how many days during a regular week do you perform at least 30 minutes of physical exercise (walking, riding a bicycle, gardening, other activities)?

1. 5-7 days
2. 3-4 days
3. 1-2 days
4. I don't exercise for at least 30 minutes

Q27. In how many days during a regular week do you believe you have a healthy diet, according to the recommendations of your physician?

1. 5-7 days
2. 3-4 days
3. 1-2 days
4. I don't follow the recommendations related to a healthy diet

Instructions for operators

- The QTelemeDiab score is the sum of Q1 – Q9 individual scores
- The telemedicine desirability sub-score is the sum of Q6, Q7, Q8 (minimum score:24, maximum score:120)
- The telemedicine acceptability sub-score is the sum of Q1, Q2, Q4, Q5 (minimum score:2, maximum score: 25)
- The telemedicine adherence sub-score is the sum of Q3, Q9 (minimum score:8, maximum score: 40)
- The sub-scores are not proportional. Thus, to compare sub-scales the percentage from the scale's maximum should be used, not the absolute score obtained.
- Q1, Q3 and Q4 are dichotomous questions, which should be scored 5 points for YES and 1 point for NO
- Q2 and Q5 are multiple choice items, which should be scored with one point for each checked item (Q2 maximum 7 points; Q5 maximum 8 points)
- Q6-Q9 should be scored for each sub-question with 1 to 5 points according to the responder's option. Q6.g. should be scored on a reverse scale ("Very much" – 1 point respectively "not at all" – 5 points)
- Section 2 and Section 3 are not components of the QTelemeDiab score. The items from section 2 and 3 should be used only to assess the QTelemeDiab score according to different patient clusters.