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ORAL PRESENTATION

Correlation of sleep to glycemic control: A cross-sectional study conducted at GluCare.Health showcasing the importance of continuous sleep monitoring

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DISCLOSURE

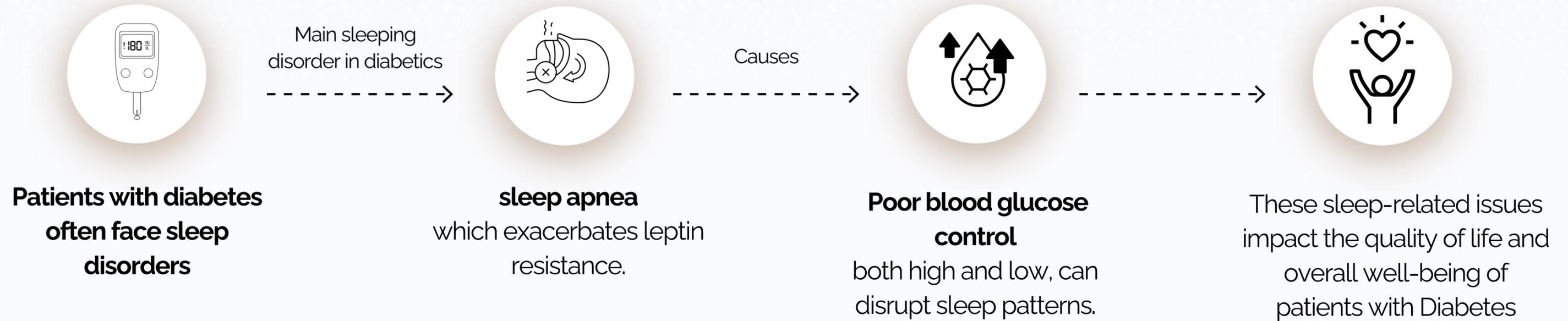
No Disclosures

AGENDA

- 1 Introduction
- 2 Objective
- 3 Methodology
- 4 Results and Discussion
- 5 Conclusion
- 6 Acknowledgment
- 7 References

Diabetes and Sleep Disorders

- Diabetes mellitus is a chronic health concern with factors like aging, modern lifestyle habits, and **improved diagnosis contributing to its growth.**

