'KANO MODEL' AND 'DESIGN THINKING' based innovations TO REDUCE INPATIENT ANXIETY during surgery and IMPROVE OVERALL EXPERIENCE of Inpatients.

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Staff interviews

Preoperative anxiety around cataract surgery **affects a large proportion of patients**, despite advances in technique and anesthesia administration.

Greatest for anxiety about the operation failing (p<0.001) and becoming blind (p<0.001)

Anxious patient and attender

Dissatisfied staff

Major pain points

- **Patients and attenders were anxious before surgery**
- **Patients were not satisfied with their overall experience**
- **Reduced staff morale**

Data collection - Forms and questionnaires, observation, interviews, etc.

TIME MOTION STUDY

Activity	Mean (in minutes)	Range (in minutes)
Alloting room to patient	7	4-10
Initial assessment	6	5 - 10
Arrival in block room	3	2-4

Foggitt PS. Anxiety in cataract surgery: pilot study. J Cataract Refract Surg. 2001;27(10):1651–1655

Ramirez DA, Ramanathan S. Anxiety in patients undergoing cataract surgery: a pre- and postoperative comparison. Clin Ophthalmol. 2017 Nov 10;11:1979-1986.

Materials and methods

KANO Model analysis

Satisfaction

Attractive (Delighters)
- Availability of complete surgical info (esp. pre and post surgery)
- COVID safe premises
- Ease of appointment
- Efficient counselling

Primary satisfiers (One directional)
- Pleasant communication with clarity of info
- Pleasant ambience, spacious rooms

Not available — **Available**

Indifferent
- Total number of staff
- Preferred time of surgery

Must be (Expected)
- Less waiting time
- Clean clothes

Dissatisfaction

Requirements Type	Definition
Must Be (Expected Quality)	Requirement that can dissatisfy (expected, but cannot increase satisfaction)
One-Dimensional (Desired Quality)	The more of these requirements that are met, the more a client is satisfied
Delighters (Excited Quality)	If the requirement is absent, it does not cause dissatisfaction, but it will delight clients if present
Indifferent	Client is indifferent to whether the feature is present or not
Reverse	Feature actually causes dissatisfaction

a) Hospital Anxiety and Depression Scale (HADS-A)

b) KANO model

c) QFD (Quality Function Deployment) / House of Quality

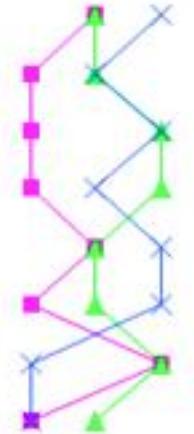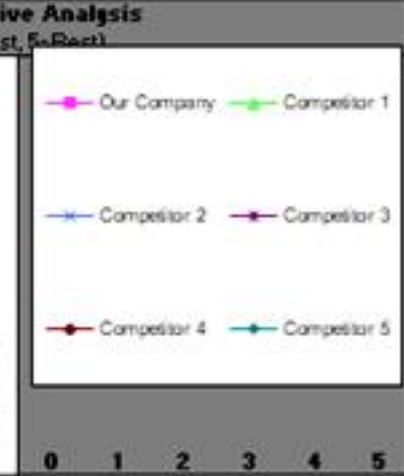d) Design thinking - to identify and innovate some new solutions.

