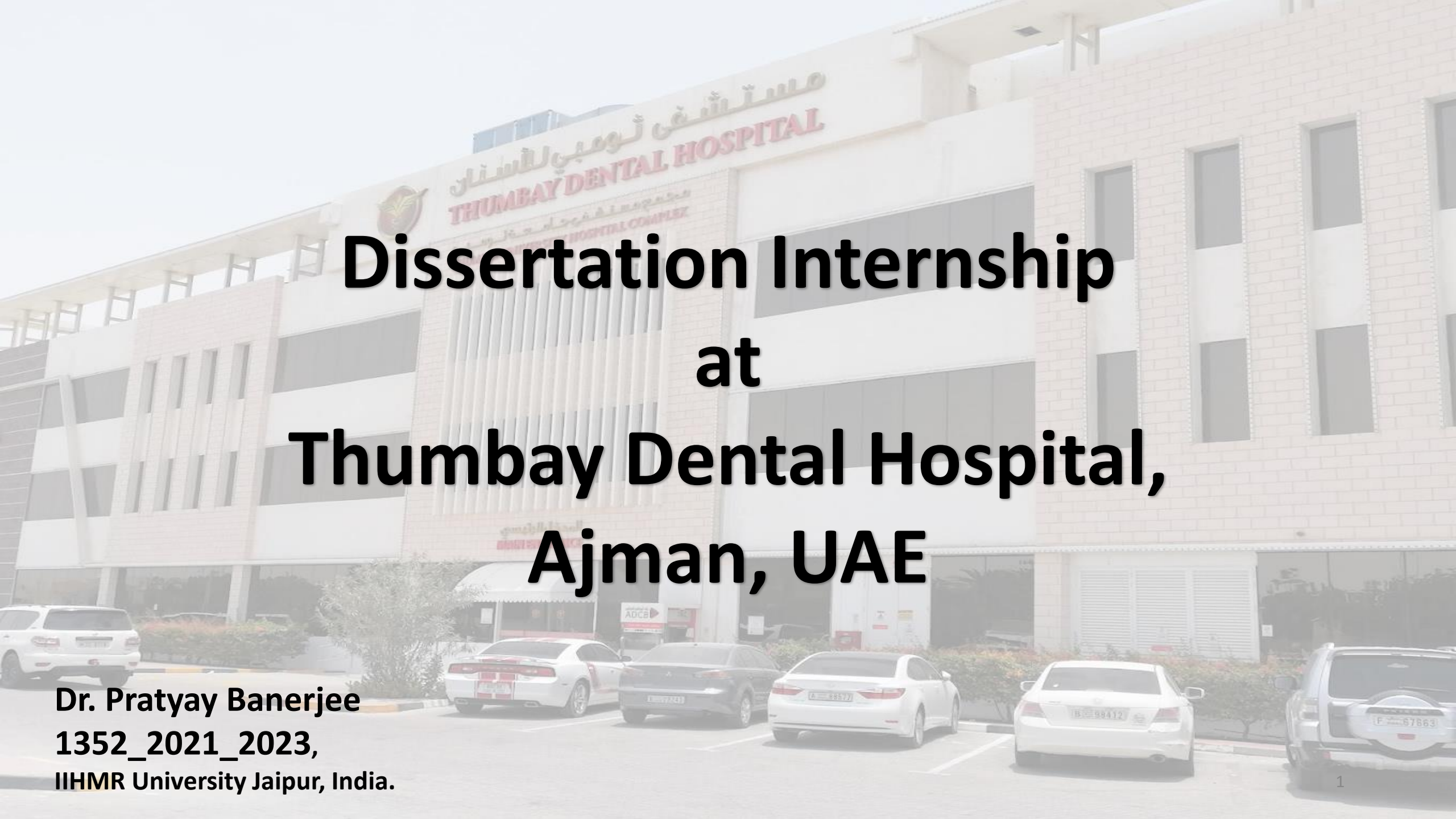


The background image shows the exterior of a modern, multi-story dental hospital building. The building has a light-colored facade with large windows and a prominent sign at the top that reads "THUMBAY DENTAL HOSPITAL" in English and Arabic. The sign also includes the text "HOSPITAL COMPLEX". Several cars are parked in front of the building, and there are some green plants and trees in the foreground.

