

Patient Perceptions of Service Satisfaction in a Telehealth Diabetes Education Service: A Mixed Method Study

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KEC NC (Diabetes)
26-27th May 2025





Background

1. COVID-19 pandemic
2. Telehealth service is recommended
3. Previous clinical studies +ve

Objective

Aim to examine patients' perceptions of the telehealth diabetes education service through a 360-degree evaluation approach, measuring **structure, process and outcomes.**



Study Criteria

01 Convenience sampling



02 Inclusive criteria

Referred by Endocrinologists or Diabetes
nurses

Agreed with installation of 14-day
Continuous Glucoses monitoring sensor
(CGMS) or having regular Home Blood
Glucose Monitoring (HBGM)

Age > 18 years old and being a full member
of HA Go app

03 Exclusion criteria

Diagnosed of Psychiatric illness

Refusal to installation of CGM sensor or
irregular HBGM



Method

A mixed-methods was employed to conduct preliminary evaluation about the impact of tele-health service.

Three perspectives of evaluation.

① Patients' perspective:

Patient satisfaction questionnaire. This questionnaire consisted of 16 items designed to evaluate service satisfaction.

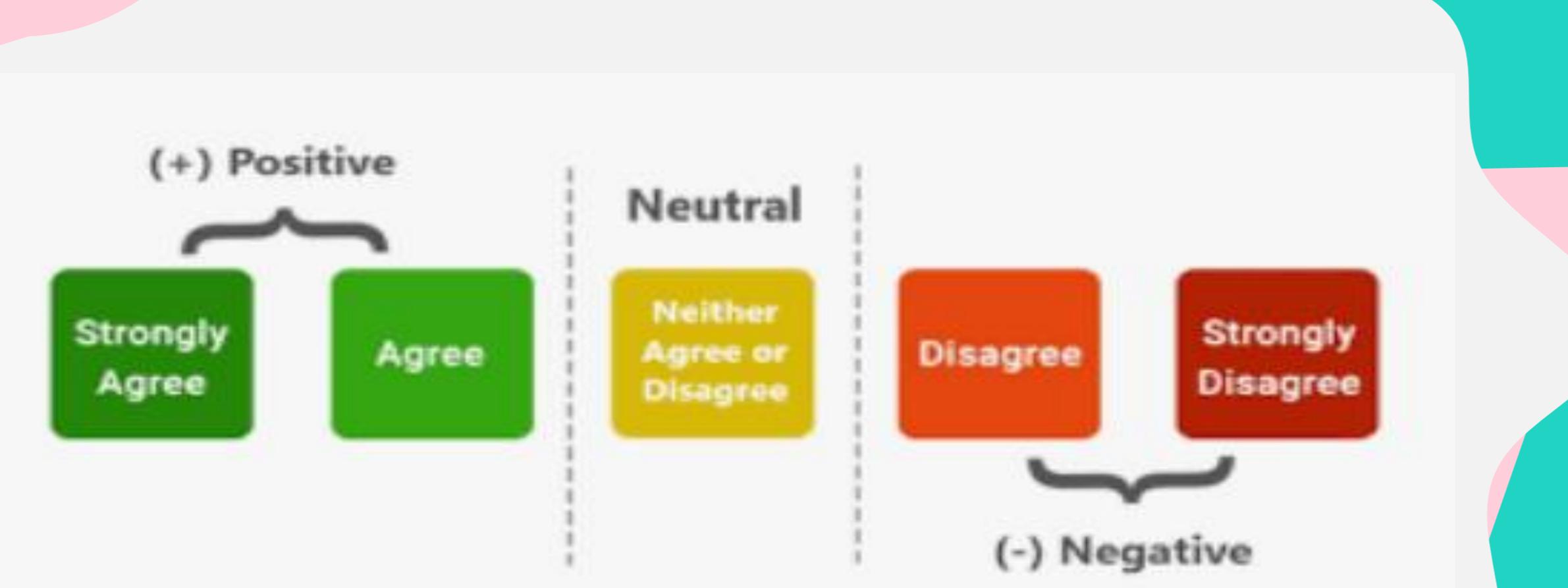
② Applicators' perspective:

Reflective journal kept by the two nurses who conducted the tele-health service.

③ Clinical service outcome perspective:

Collection of pre-post clinical data for comparison.

Satisfaction Rating



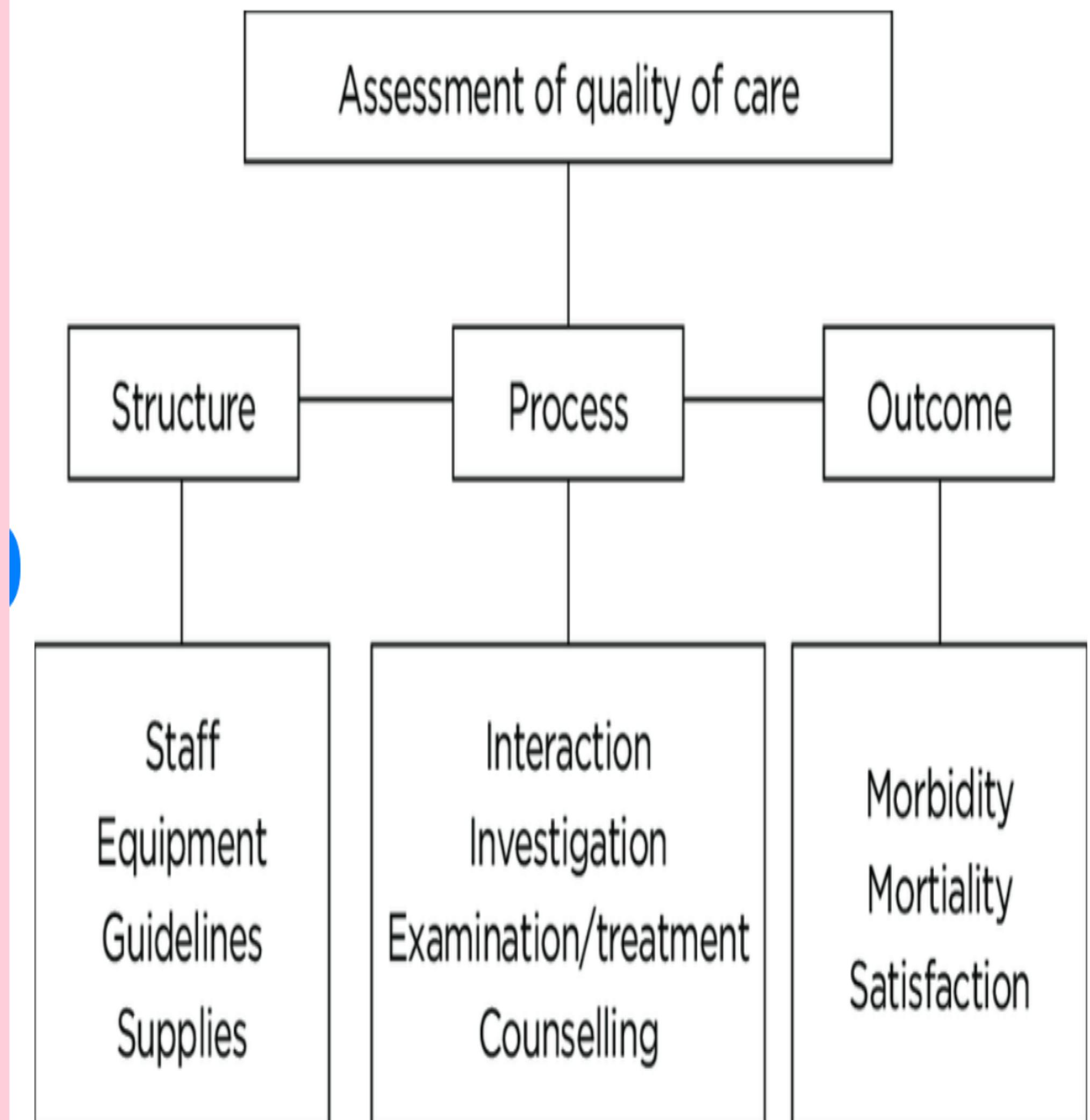
Subjects rated their satisfaction on a Likert scale from 1 to 5:

- 1 indicates "Strongly agree"
- 2 indicates "Agree"
- 3 is "Neutral"
- 4 represents "Disagree"
- 5 represents "Strongly disagree"

Donabedian's Model of Evaluation

The content of questionnaire was designed and validated by the Diabetes Care Centre at Queen Elizabeth Hospital to evaluate the quality of a tele diabetes education service.

- ✓ items 1-4 assess the **structure** domain
- ✓ items 5-9 assess the **process** domain
- ✓ items 10-14 assess the **outcome** domain
- ✓ item 15 evaluates overall satisfaction with the telehealth diabetes education service on a scale from 0% to 100%
- ✓ item 16 allows respondents to suggest areas for improvement or provide comments



The Donabedian model for assessment of quality of care (Donabedian 1988)

Implementation

- Verbal consent was obtained
- Continuous Glucose Monitoring (CGM) reports were automatically uploaded into the healthcare portal / Home Blood Glucose Monitoring (HBGM) reports were faxed to Centre
- Zoom link was received by HA Go app
- Individualized tele diabetes education was delivered via Zoom: the interpretation of CGM reports or HBGM reports and the tailor-made DM education were focused.
- Patient satisfaction survey would be sent to the subjects by email after completion of the tele diabetes service
- Subjects' physical parameter results (such as BW, BMI, HbA1c, FBG, Cholesterol, HDL, LDL, TG, and eGFR result) before and after the tele diabetes service were obtained. Pre data: 2 to 4 weeks before the service; post-data: 4 to 8 weeks after the service