QFD (Quality Function Deployment) / House of Quality

Title:	KANO project - Reduction in anxiousness of Inpatients and improving IP services
Author:	Quality department
Date:	Jun-Jul 2021
Notes:	Detailed feedback received from IP patients through struct
	cust req and design criteria's correlation needs to be identif
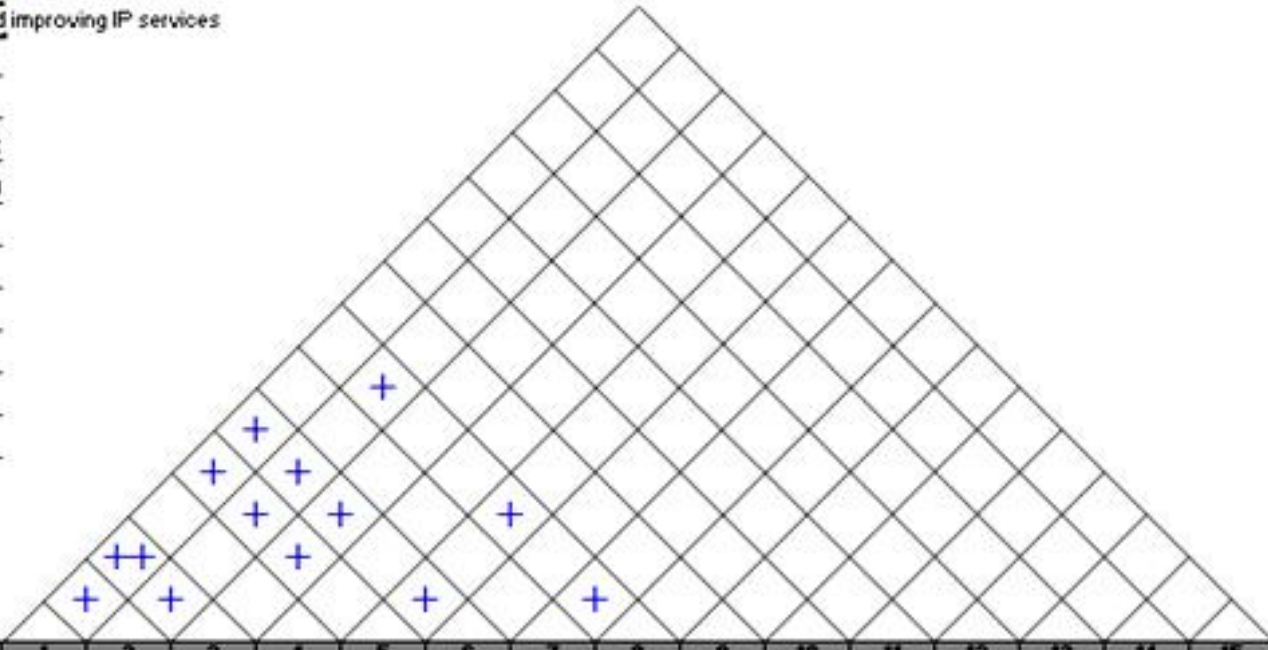
Legend

Symbol	Meaning	
⊙	Strong Relationship	9
○	Moderate Relationship	3
▲	Weak Relationship	1
++	Strong Positive Correlation	
+	Positive Correlation	
−	Negative Correlation	
▼	Strong Negative Correlation	
▼	Objective Is To Minimize	
▲	Objective Is To Maximize	
X	Objective Is To Hit Target	

Quality Characteristics (a.k.a. "Functional Requirements" or "Hows")

Columns:
1. Number of staff
2. Efficient trainings, soft skill trainings
3. Availability of qualified staff
4. User friendly website for appointments
5. Clear protocols, availability of policies
6. Proper scheduling & monitoring
7. Proper infrastructure - Room availability & layout
8. Revised checklists and cleaning schedules
9. videos or handouts with surgical info

Row #	Max Relationship Value in Row	Relative Weight	Weight / Importance	Demanded Quality (Customer Requirements / "Whats")	1	2	3	4	5	6	7	8	9	Our Company	Competitor 1	Competitor 2
1	9	14.3	5.0	Complete surgical information (Pre, Intra, Post)	⊙	○	○		○	⊙		○	⊙	3	3	4
2	9	8.6	3.0	Less waiting time	○	○	○	▲	○	⊙	▲			2	3	3
3	9	11.4	4.0	Pleasant communication and response to queries	⊙	⊙		▲						2	4	4
4	9	11.4	4.0	Pleasant ambience, spacious rooms	▲			○		⊙	⊙			2	4	3
5	9	14.3	5.0	COVID safe, hygienic premises	○	○	○		⊙		○	○		3	3	4
6	3	11.4	4.0	Clean clothes for patients	○		○		○			▲		2	3	4
7	9	14.3	5.0	Efficient counselling with clarity of info being provided	○	○			⊙		○			4	4	2
8	9	14.3	5.0	Easy appointment process				⊙		▲				2	3	2
9		0.0	0.0													
10		0.0	0.0													