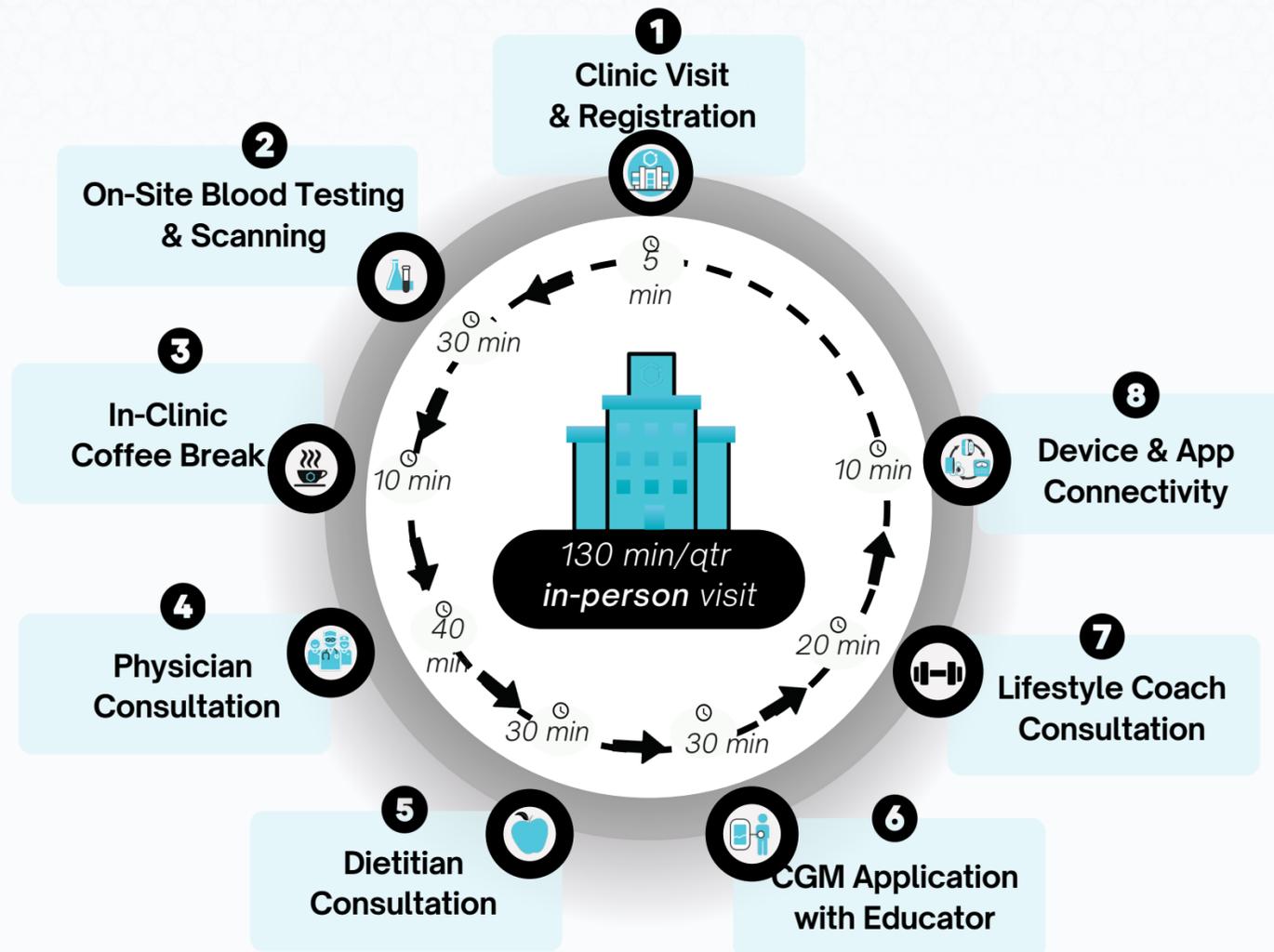


Unfortunately, the majority of **traditional care providers do not measure or track sleep data** despite the availability of sleep trackers and remote monitoring platforms.

