
SLEEPING HABITS AMONG ADULTS LIVING WITH DIABETES: UNDERSTANDING TO DEVELOP BETTER INTERVENTIONS TO PREVENT COMPLICATIONS ASSOCIATED WITH DIABETES

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INTRODUCTION

- Among adults living with type 1 and type 2 diabetes, an inadequate sleep duration and poor sleep quality are both associated with poor glycemic control (Lee et al., 2017; Reutrakul et al., 2016).
- Poor glycemic management can cause complications (Diabetes Canada, 2018).
- It is important to identify the factors that are associated with the behavior before developing behavior change interventions.
- Few studies have identified the beliefs on sleep, especially among specific populations such as adults living with diabetes.

OBJECTIVE OF THE STUDY

- To identify the beliefs on 3 healthy sleep habits among adults (18-64 years) living with diabetes (type 1 and type 2) and adults without diabetes:
 1. Avoiding screen use (television, cellphone/smartphone and/or laptop/tablet) in bed
 2. Avoiding caffeine, alcohol and cigarettes within 4 hours of going to bed
 3. Having a regular bedtime and wake up time (more or less 20-30 minutes of difference from day to day) even on weekends (regular sleep schedule)

METHODS

- Participants were recruited from mid-January to mid-March.
- Participants had to answer a Web-based questionnaire of 10 open-ended questions.
 - Advantages and disadvantages
 - Positive and negative emotions
 - Individuals in the entourage who would approve or not behavior adoption
 - Individuals in the entourage who adopt or not the behavior
 - Barriers and facilitating factors
- A qualitative content analysis was conducted and validated by two other people who have experience in such analyses.

PATIENT AND PUBLIC INVOLVEMENT

- We chose a qualitative study and a questionnaire with open-ended questions to let adults with diabetes and those without diabetes express themselves.
- There were 6 versions of the Web-based questionnaire (one for each healthy sleep habit and versions for adults living with diabetes and those without diabetes).
- Participants could choose which version of the questionnaire they wanted to complete based on the healthy sleep habit they wanted to improve in order to respect patients' preferences and explore which of the 3 healthy sleep habits seemed more problematic among this population.

RESULTS (1)

- Response rate: 91.7%
- Characteristics of participants (n = 154)
 - Mean age: 34.5 years (18-64 years)
 - 79.2% of women
 - 56 adults living with diabetes (type 1: 56.4% and type 2: 43.6%)
 - 53.7% had a diabetes diagnosis since more than 10 years
 - Among adults living with type 2 diabetes, 87.5% reported taking medication to control their diabetes

RESULTS (2)

- Questionnaires selected
 - Screen use in bed: 47.4%
 - Adults living with diabetes: 57.1%
 - Regular sleep schedule: 33.1%
 - Adults living with diabetes: 32.1%
 - Caffeine, alcohol and cigarettes before bedtime: 19.5%
 - Adults living with diabetes: 10.7%

RESULTS (3)

- Main advantage of the 3 healthy sleep habits: would improve sleep.
 - “Easier to fall asleep (31 years old man with type 1 diabetes, questionnaire on screen use in bed)”
 - “Sleep deeper (26 years old woman with type 1 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - “More rested (39 years old woman with type 2 diabetes, questionnaire on regular sleep schedule)”

RESULTS (4)

- Disadvantages specific to each healthy sleep habit.
 - “Less entertainment (29 years old woman with type 1 diabetes, questionnaire on screen use in bed)”
 - “No little glass of wine at dinner! (47 years old woman without diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - “Less time to recover during weekends by sometimes sleeping during the day (39 years old woman with type 2 diabetes, questionnaire on regular sleep schedule)”

RESULTS (5)

- Positive emotions associated with the 3 healthy sleep habits.
 - “Impression of calm [of NO screen use in bed] (30 years old woman with type 1 diabetes, questionnaire on screen use in bed)”
 - “Well-being [of NO caffeine, alcohol and cigarettes before bedtime] (54 years old man with type 2 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - “Patience (38 years old man with type 1 diabetes, questionnaire on regular sleep schedule)”

