

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

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## 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

03

## Exclusion criteria

Referred by Endocrinologists or Diabetes nurses

Diagnosed of Psychiatric illness



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

Refusal to installation of CGM sensor or irregular HBGM

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



# 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.

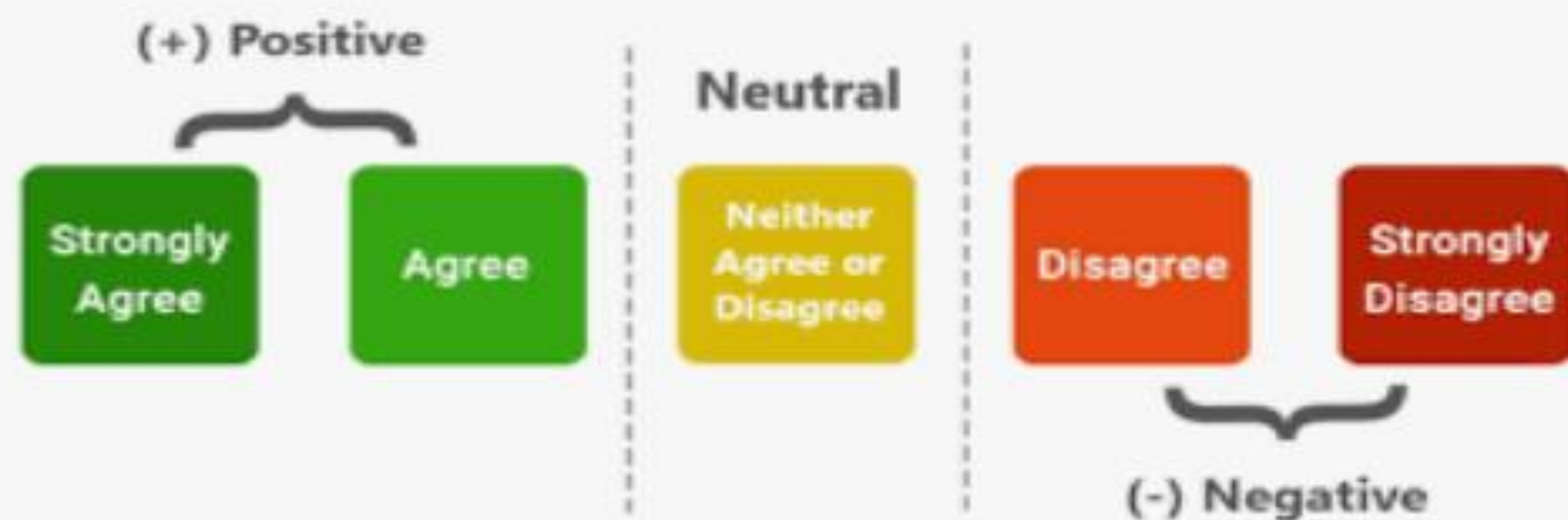
② Applicators' perspective:

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

③ Clinical service outcome perspective:

Collection of pre-post clinical data for comparison.

# Satisfaction Rating



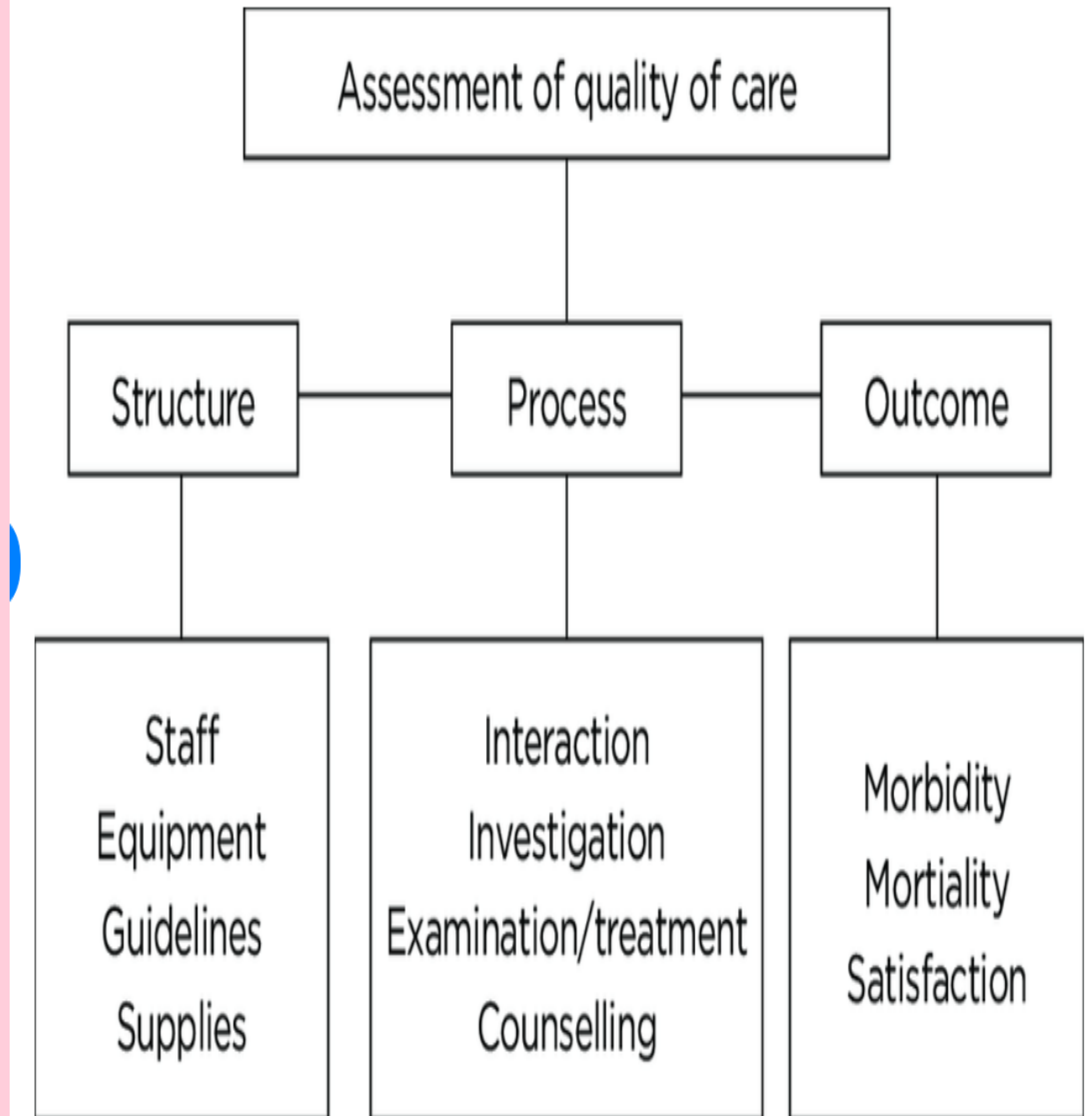
**Subjects rated their satisfaction on a Likert scale from 1 to 5:**