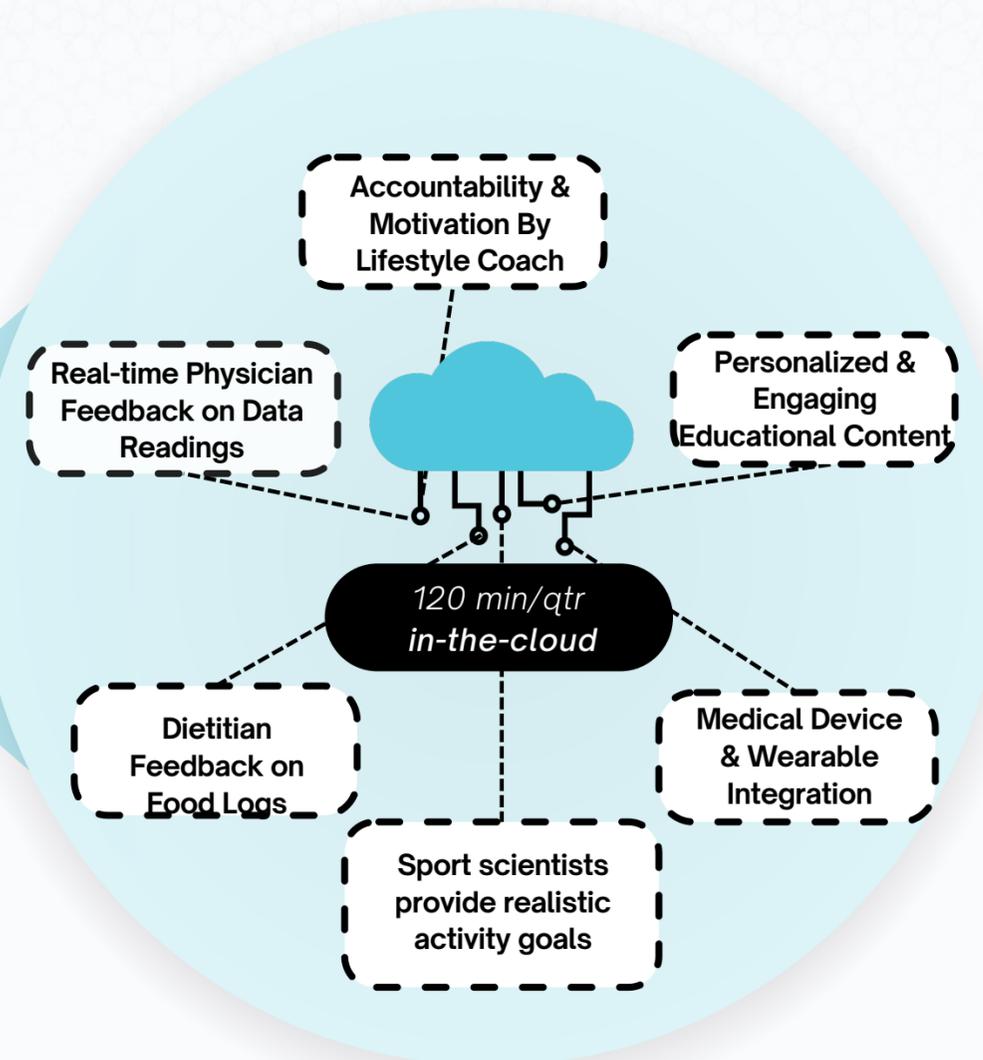


GluCare.Health Hybrid Care Model

OFFLINE JOURNEY



ONLINE JOURNEY

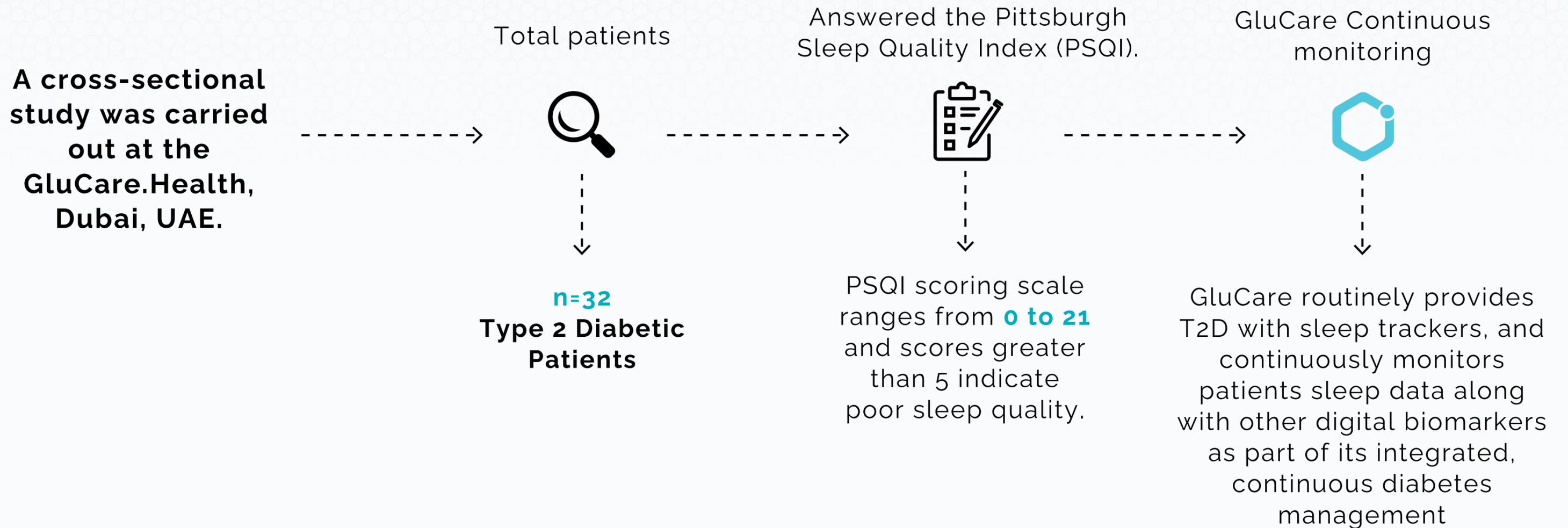


Aims and Objectives

01

The aim of this research is to examine the relationship between glycemic control in Type 2 diabetics and sleep duration along with quality of sleep.

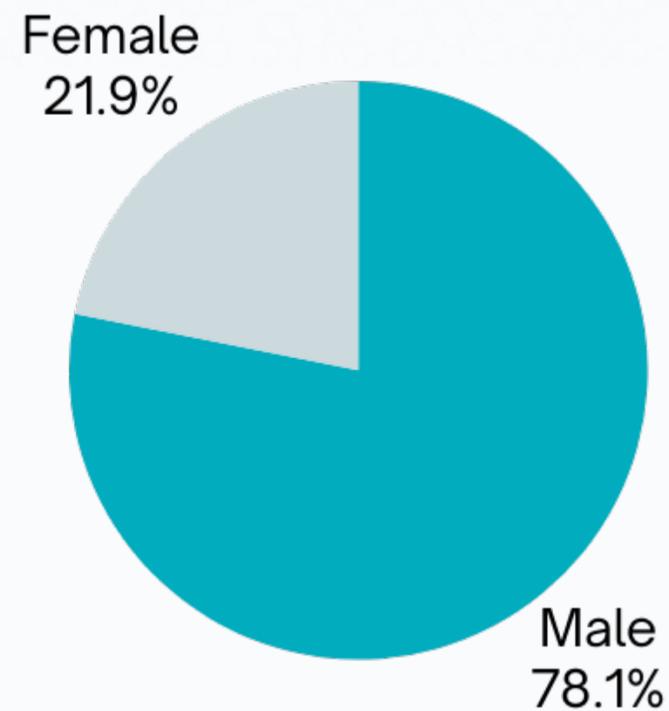
Methodology



Results

Demographics and Characteristics