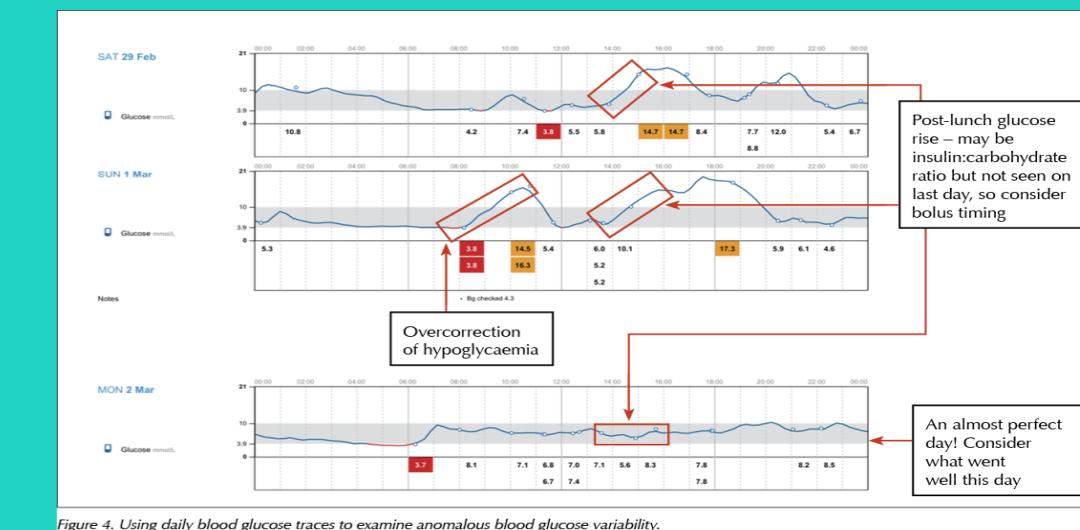
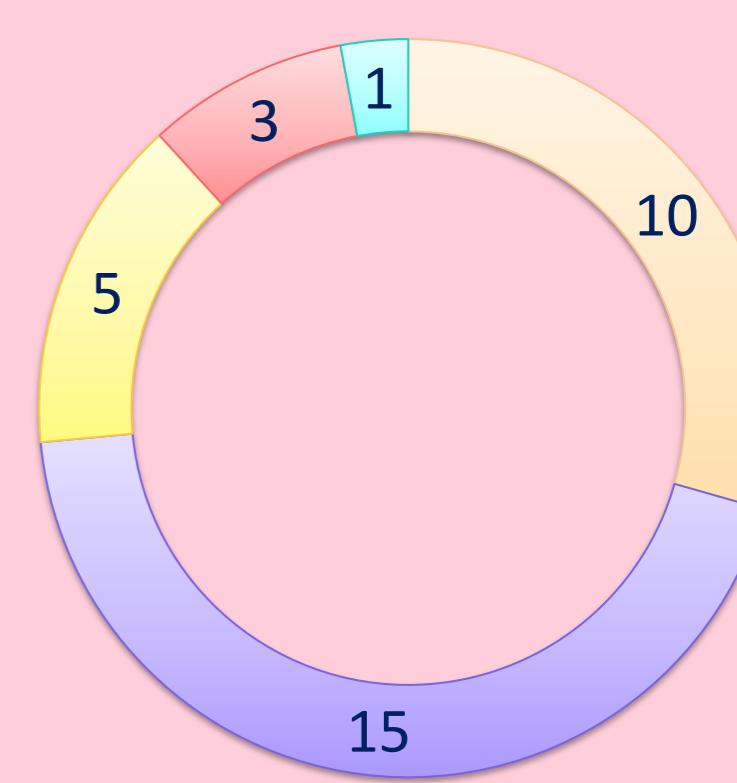
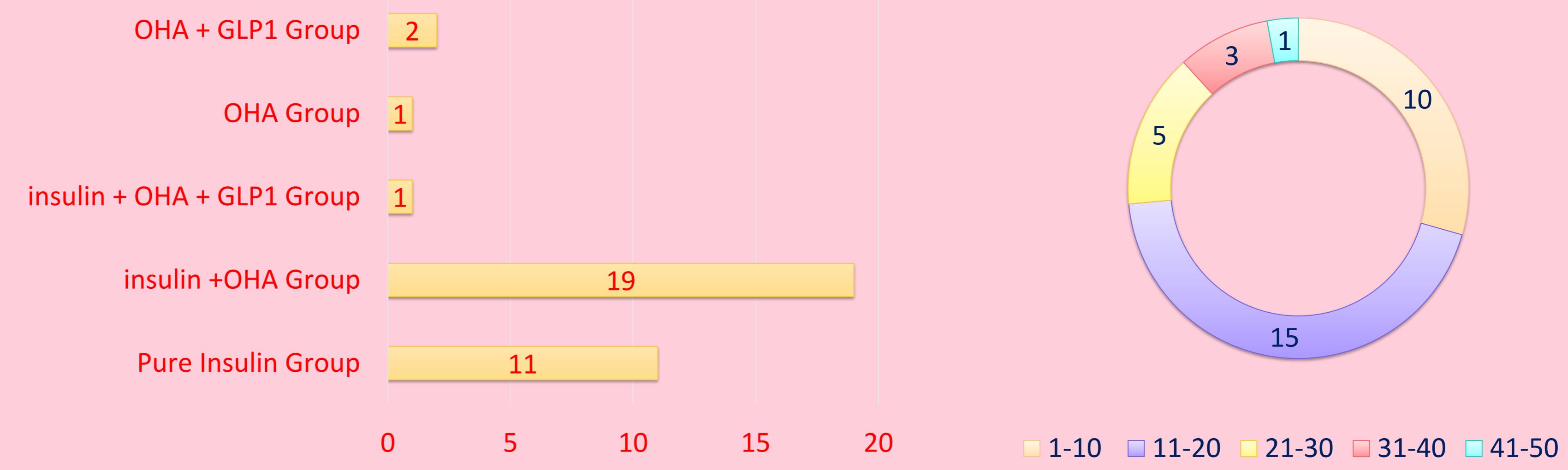