- 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

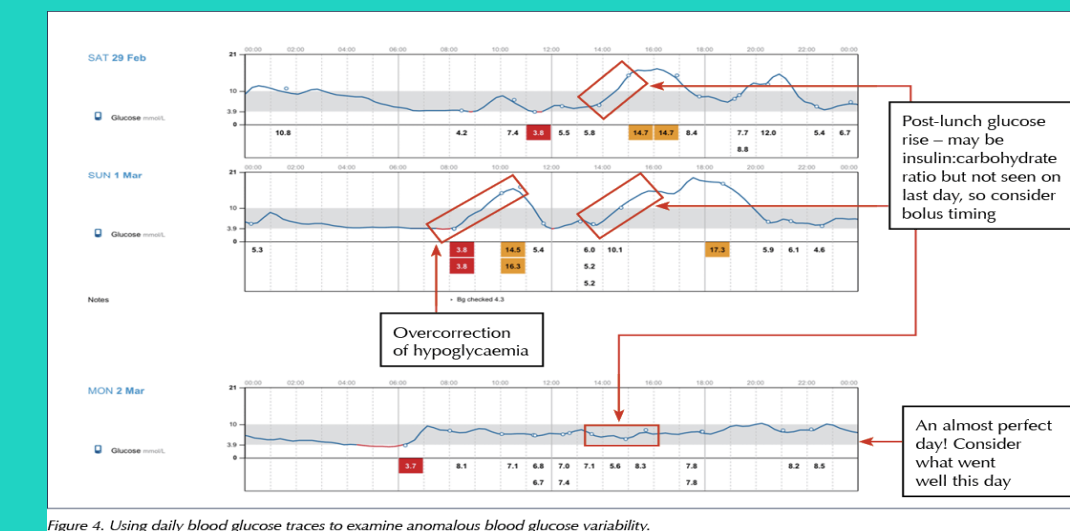


The Donabedian model for assessment of quality of care (Donabedian 1988)