Participants were mostly males (78.1%) with a mean age of 49.34 ± 11.2 years. Mean BMI was 28.15 ± 4.53 kg/m², and mean duration of diabetes was 8.99 ± 9.35 years.



Variable	Mean \pm SD
Age (in years)	49.34 ± 11.2
Last HbA1c measurement	7.04 ± 1.68
Weight (in kg)	82.48 ± 12.14
BMI	28.15 ± 4.53
Diabetes Duration (years)	8.99 ± 9.35

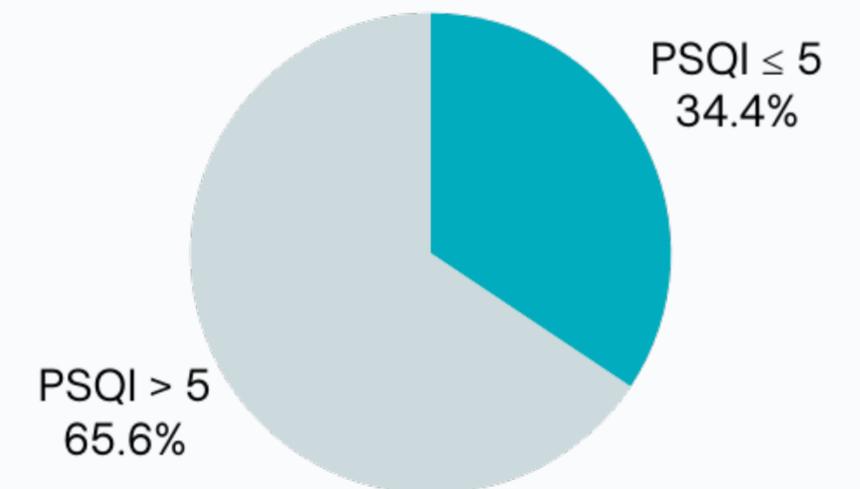
Results

Pittsburgh Sleep Quality Index (PSQI) Results

The mean PSQI score was 7.91 ± 4.5 . In the present study, poor sleep quality was reported in 65.6% of participants.