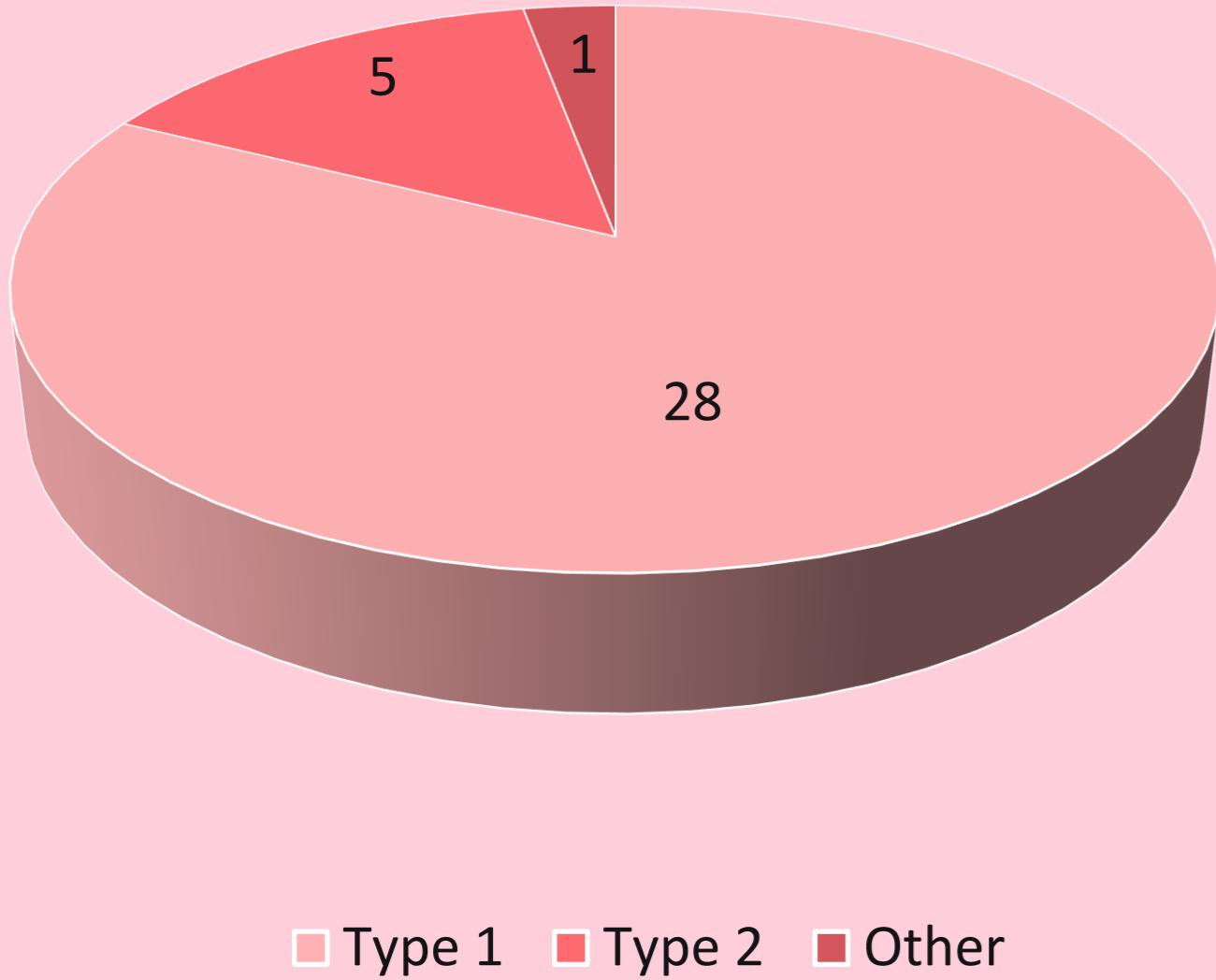
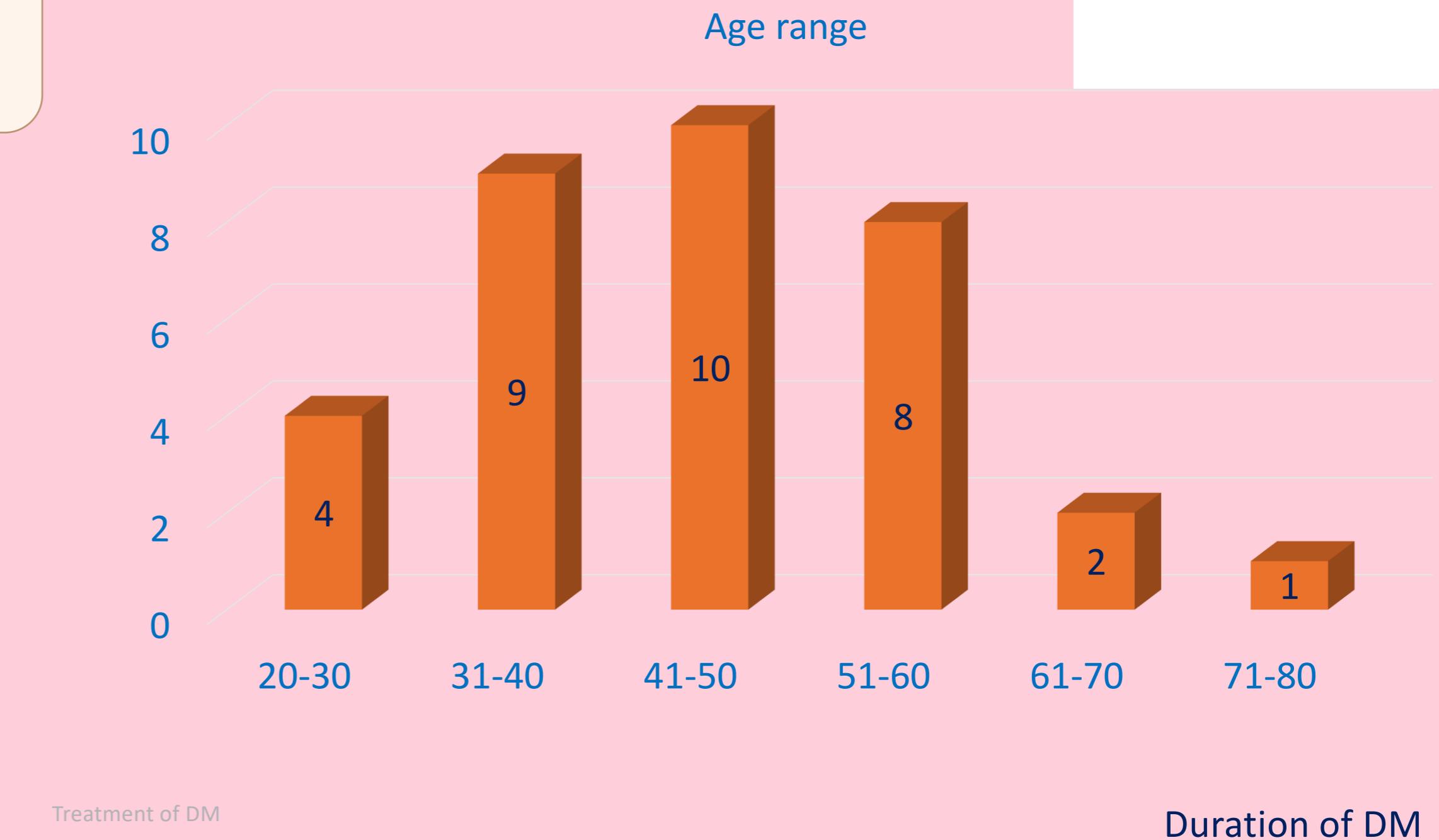
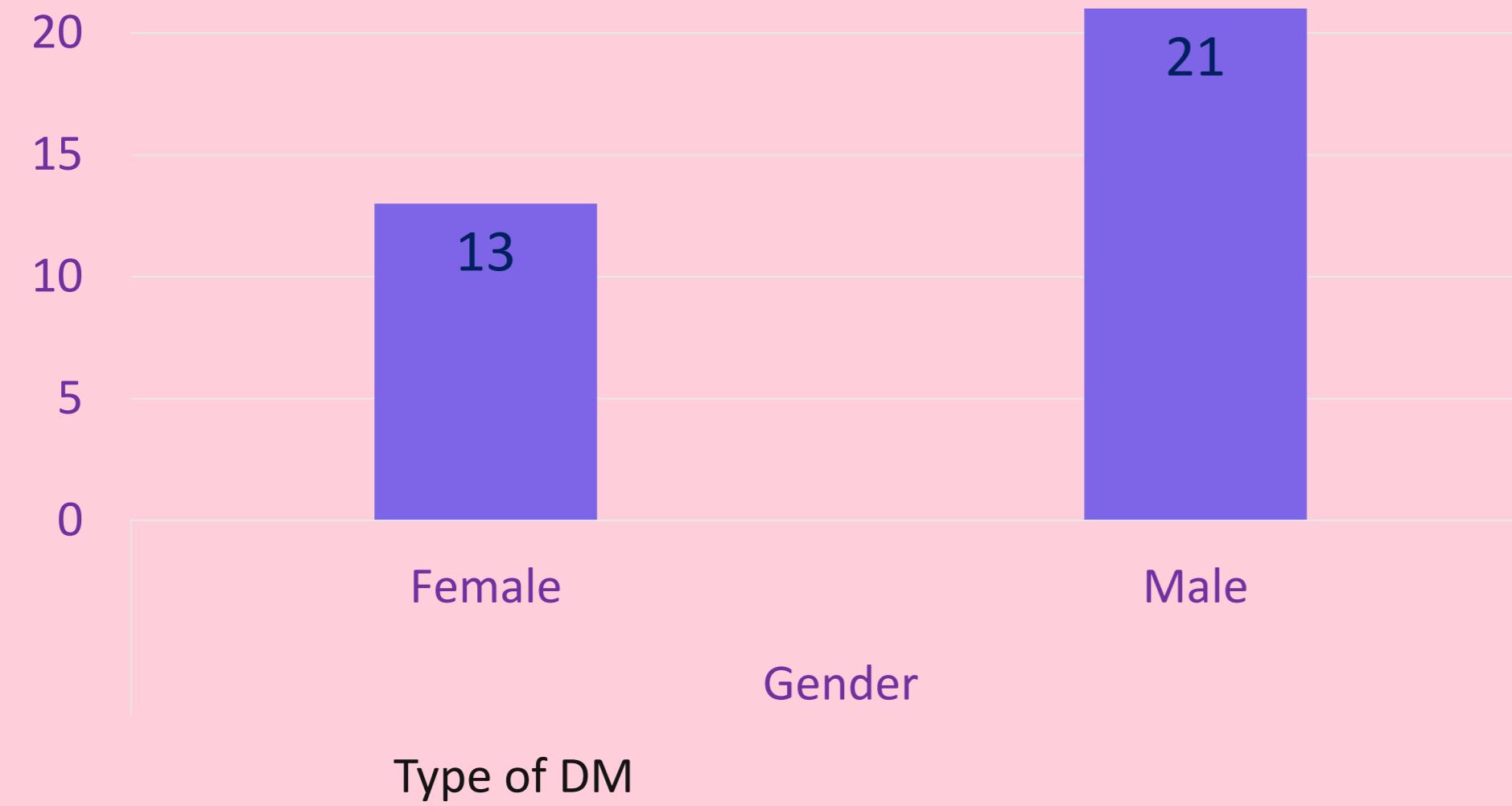