# 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

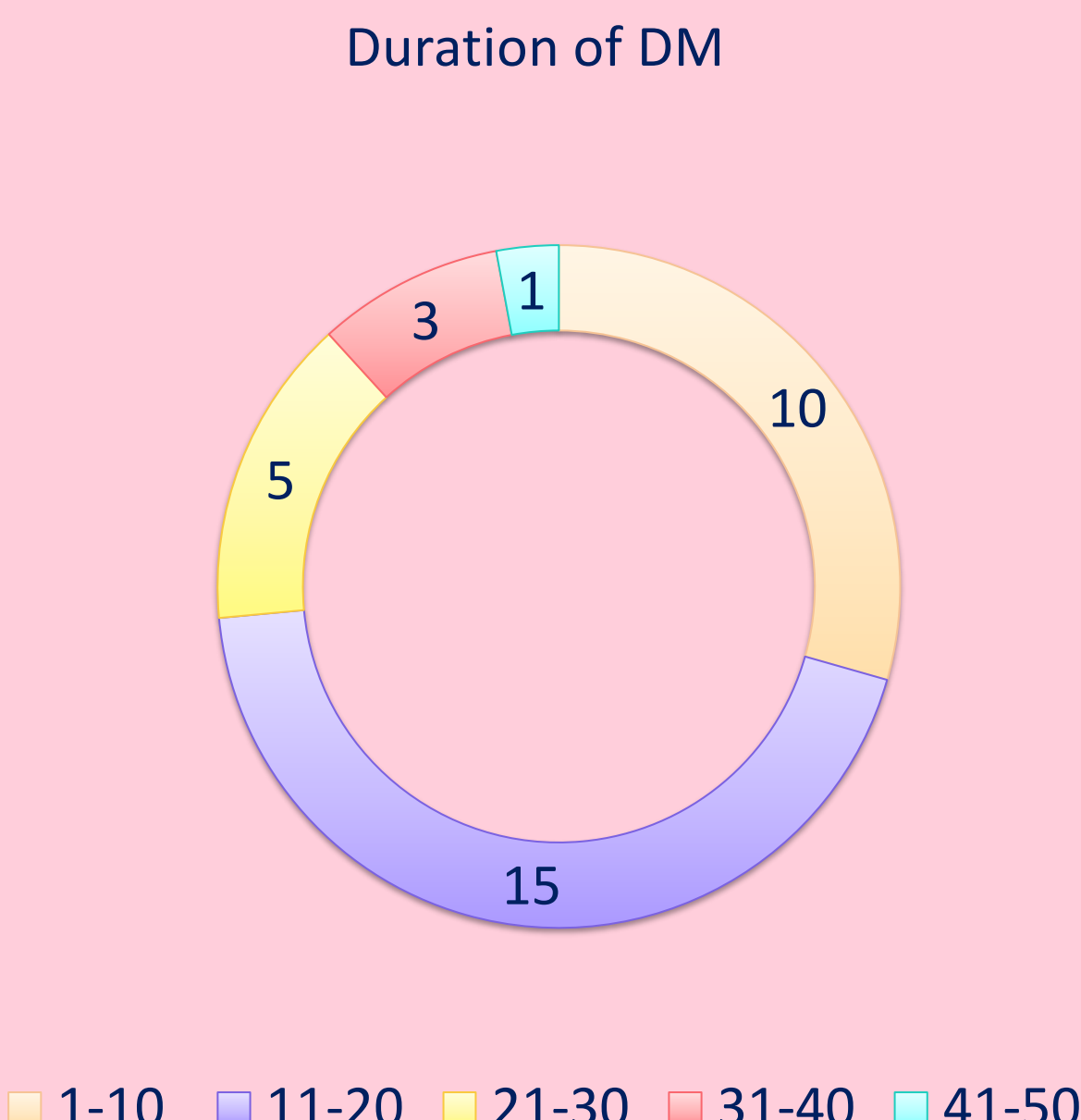
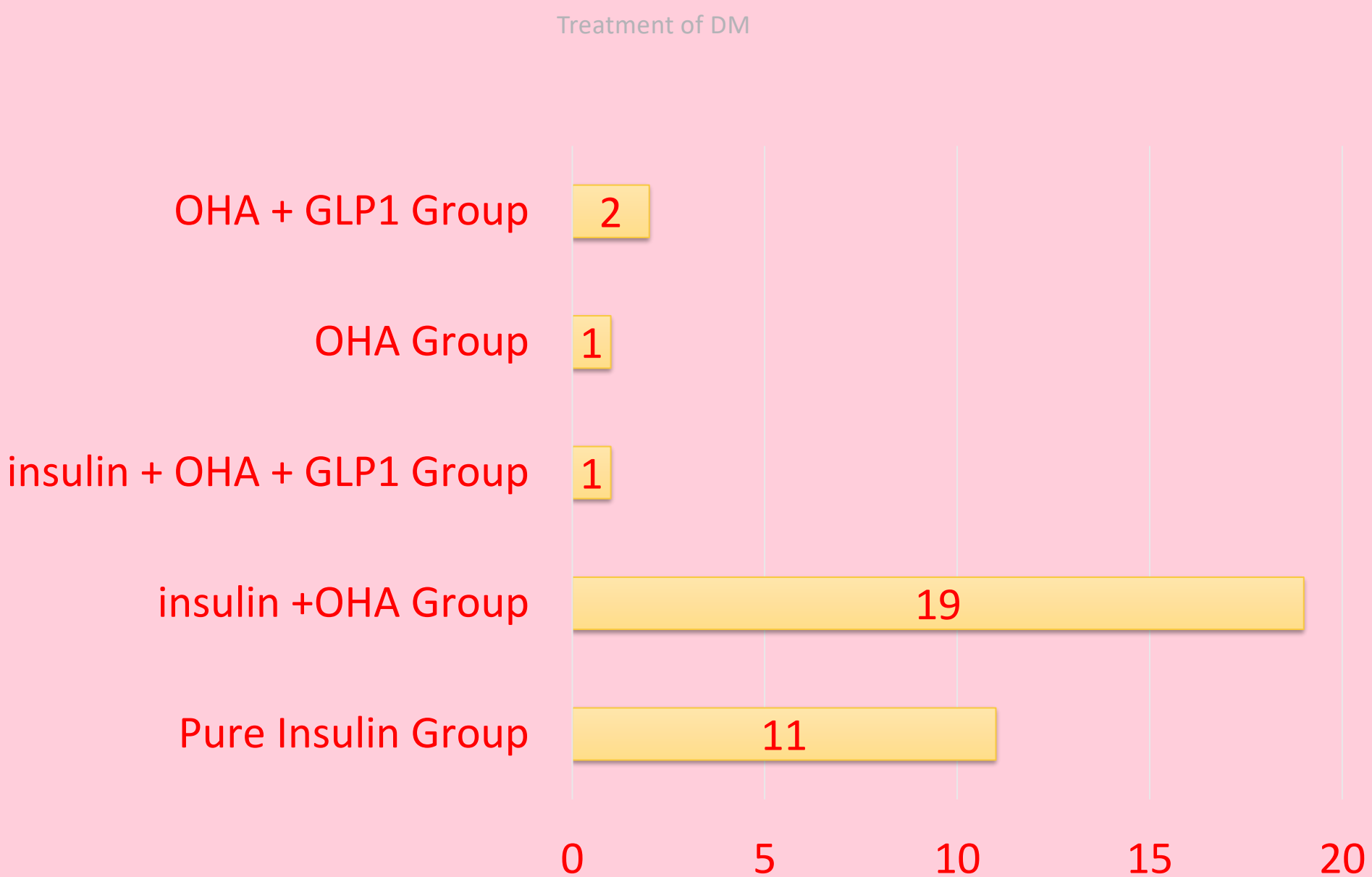