Variable	Mean \pm SD
Global PSQI Score	7.91 ± 4.5
Total sleep duration calculated	6.21 ± 1.26
Sleep duration reported by the patient	5.87 ± 1.21

→ Scores greater than 5 indicate poor sleep quality.



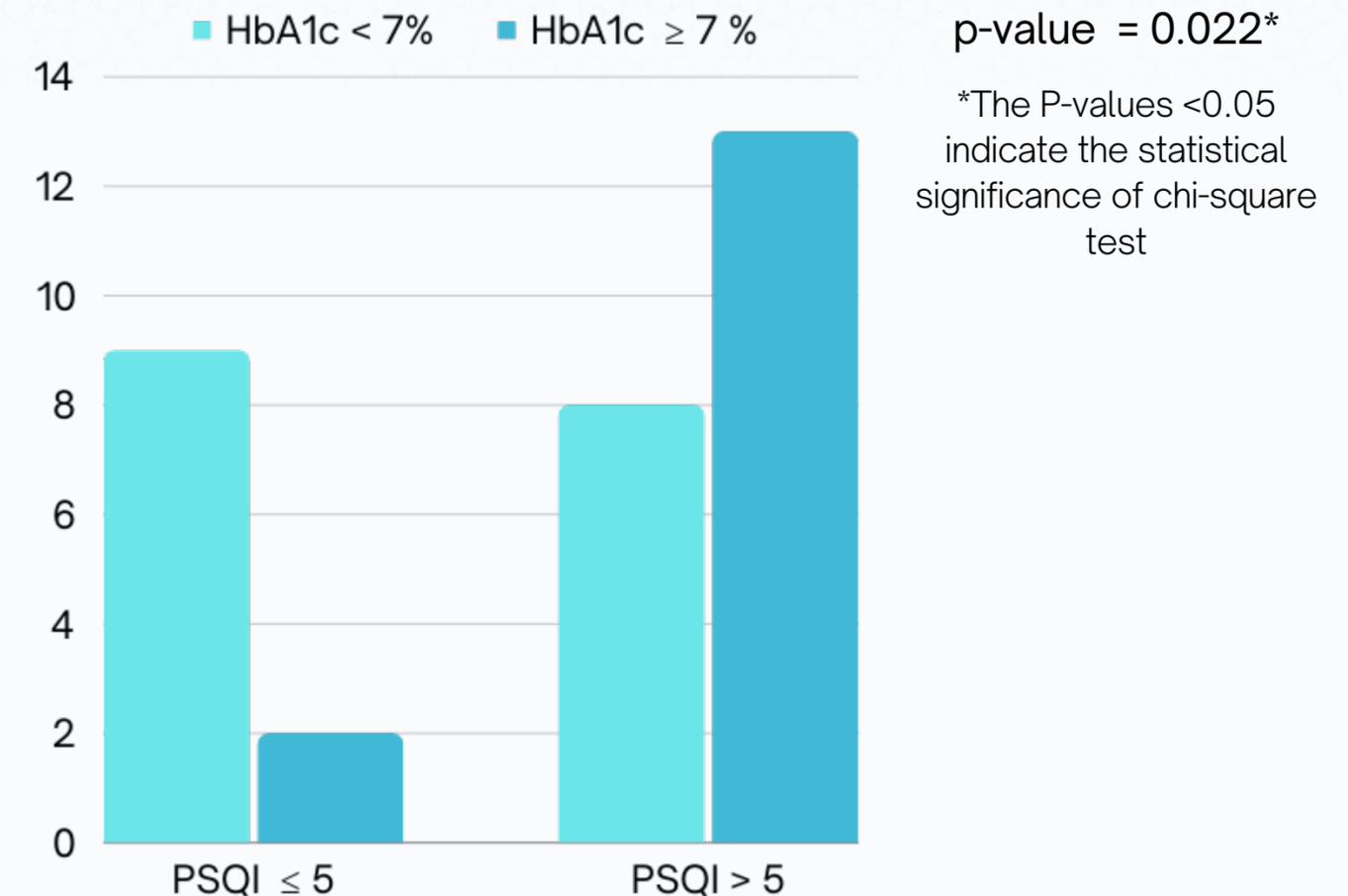
Results

Correlation of the PSQI and levels of HbA1c (%)

In the present study, poor sleep quality was reported in 65.6% of participants. Patients with better sleep quality had lower HbA1c levels (6.18%) compared to individuals with poorer sleep quality (7.48%) (p=0.022).

Variable	HbA1c Mean ± SD	p-value
PSQI ≤ 5	6.18 ± 1.14	0.034*
PSQI > 5	7.48 ± 1.75	

*The P-values <0.05 indicate the statistical significance of One-way ANOVA test



Results

Correlation between the PSQI score and Diabetes Duration

Patients with poor sleep quality (PSQI >5) had longer diabetes durations compared to patients with good sleep quality (PSQI ≤ 5)

Variable	Diabetes Duration Mean ± SD	p-value
PSQI ≤ 5	5.08 ± 5.05	0.004*
PSQI > 5	11.04 ± 10.49	

*The P-values <0.05 indicate the statistical significance of One-way ANOVA test

Results

Distribution of subjects according to the PSQI and Gender

Gender differences were evident, with more males having poorer sleep quality than females, suggesting gender-related variations in sleep patterns within this population (p=0.012).

PSQI Global Score	Male		Female		P-value
	n	%	n	%	
PSQI ≤ 5	10	40%	1	34.4%	0.012*
PSQI > 5	15	60%	6	65.6%	

*The P-values <0.05 indicate the statistical significance of chi-square test

Conclusions

In summary, this research underscores

- 1** the substantial prevalence of poor sleep quality among Type 2 diabetic patients and its impact on glycemic control.