Dissertation Internship at Thumbay Dental Hospital, Ajman, UAE

Dr. Pratyay Banerjee
1352_2021_2023,
IIHMR University Jaipur, India.

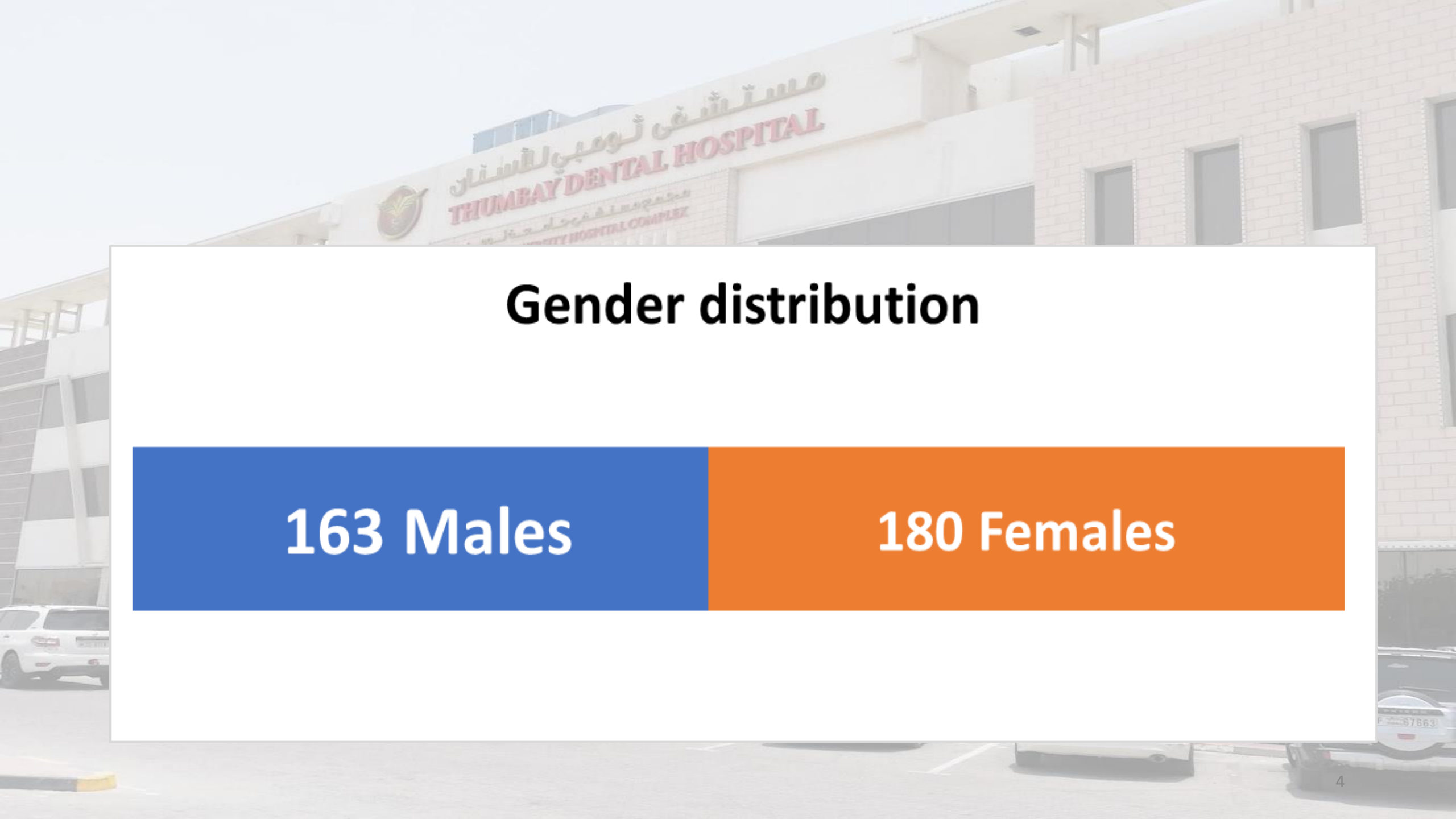
Abstract:

To estimate the quality-of-service patient satisfaction survey is done at the The Thumbay Dental Hospital, Ajman, UAE. The deficiency of service quality is due to process deficiency. Statistical control charts are great tools for detection of out-of-control processes. Statistical control charts can be implemented in the patient satisfaction survey data. They depict the overall picture of negative responses in graphical template. These negative responses can be investigated to detect process failures. The statistical control charts act as a filter to select those failed processes with detrimental outcomes from failed processes with less negative outcomes. The statistical control charts can be implemented in dental hospital to improve service quality and well as patient satisfaction. Twelve questions are used for the survey. The total number of respondents is four hundred and sixteen. The results are plotted in Statistical control charts of type p-chart and u-chart. Some out-of-control responses are detected in front desk service, nursing services biomedical services and pricing of treatment costs. Investigation is done for the root cause of problems. Recommendations like human resource training and upgrade, regular scheduled maintenance of equipment and expansion of health insurance network are provided for the quality improvement.

Keywords: Patient satisfaction survey, Statistical Control charts, Shewhart control charts, Dental Hospital Quality Assurance, Dental hospital Operations.

Objective:

1. To review the literature on the implementation of statistical control charts in hospital settings, focusing on their application in analyzing patient satisfaction survey data.
2. To develop a methodology for applying statistical control charts to patient satisfaction survey data including data collection, preprocessing, and analysis.
3. To apply the developed methodology to a real-world dataset of patient satisfaction survey data and identifying trends, variations, and areas for improvement.
4. To evaluate the effectiveness of the proposed methodology in identifying actionable insights for enhancing healthcare quality and patient satisfaction.
5. To provide recommendations for dental treatment providers and hospital policymakers on how to utilize statistical control charts to monitor and improve healthcare quality and patient satisfaction.