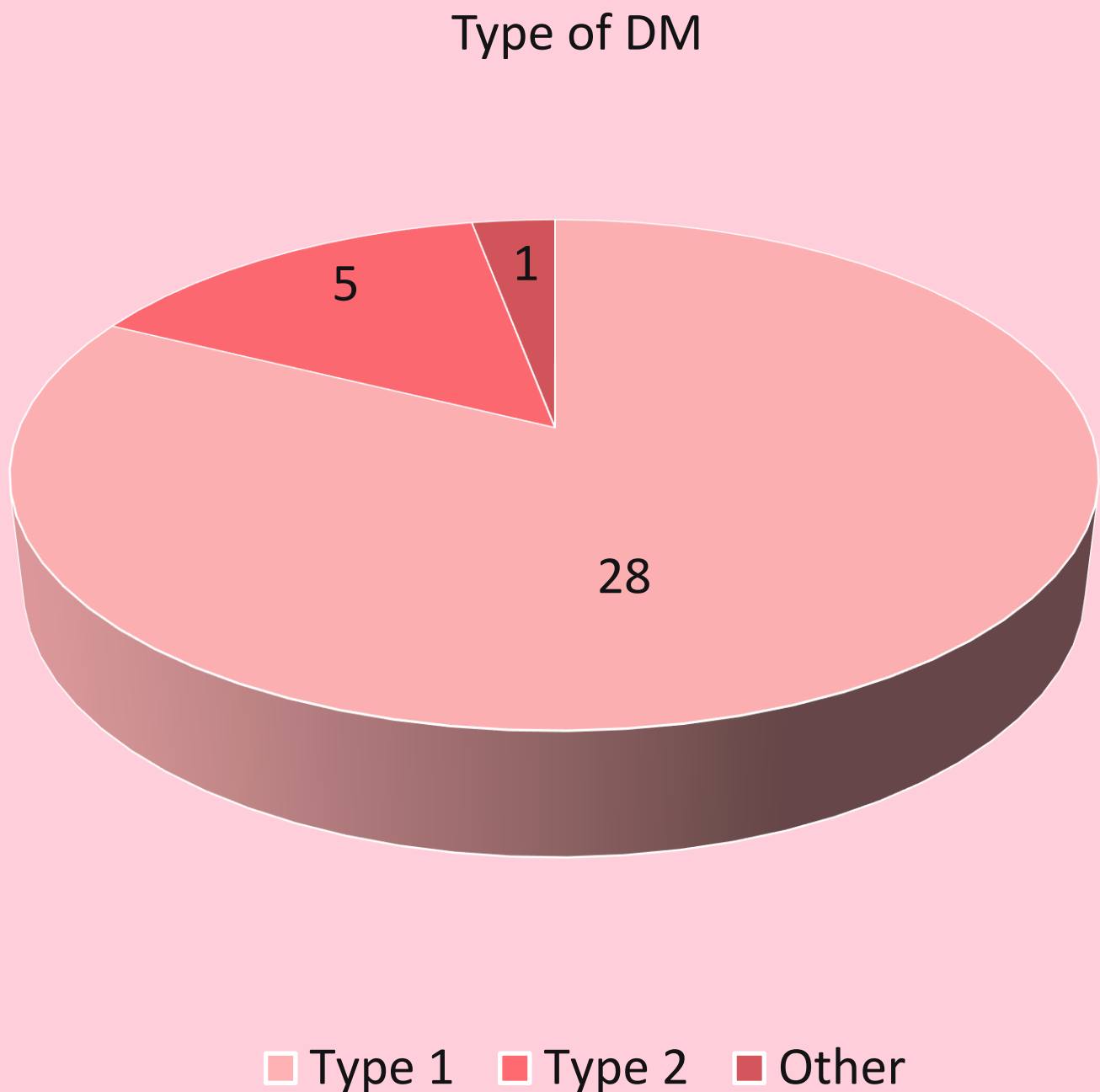
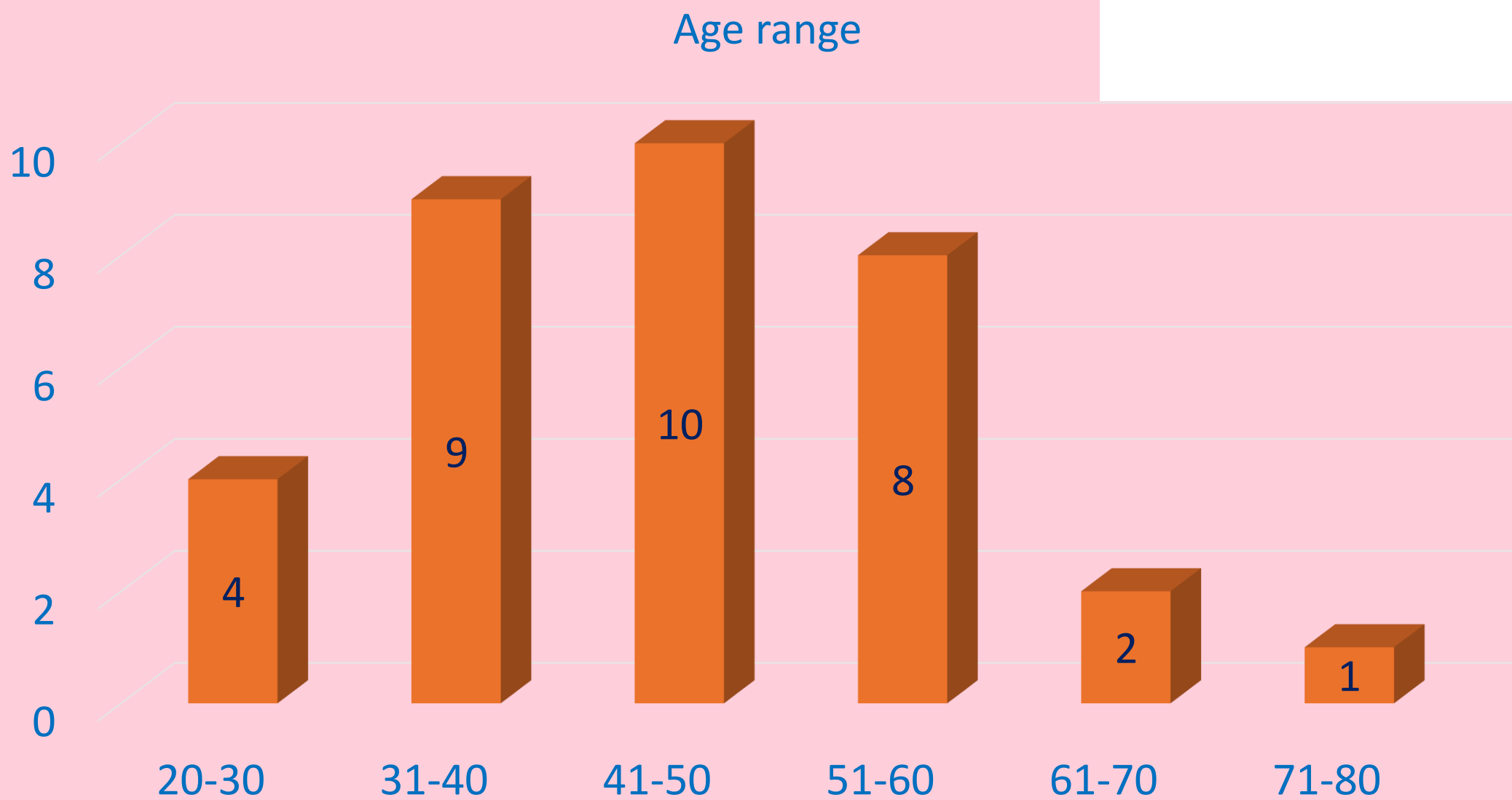
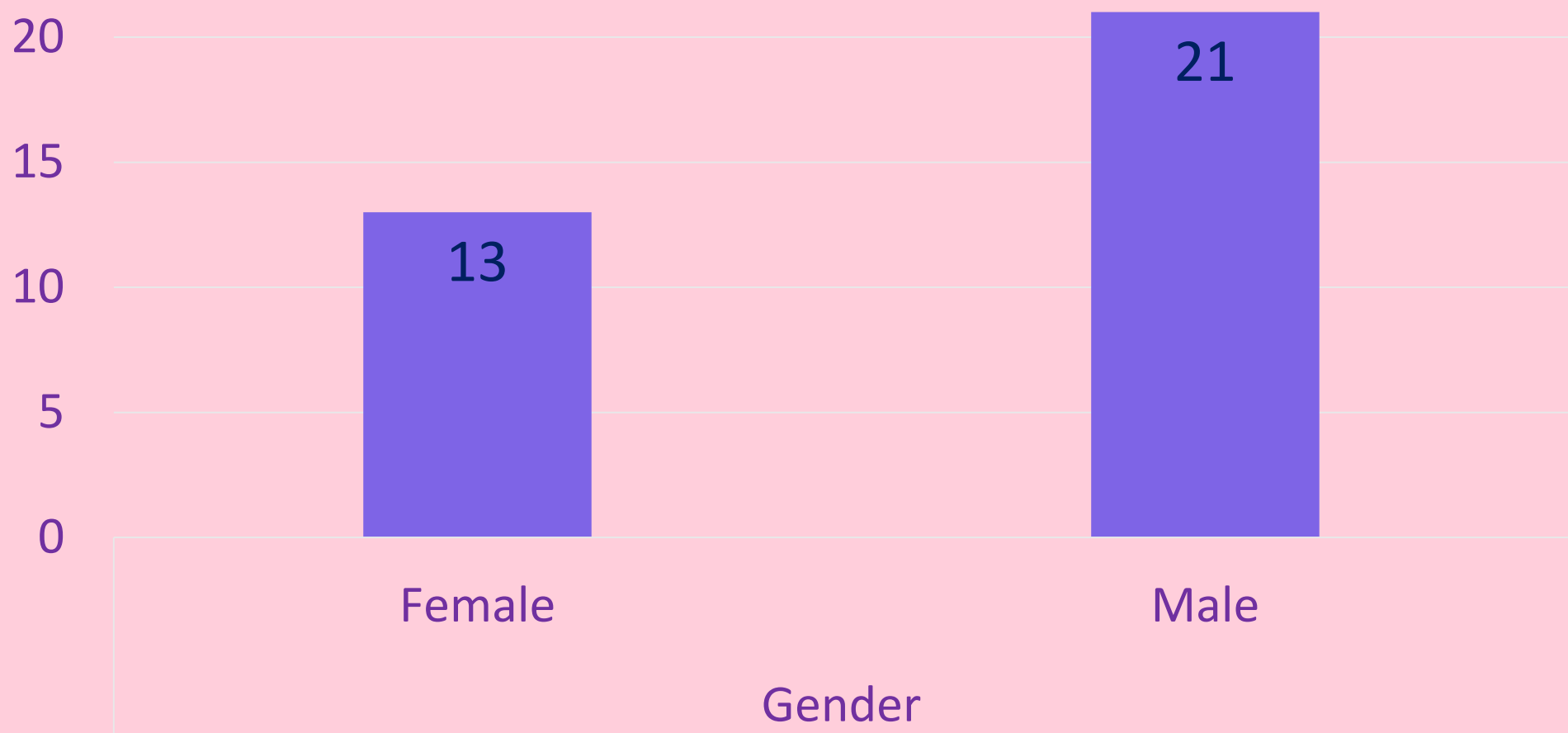