Competitive Analysis (0=Worst, 5=Best) — Our Company, Competitor 1, Competitor 2, Competitor 3, Competitor 4, Competitor 5

	1	2	3	4	5	6	7	8	9
Target or Limit Value	25	10	22	2 months	22 policies	10	2 months	12	20
Difficulty (0=Easy to Accomplish, 10=Extremely)	6	4	5	6	3	2	9	3	8
Max Relationship Value in Column	9	9	9	9	9	9	9	9	9
Weight / Importance	388.6	308.6	368.6	137.1	405.7	220.0	197.1	157.1	171.4
Relative Weight	16.5	13.1	15.7	5.8	17.2	9.3	8.4	6.7	7.3

Design thinking

How **M**ight **W**e reduce anxiety and stress levels of inpatients so that they feel at ease and are comfortable during their stay with available staff, infrastructure and time.
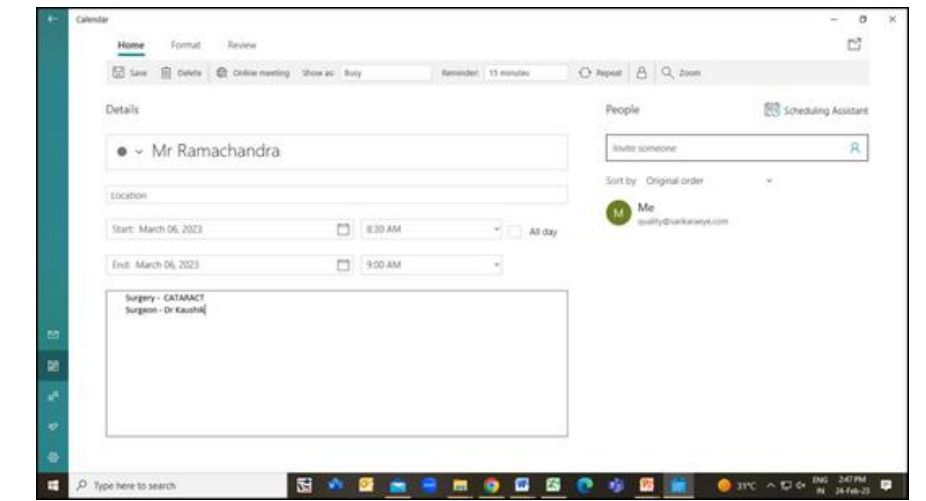
Team - Mix of nurses, doctors, management staff, optometrists