- 2** It highlights the need for healthcare providers to consider sleep assessment, the self-tracking and monitoring of sleep data and tailored interventions as integral components of diabetes management to improve patient outcomes and overall well-being.

Discussion



Causing Factor

Poor sleep Quality is a risk factor for the development of obesity and T2DM



Lifestyle Component

Sleep is one of the key lifestyle components in the management of Type 2 diabetes



Follow-ups and monitoring

We need incorporate sleep into consultations and follow up



Future Research

Studies investigating the beneficial effects on the management of Type 2 diabetes are limited

GluCare x ŌURA - Health data insights taken to a whole new level



TECHNOLOGY

Meta[bolic] partners with ŌURA to integrate continuous monitoring to its clinical platforms

GluCare.Health and Zone.Health will incorporate Oura Ring into their programming, taking an innovative, new approach to integrated care delivery

ŌURA

Our partnership provides Diabetic Patients guidance and monitoring throughout their care management:

- Record sleep, activity, stress, and Heart Rate.
- Ability to integrate their data into the Meta[bolic] portal (for eligible patients).

References

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- American Diabetes Association Professional Practice Committee. 4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes-2024. *Diabetes Care*. 2024 Jan 1;47(Suppl 1):S52-S76. doi: 10.2337/dc24-S004. PMID: 38078591; PMCID: PMC10725809.
- Antza C, Kostopoulos G, Mostafa S, Nirantharakumar K, Tahrani A. The links between sleep duration, obesity and type 2 diabetes mellitus. *J Endocrinol*. 2021 Dec 13;252(2):125-141. doi: 10.1530/JOE-21-0155. PMID: 34779405; PMCID: PMC8679843.

Thank you for listening!

Questions?