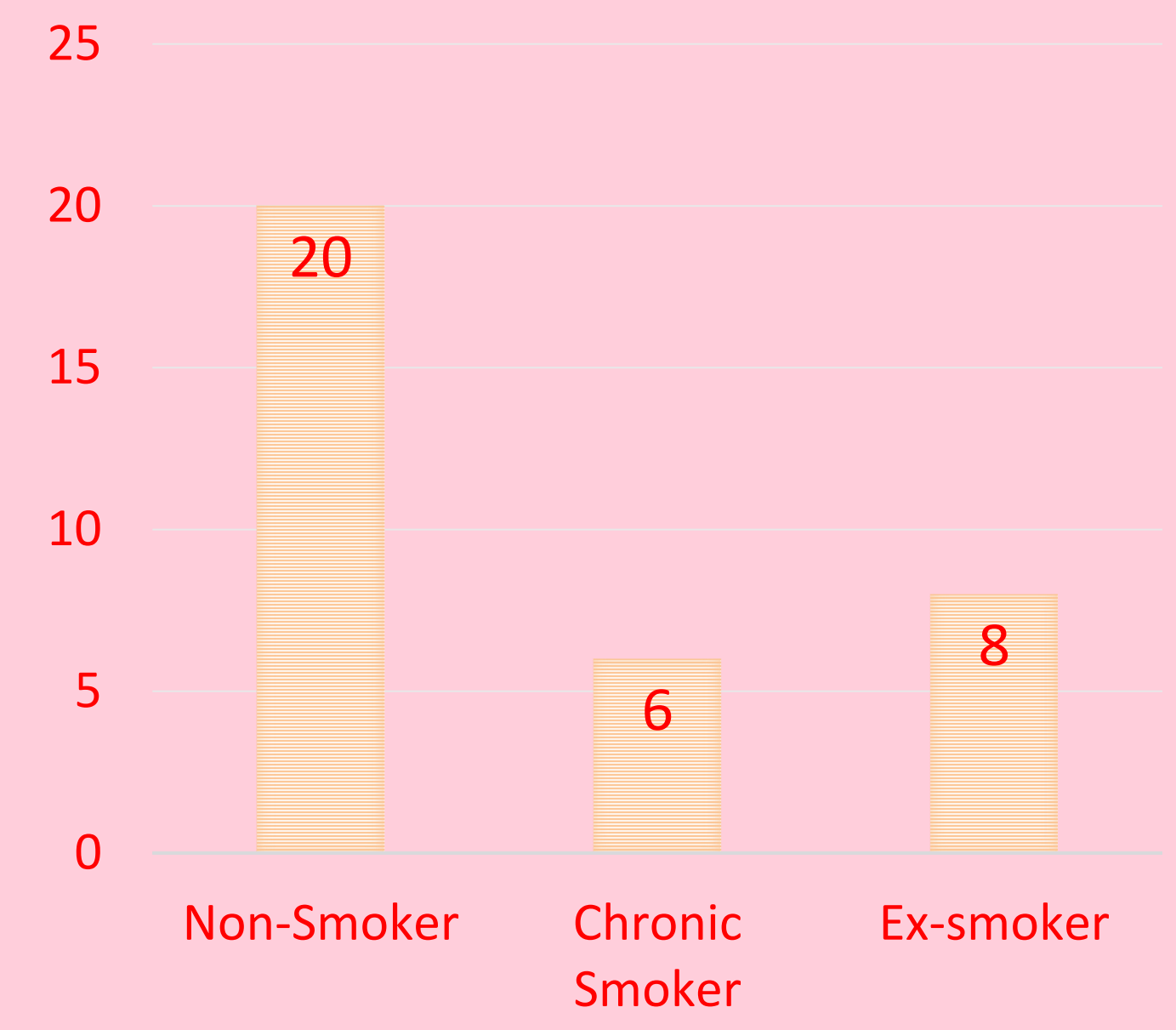
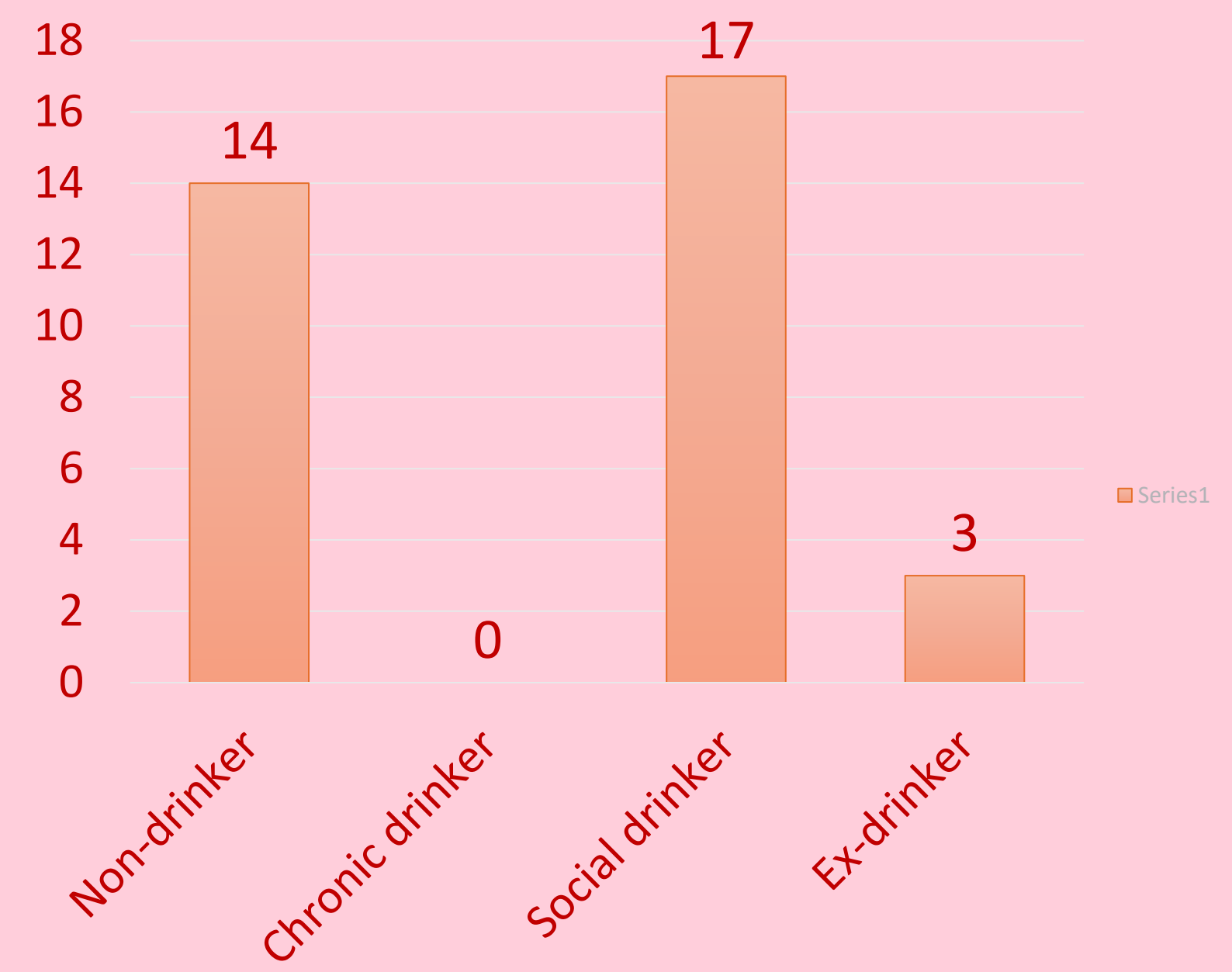
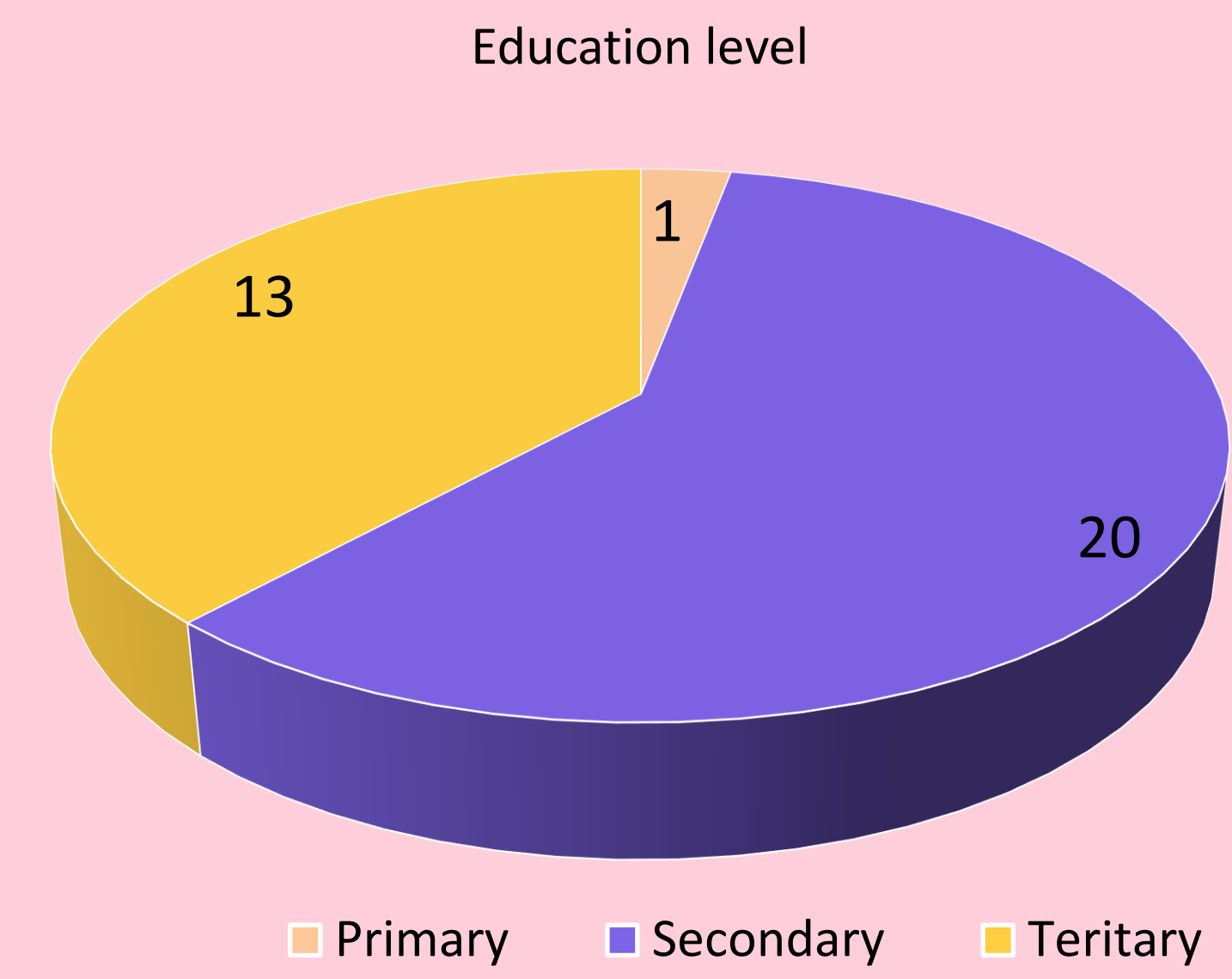
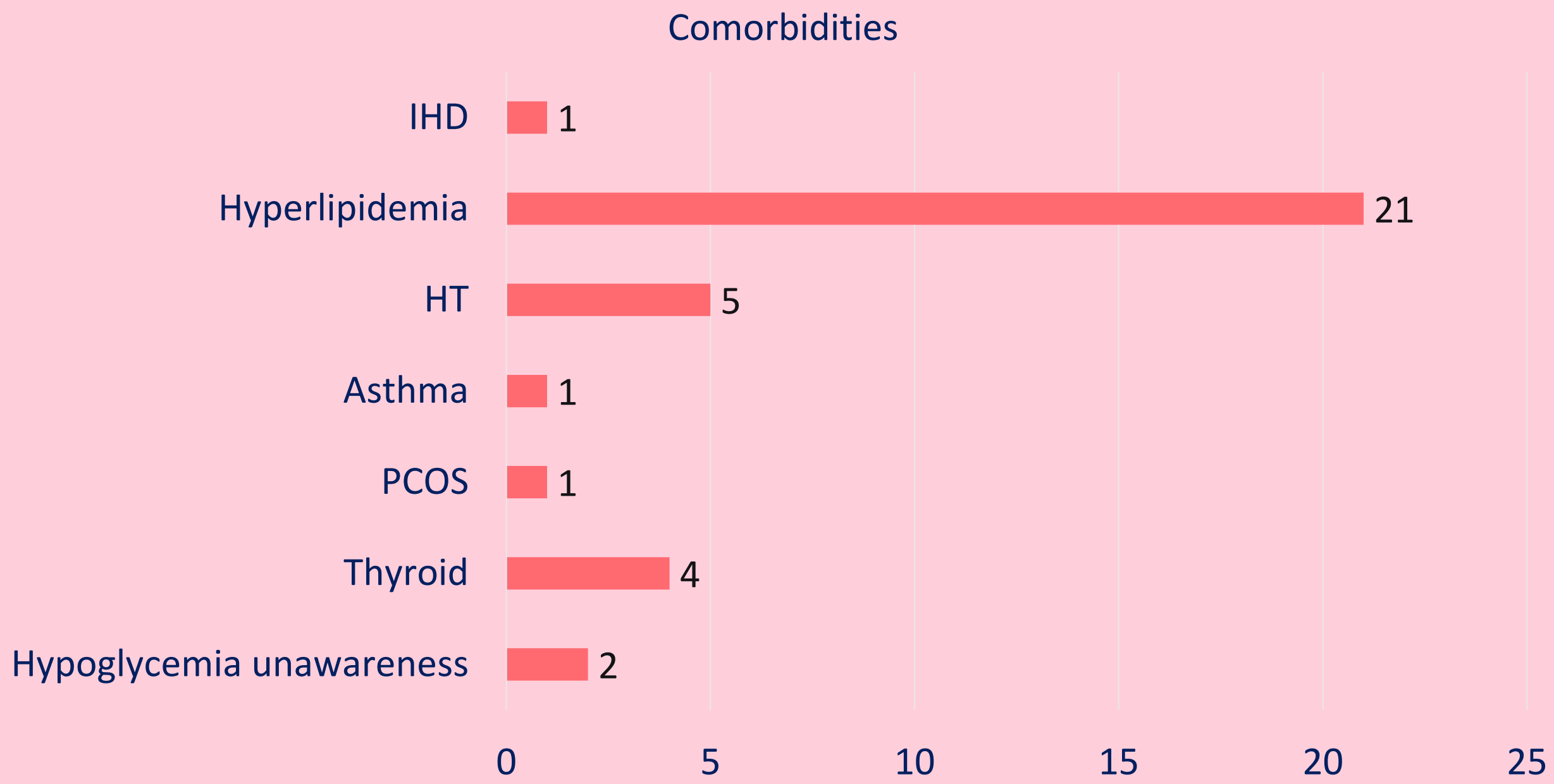
	Before breakfast		Before lunch		Before dinner		Overnight	
	Time	BG	Time	BG	Time	BG	Time	BG
Monday								
Tuesday								
Wednesday								
Thursday								