Welcome kit

Welcome kit
Dark cafe
Sankara Mascot
Snacks centre / Kiosk
Real time info through bot on surgery schedule
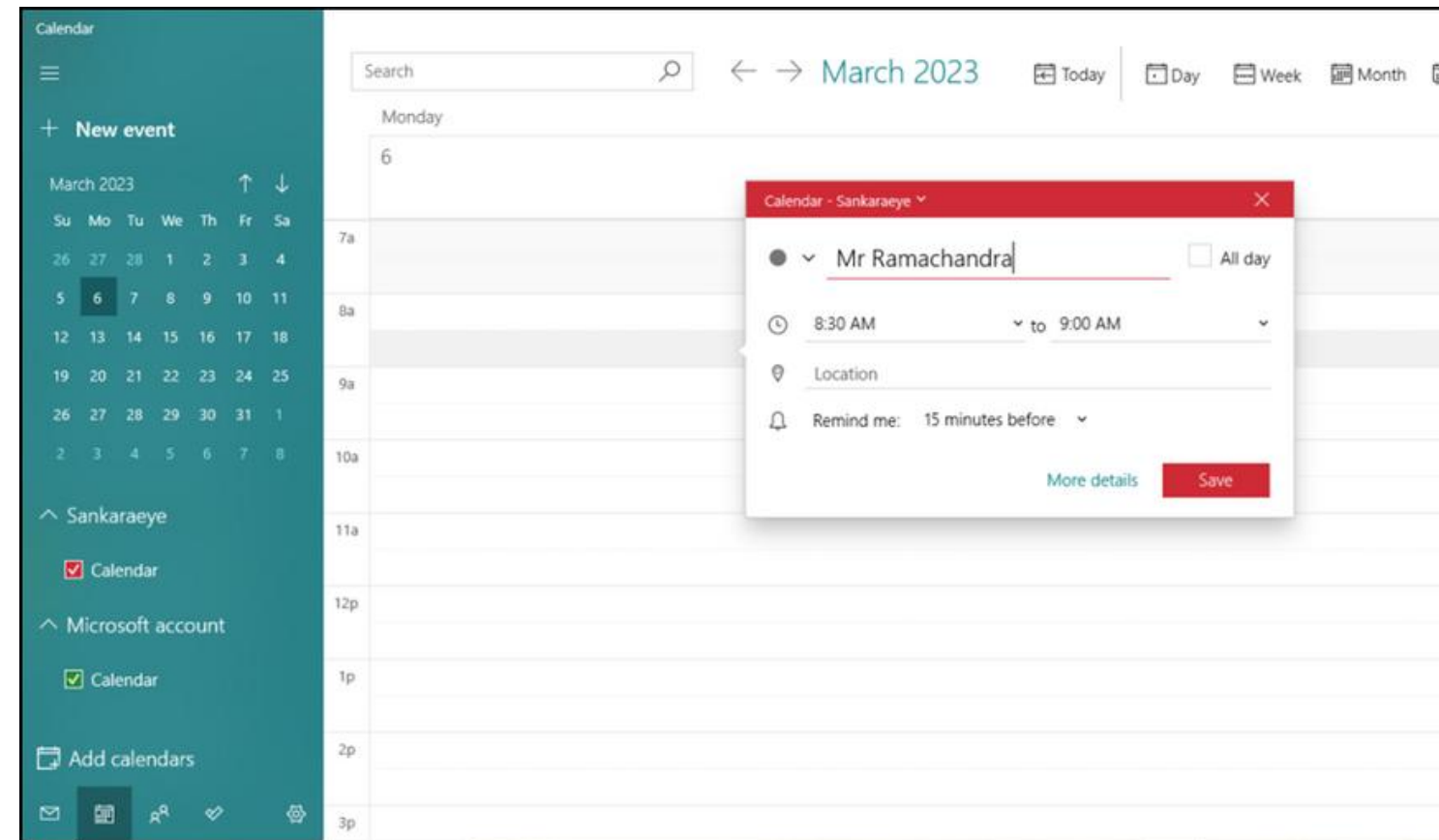I am satisfied Bell - KFC
Prebook breakfast – INDIGO
Soothing music
Happy wall - FEEDBACK
Activity for kids - AIRLINES
Infographics Interactive