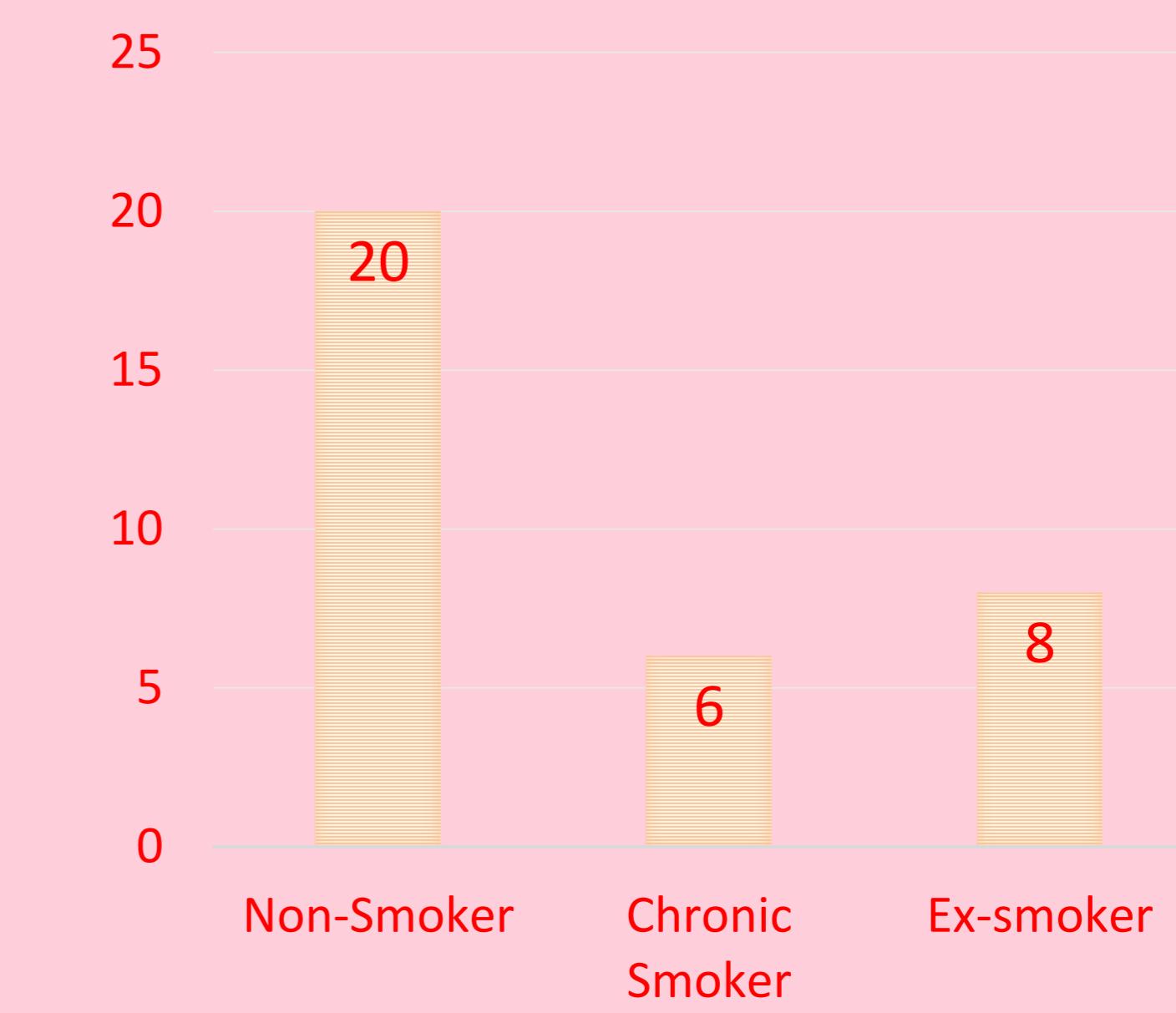
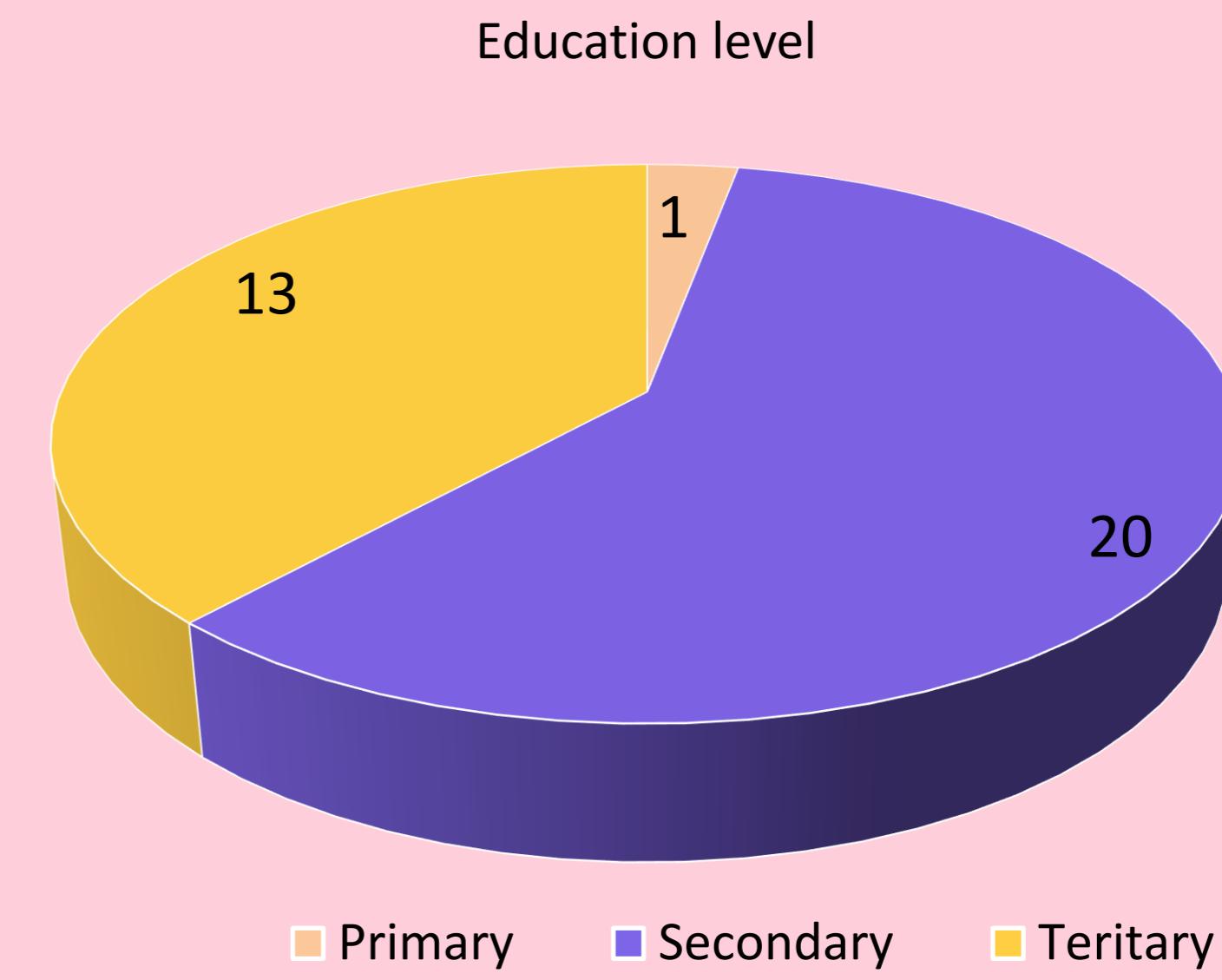
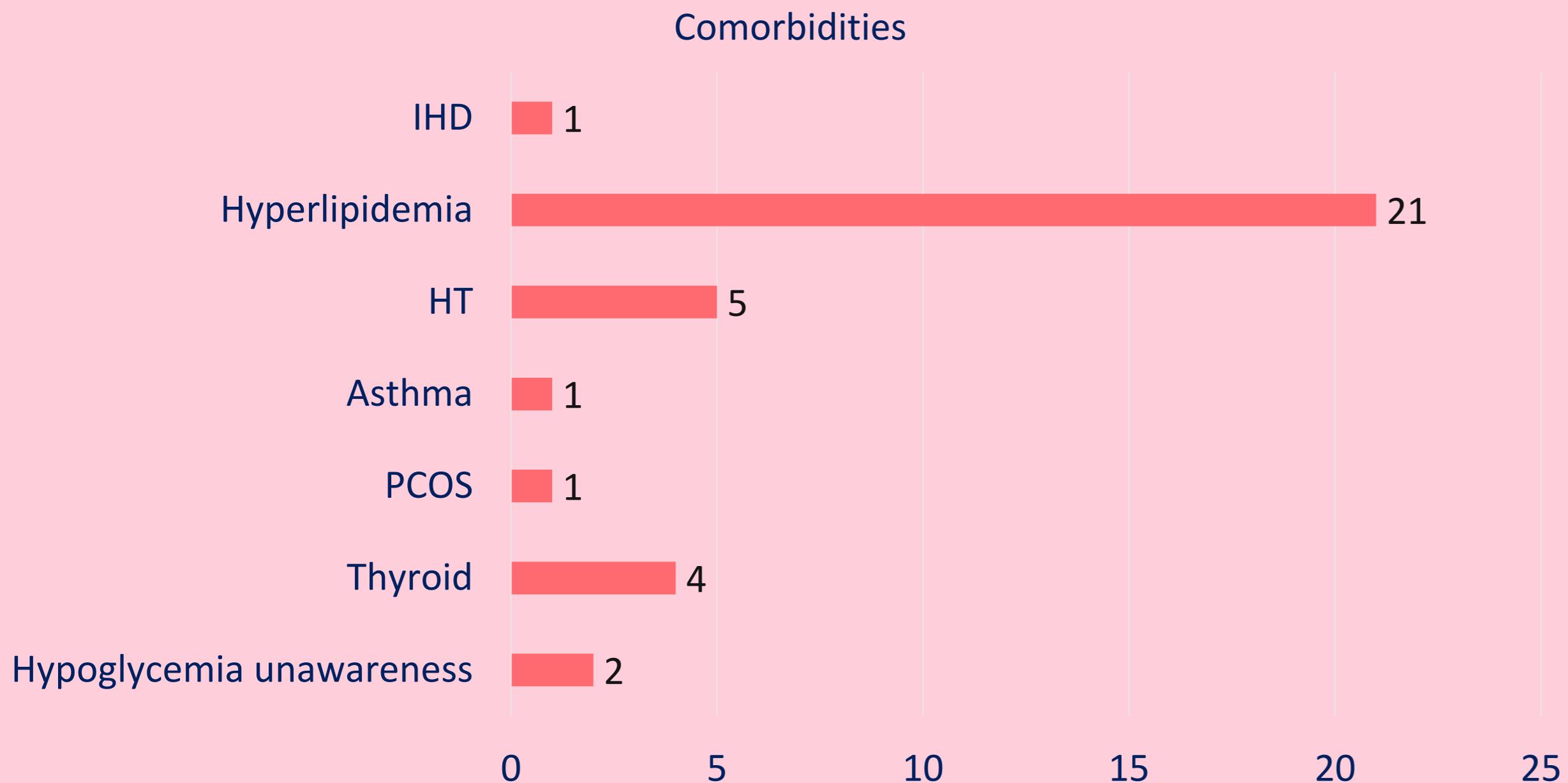