RESULTS (6)

- Negative emotions associated with the 3 healthy sleep habits.
 - “Anxiety [of NO screen use in bed] (41 years old woman with type 2 diabetes, questionnaire on screen use in bed)”
 - “Less pleasure associated with the consumption these substances (35 years old woman with type 1 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - “Less freedom (38 years old woman with type 2 diabetes, questionnaire on regular sleep schedule)”

RESULTS (7)

- Individuals who would approve or not the adoption of the 3 healthy sleep habits.
 - My partner would approve: “My partner because he knows I am sensitive to sleep variations and if I sleep less, it can affect my mood (21 years old woman without diabetes, questionnaire on regular sleep schedule)”
 - My friends would disapprove: “My friends who are contacting me or using social media (22 years old woman without diabetes, questionnaire on screen use in bed)”
 - My parents, especially my mother, would approve: “My mom (26 years old woman with type 1 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”

RESULTS (8)

- Individuals who adopt or not the 3 healthy sleep habits.
 - My partner does not adopt: “My partner in the first place (37 years old man with type 1 diabetes, questionnaire on screen use in bed)”
 - My friends do not adopt: “Pretty much all my friends (39 years old woman with type 2 diabetes, questionnaire on regular sleep schedule)”
 - My parents adopt [NO screen use in bed]: “My parents (24 years old woman with type 1 diabetes, questionnaire on screen use in bed)”

RESULTS (9)

- Barriers to the adoption of the 3 healthy sleep habits.
 - Habit of using my screens in bed: “Habit too ingrained (29 years old woman with type 1 diabetes, questionnaire on screen use in bed)”
 - Having social activities in the evening: “Going to social events/dinners/parties (39 years old woman with type 1 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - Having too many tasks to do in the evening: “Not enough time to do everything I would like (38 years old man with type 1 diabetes, questionnaire on regular sleep schedule)”

RESULTS (10)

- Facilitating factors of the adoption of the 3 healthy sleep habits.
 - Putting my electronic devices outside of my bedroom: “Not bringing my tablet in bed (41 years old woman with type 2 diabetes, questionnaire on screen use in bed)”
 - Drinking caffeine-free and alcohol-free beverages: “Drink decaffeinated coffee instead (26 years old woman with type 1 diabetes, questionnaire on caffeine, alcohol and cigarettes before bedtime)”
 - Better time management: “Better time management (31 years old man without diabetes, questionnaire on regular sleep schedule)”

DISCUSSION (1)

- Screen use in bed seems to be more problematic among adults living or not with diabetes.
- Participants perceived that adopting the healthy sleep habits would improve their sleep, but their adoption was associated with many negative emotions (stress, anxiety, fear).
- The behavior and opinion of the partner would be particularly important.
- Participants thought that few people in their entourage adopt the healthy sleep habits, except for the regular sleep schedule.

DISCUSSION (2)

- Participants perceived many barriers to the adoption of the healthy sleep habits, especially for screen use in bed and caffeine, alcohol and cigarettes before bedtime.
- Participants identified many facilitating factors of the healthy sleep habits that can be useful to develop behavioral interventions to promote sleep (removing triggers of the unhealthy behavior, having alternatives to the unhealthy behavior, using reminders, time management and social support).

LESSONS LEARNED

- The use of a Web-based questionnaire with open-ended questions seems to be a good way to let adults with and without diabetes express themselves.
- The qualitative study allowed us to identify things we, scientists, had not thought about.
 - A few adults with diabetes mentioned that they need their screens in bed to check their glucose levels at night: “Have to wake up in the middle of the night because of my glucose levels to see where they are (21 years old woman with type 1 diabetes, questionnaire on screen use in bed)”.



THANK YOU!
QUESTIONS?

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