Real time info of surgeries posted

Solution structure - AIM Model

AMBIENCE

Spacious counselling room, Soothing music , Happy wall
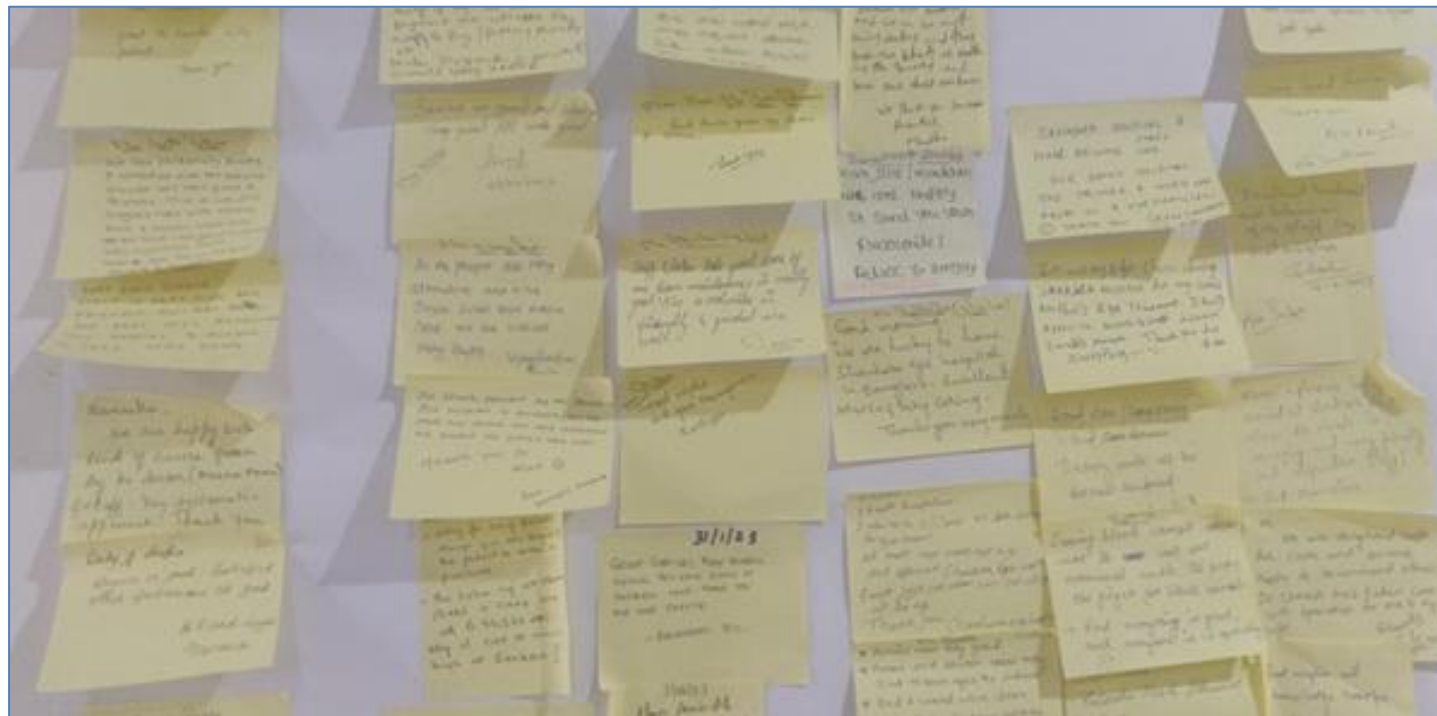
INFORMATION