Figure 4. Using daily blood glucose traces to examine anomalous blood glucose variability.

Demographic data:





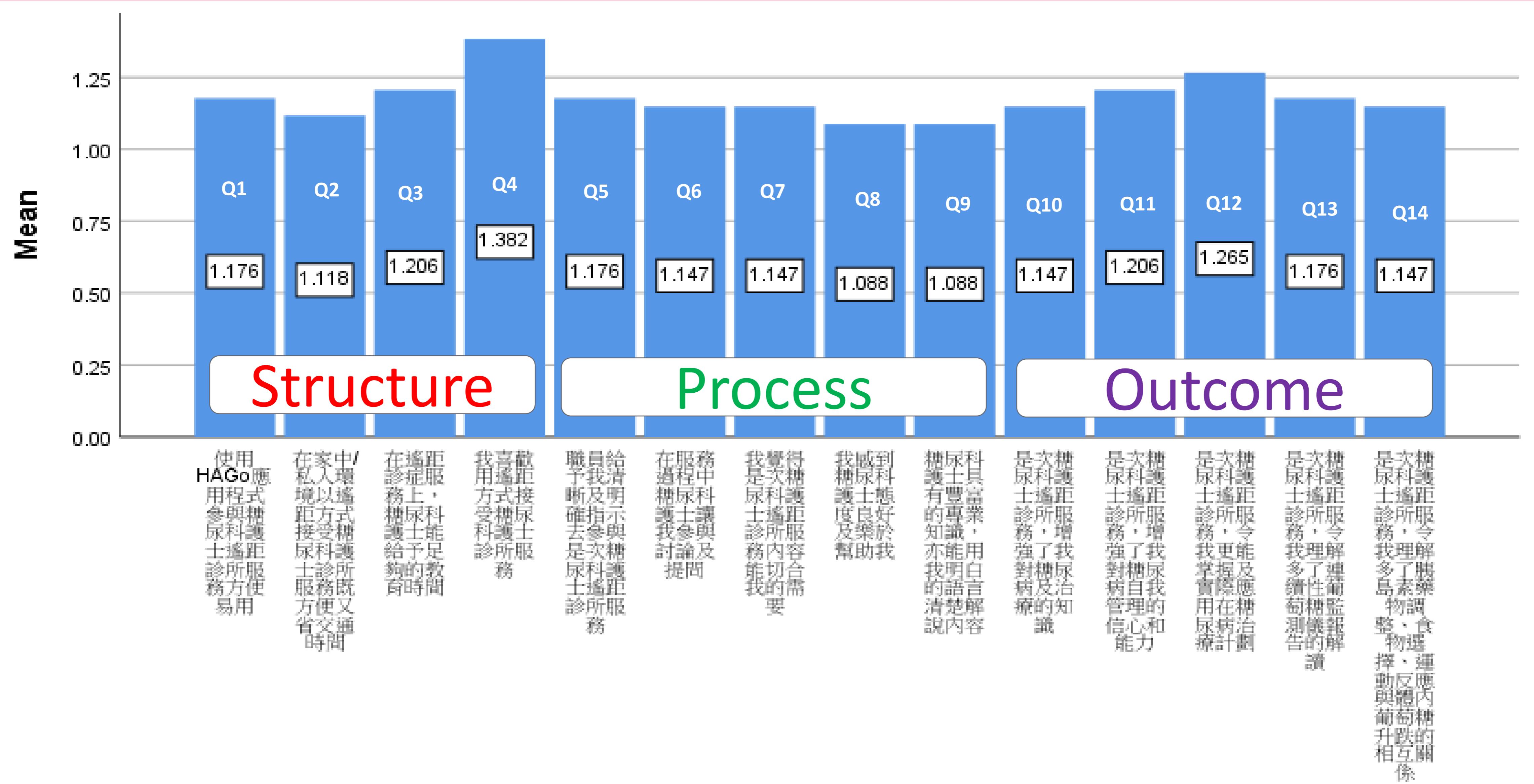
Question Details:

Structure	Q1	使用HAGo應用程式參與糖尿病護士遙距診所服務方便易用
	Q2	在家中/私人環境以遙距方式接受糖尿病護士診所服務既方便又省交通時間
	Q3	在遙距診症服務上，糖尿病護士能給予足夠的教育時間
	Q4	我喜歡用遙距方式接受糖尿病護士診所服務
Process	Q5	職員給予我清晰及明確指示去參與是次糖尿病護士遙距診所服務
	Q6	在服務過程中糖尿病護士讓我參與討論及提問
	Q7	我覺得是次糖尿病護士遙距診所服務內容能切合我的需要
	Q8	我感到糖尿病護士態度良好及樂於幫助我
	Q9	糖尿病護士具有豐富的專業知識，亦能用我明白的語言清楚解說內容
	Q10	是次糖尿病護士遙距診所服務，增強了我對糖尿病及治療的知識
Outcome	Q11	是次糖尿病護士遙距診所服務，增強了我對糖尿病自我管理的信心和能力
	Q12	是次糖尿病護士遙距診所服務，令我更能掌握及實際應用在糖尿病治療計劃
	Q13	是次糖尿病護士遙距診所服務，令我理解多了連續性葡萄糖監測儀報告的解讀
	Q14	是次糖尿病護士遙距診所服務，令我理解多了胰島素藥物調整、食物選擇、運動反應與體內葡萄糖升跌的相互關係
	Q15	整體而言，我對糖尿病護士遙距診所服務的滿意程度為 0-100%
	Q16	對糖尿病護士遙距診所服務的其他建議及意見

Response Rates

Reliability Statistics

Cronbach's Alpha	N of Items
0.956	14



Respondents' Comments

Q15: 整體而言，我對糖尿病護士遙距診所服務的滿意程度為 0-100%

Mean: 96 (Max: 100; Min: 80)

Q16: 對糖尿病護士遙距診所服務的其他建議及意見

Total 3 comments were received.

> Bad sound quality, no sick leave cert, privacy concern

> 多謝伍姑娘詳細的解答和報告分析，令到我更清楚明白如何控制好血糖。非常感謝。

另外，遙距服務真是非常方便，不論在何地，只要有智能電話，就能覆診視像見護士。完全100%增加我覆診的次數和意願。

如果能夠覆蓋見醫生更好。再加上遙距取藥，就會非常方便。當然，我亦明白遙距診症亦不能完全取代面見診症。因為都需要觸診病人打針位置的皮膚情況，定時足部評估和照眼底的需要。如果能一年見醫生，順便做糖尿病評估。其他定期抽血，就採用郵寄抽血紙或透過HA GO 發送抽血code。或見醫生時，一次過取三張抽血紙，再定時去抽血，就真是太方便了。有血報告後，再遙距見護士，根據抽血情況和血糖報告調整藥物。穩定便定期配藥。有需要時才去約見醫生。

> 很滿意

Findings from the Patients' perspective

The reliability statistic, measured by Cronbach's alpha, was 0.956 for items 1-14.

In the structure domain (items 1-4):

- ✓ Patient satisfaction scores ranged from 1.118 to 1.382, indicating that *the telehealth service was convenient and easy to use, both at home and in private settings.*
- ✓ Patients also found the duration of the telehealth service adequate and expressed a preference for adopting it as an alternative mode of diabetes nurse clinic.

In the process domain (items 5-9):

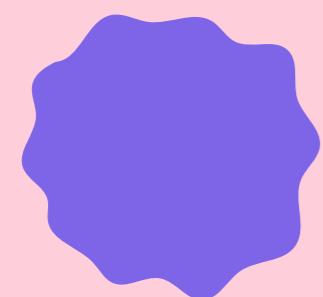
- ✓ Patient satisfaction scores ranged from 1.088 to 1.176, suggesting that *the service instructions were easy to follow.*
- ✓ The diabetes nurses effectively engaged patients in meaningful discussions and provided tailored diabetes education based on individual needs.
- ✓ Patients appreciated the supportive attitude, extensive diabetes knowledge, and clear explanations offered by the diabetes nurses during the telehealth service.

Findings from the Patients' perspective

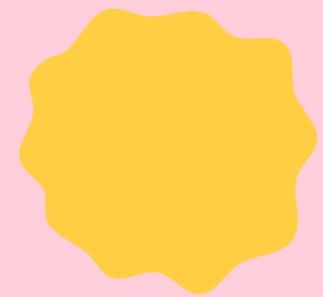
In the outcome domain (items 10-14):

- ✓ Patient satisfaction scores ranged from 1.147 to 1.265, indicating *enhancements in diabetes knowledge, self-care management, and self-efficacy, particularly in the area of continuous glucose monitoring interpretation.*
- ✓ For item 15, which evaluated overall satisfaction with the telehealth diabetes education service on a scale from 0% to 100%, *the mean score was 96 (maximum: 100; minimum: 80).*
- ✓ For item 16, which addressed areas for improvement or additional comments, *three patients responded.*
 - One patient expressed concerns about privacy and issues related to sick leave certificates, as well as poor sound quality during the session.
 - Two patients reported satisfaction with the service, with one suggesting that the telehealth service should be extended to doctor clinics three times a year while maintaining annual in-person visits. Additionally, practical issues were raised to enhance the feasibility of telehealth services in doctor clinics, including the arrangement for issuing laboratory blood tests and managing medication prescriptions.