# Demographic data:

Study period: 4/2023 - 7/2024





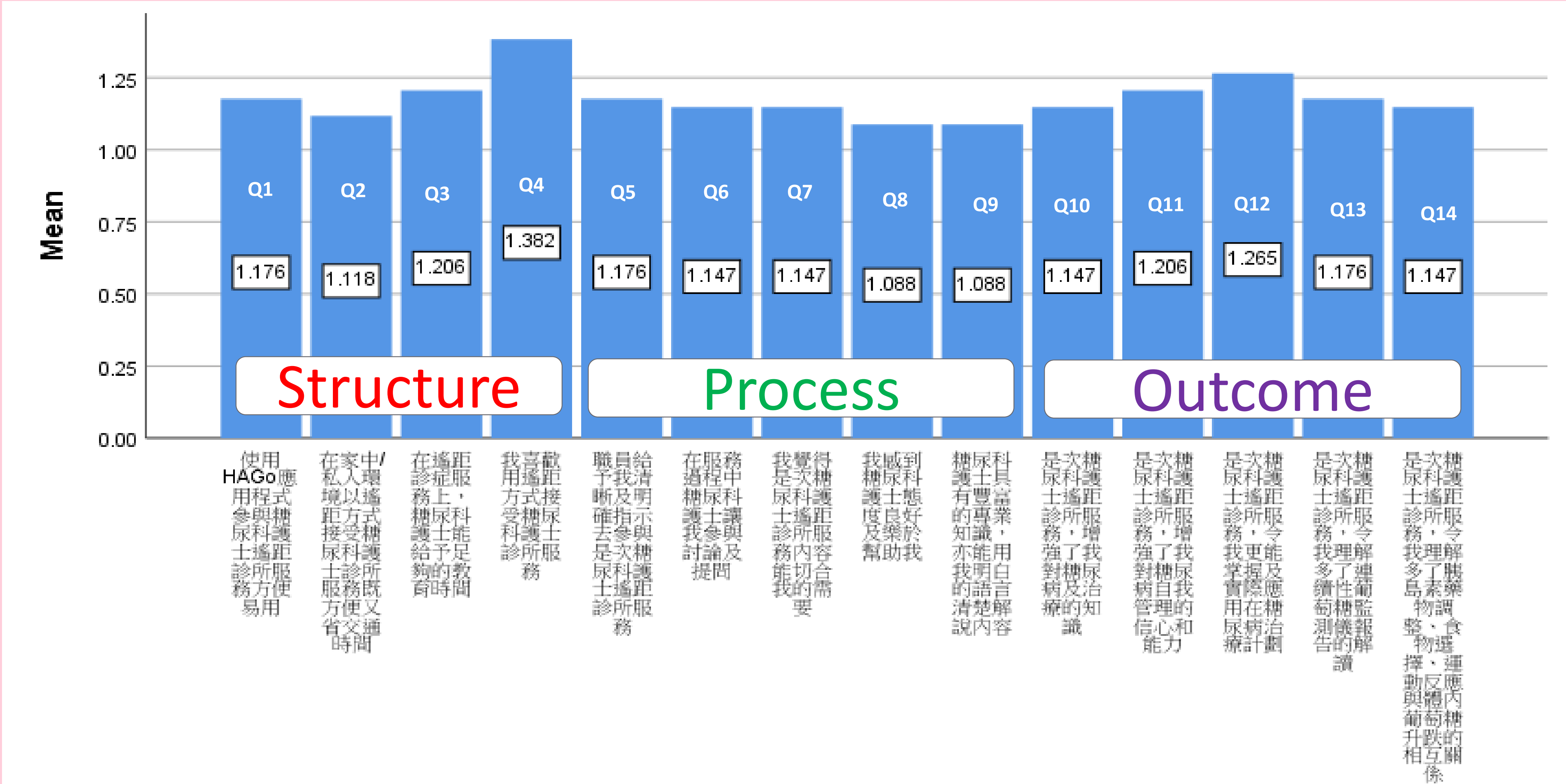
# Question Details:

Structure	Q1	使用HAGo應用程式參與糖尿科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科護士診所服務既方便又省交通時間
	Q3	在遙距診症服務上，糖尿科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科護士診所服務
Process	Q5	職員給予我清晰及明確指示去參與是次糖尿科護士遙距診所服務
	Q6	在服務過程中糖尿科護士讓我參與討論及提問
	Q7	我覺得是次糖尿科護士遙距診所服務內容能切合我的需要
	Q8	我感到糖尿科護士態度良好及樂於幫助我
	Q9	糖尿科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
Outcome	Q10	是次糖尿科護士遙距診所服務，增強了我對糖尿病及治療的知識
	Q11	是次糖尿科護士遙距診所服務，增強了我對糖尿病自我管理的信心和能力
	Q12	是次糖尿科護士遙距診所服務，令我更能掌握及實際應用在糖尿病治療計劃
	Q13	是次糖尿科護士遙距診所服務，令我理解多了連續性葡萄糖監測儀報告的解讀
	Q14	是次糖尿科護士遙距診所服務，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，我對糖尿科護士遙距診所服務的滿意程度為 0-100%
	Q16	對糖尿科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，我對糖尿病科護士遙距診所服務的滿意程度為 0-100%

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

Q16: 對糖尿病科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.

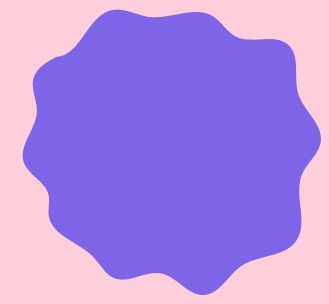


## Findings from the Patients' perspective

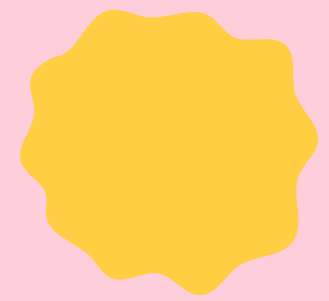
### **In the outcome domain (items 10-14):**