Real time info of surgeries posted, A bot using ChatGPT on cataract surgery, Display of process flow chart , Videos on WhatsAPP
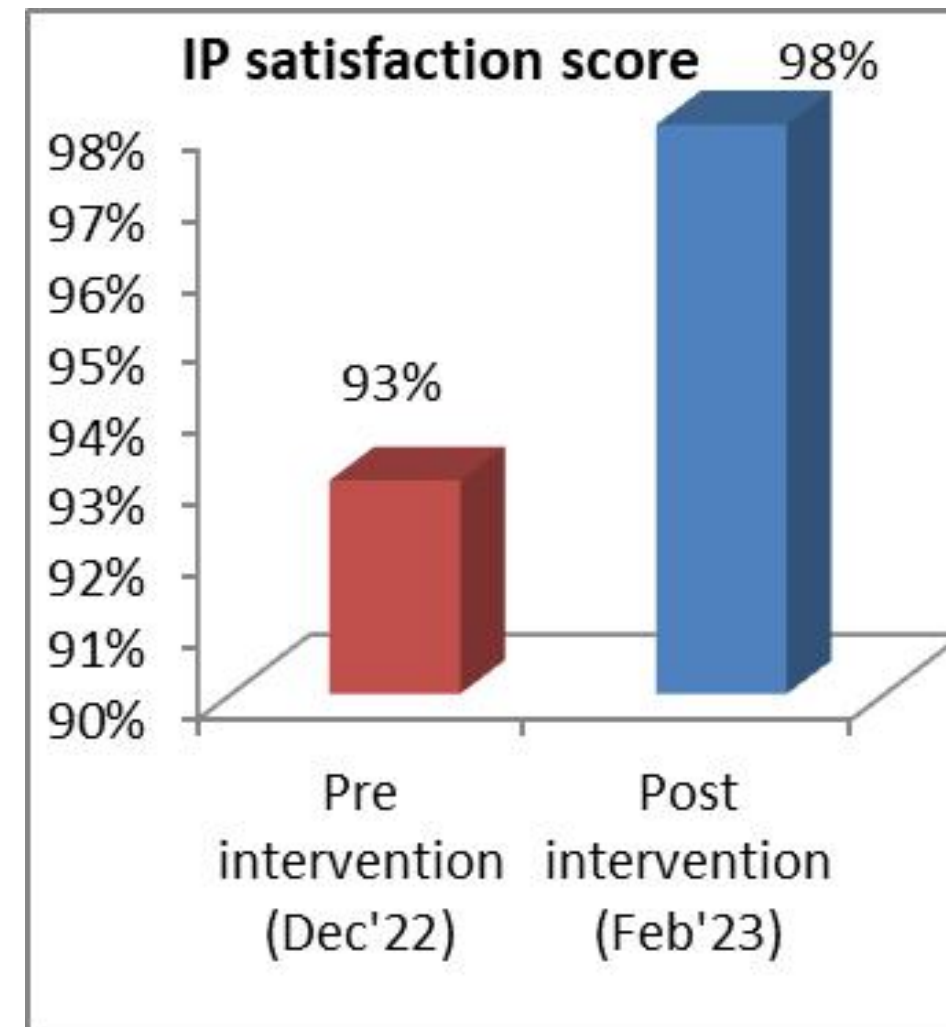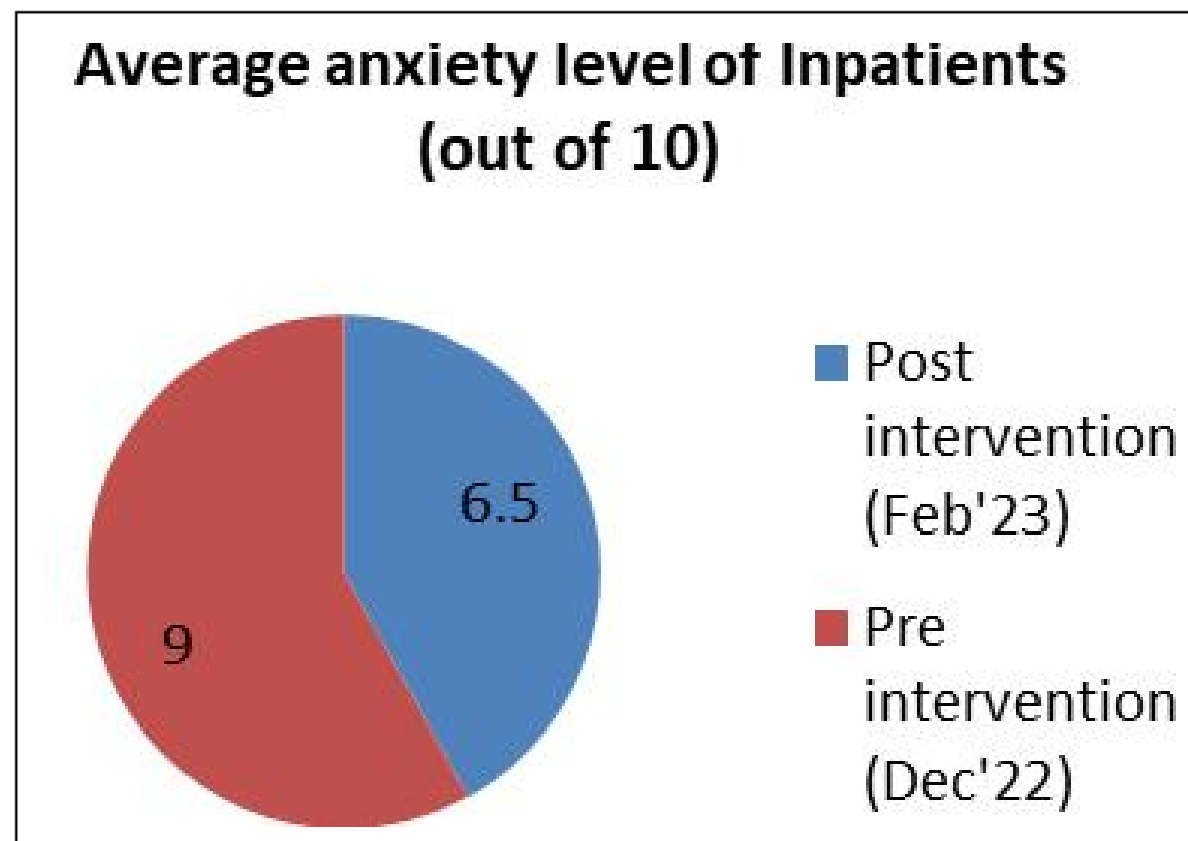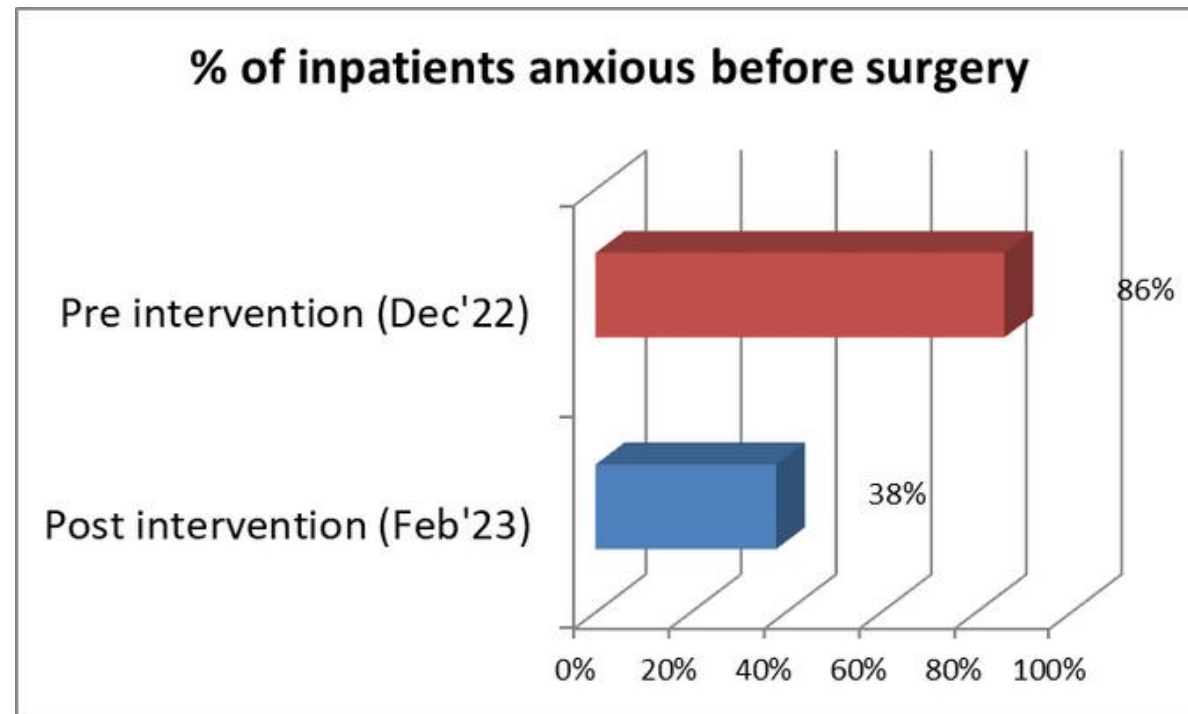
MOTIVATION

Staggering reporting time, Welcome kit
Scripted communication, Team building exercise

Happy Wall

Results

% of inpatients anxious before surgery

Pre intervention (Dec'22): 86%
Post intervention (Feb'23): 38%

(0% 20% 40% 60% 80% 100%)

Average anxiety level of Inpatients (out of 10)

- Post intervention (Feb'23): 6.5
- Pre intervention (Dec'22): 9

IP satisfaction score

Pre intervention (Dec'22): 93%
Post intervention (Feb'23): 98%

(90% 91% 92% 93% 94% 95% 96% 97% 98%)

Intangible results -

- **Trust** of patients and staff increased
- **realignement of system** to convenient workflow
- **Immediate redressal** of grievances
- **Interdepartmental** staff **communication** improved
- **Staff-Patient communication** improved.
- Improved **clarity of processes** amongst staff

Conclusion

While **KANO model** helped understand patient requirements and their relevance, **Design thinking** enables innovative solutions, implement them creatively and reduce anxiety levels in patients undergoing cataract surgery.

Good LEADERSHIP isn't about advancing yourself, it's about advancing the Team !

John C Maxwell