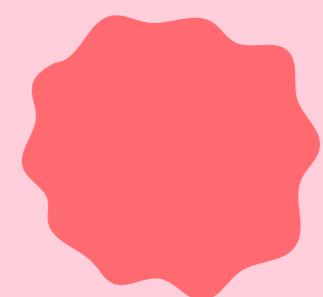
Limitation



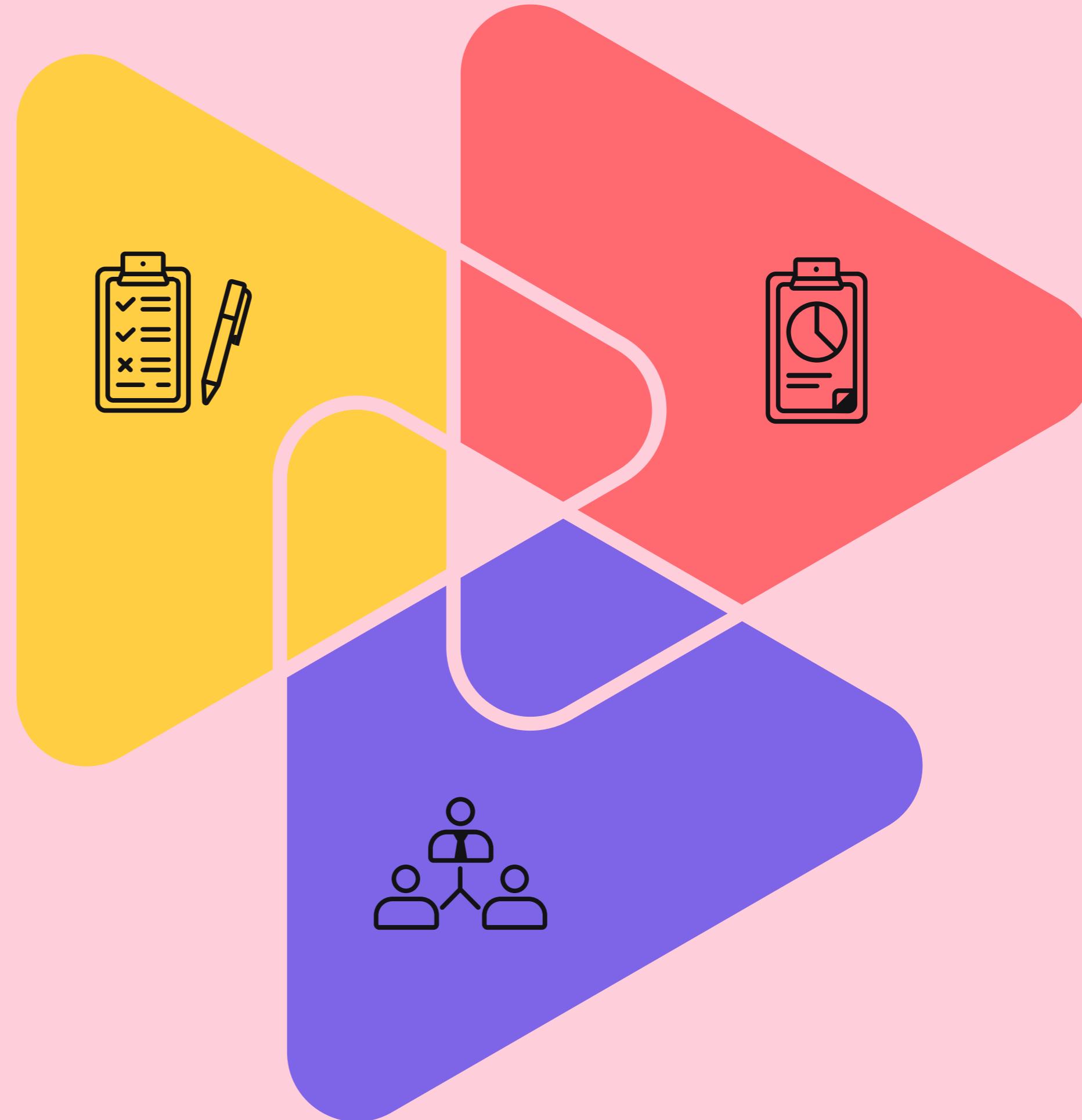
Small sample size

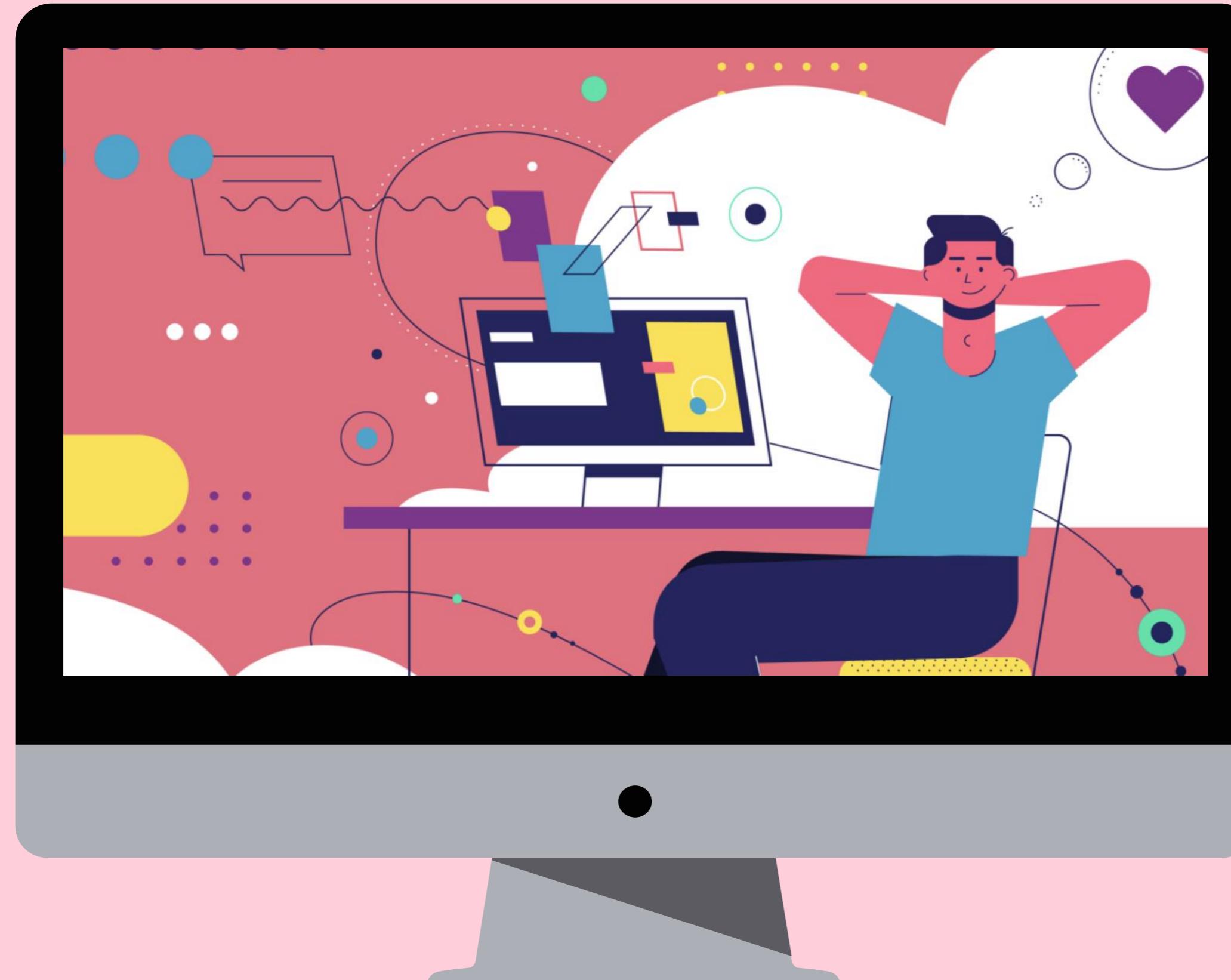


Convenience
sampling method



**Findings serves as a pointer
for further study and clinical
practice**





Conclusion

Findings from this pilot study (*Patient Perceptions of Service Satisfaction in a Telehealth Diabetes Education Service: A Mixed Method Study*) show that the tele-health service is met with the patients' expectation and their needs.



Thank You!



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