- ✓ 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



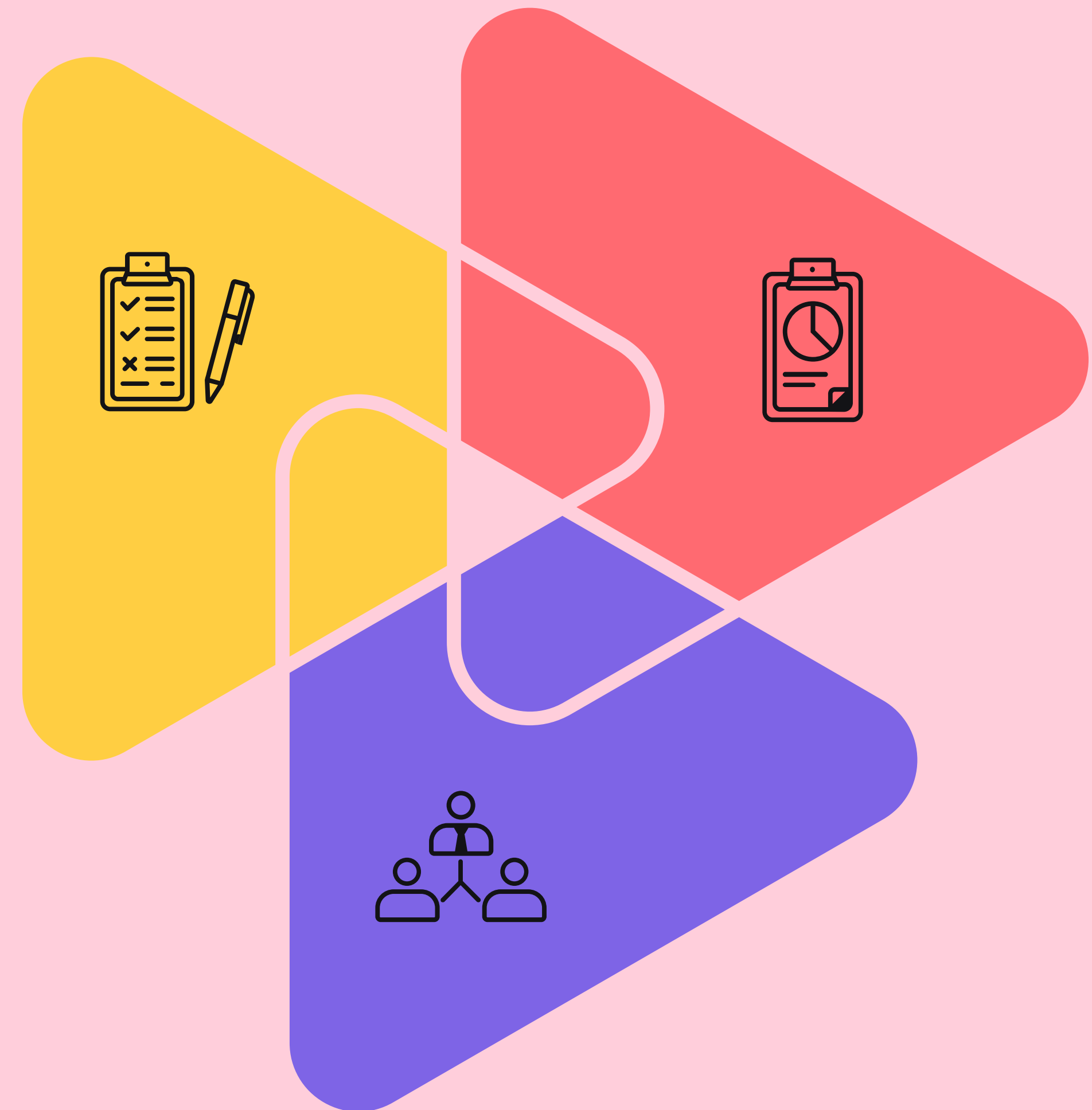
Small sample size

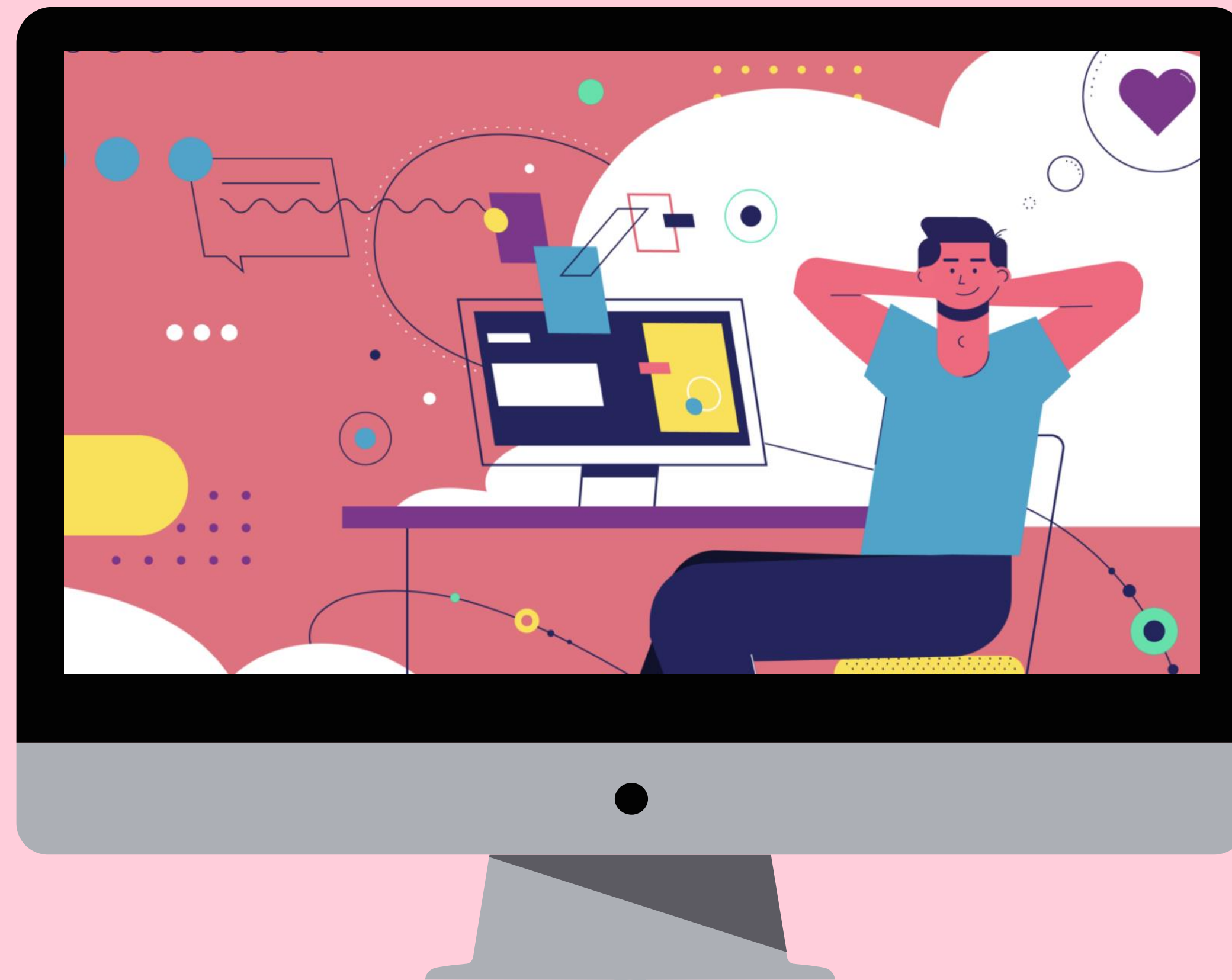


Convenience  
sampling method



**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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