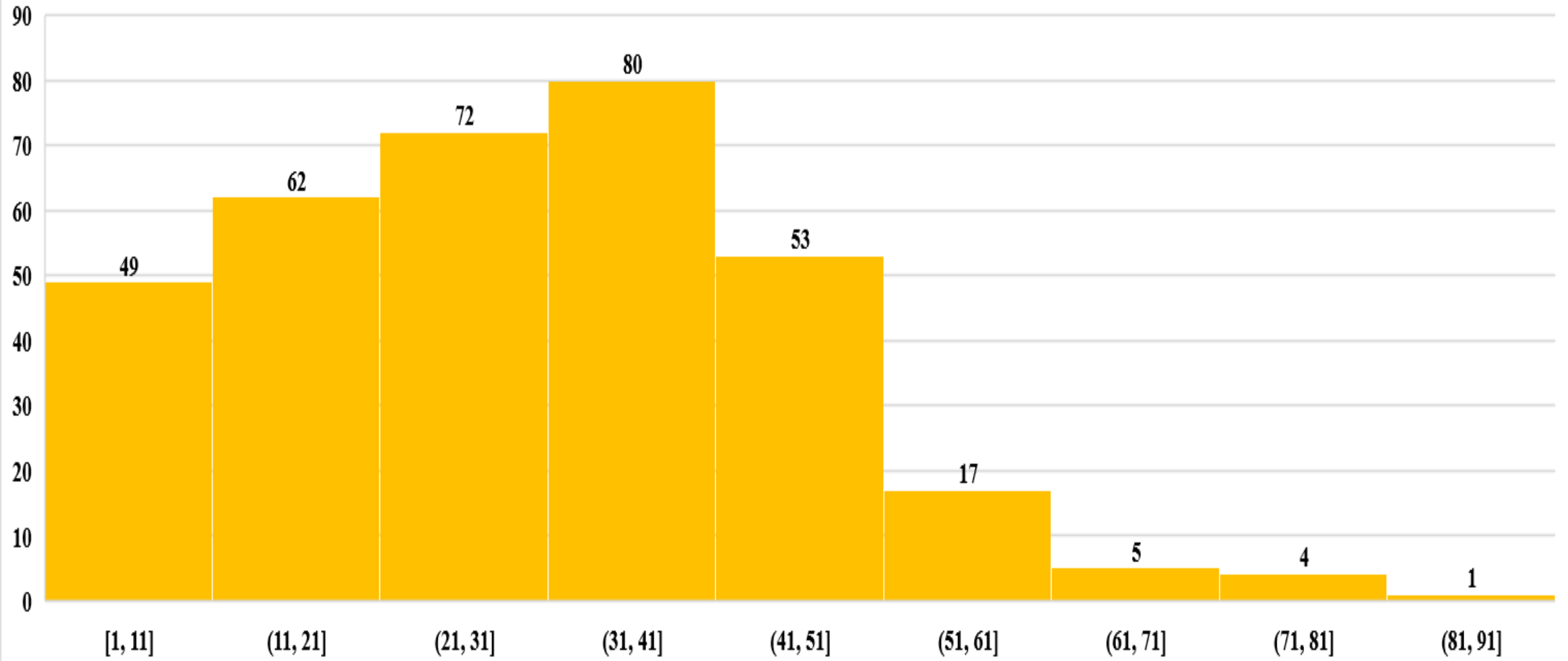


Gender distribution

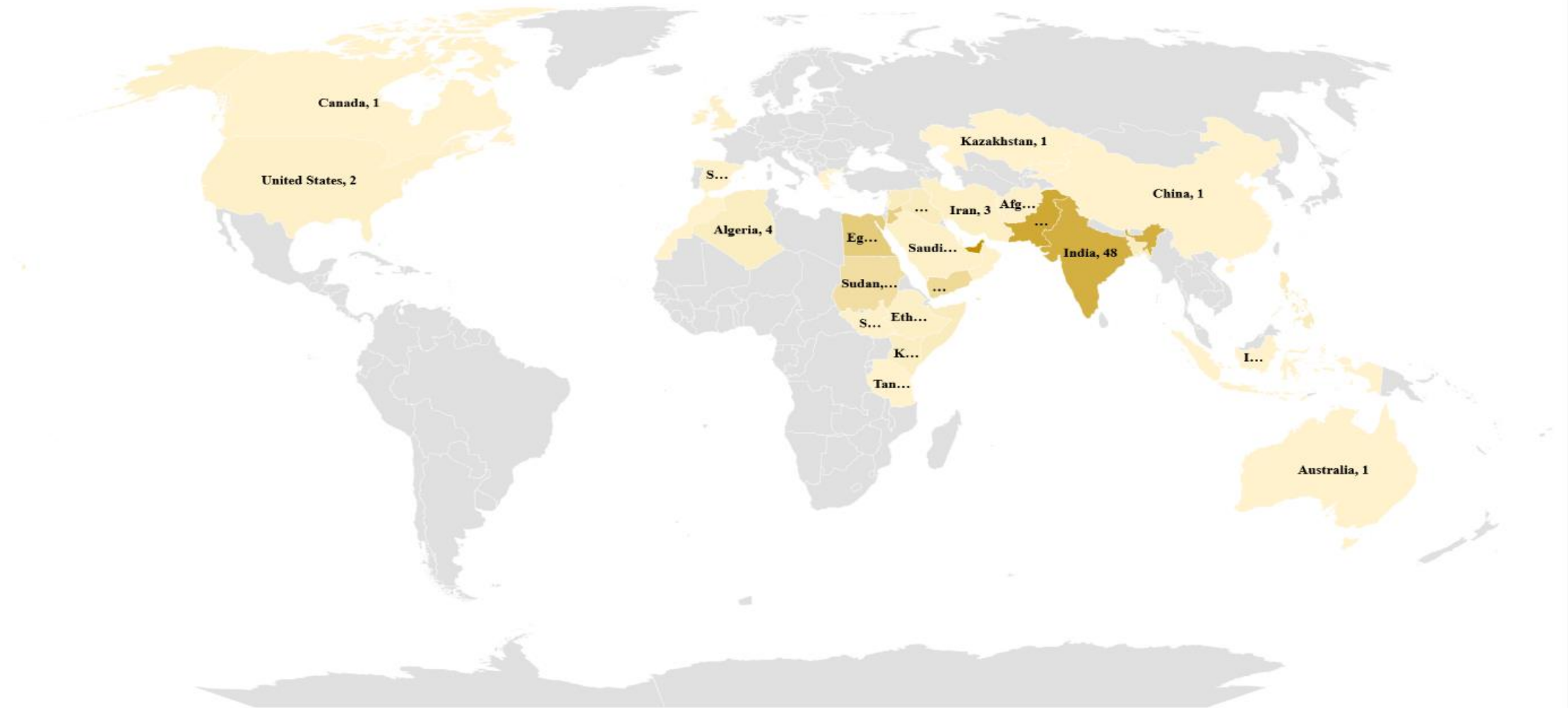
163 Males

180 Females

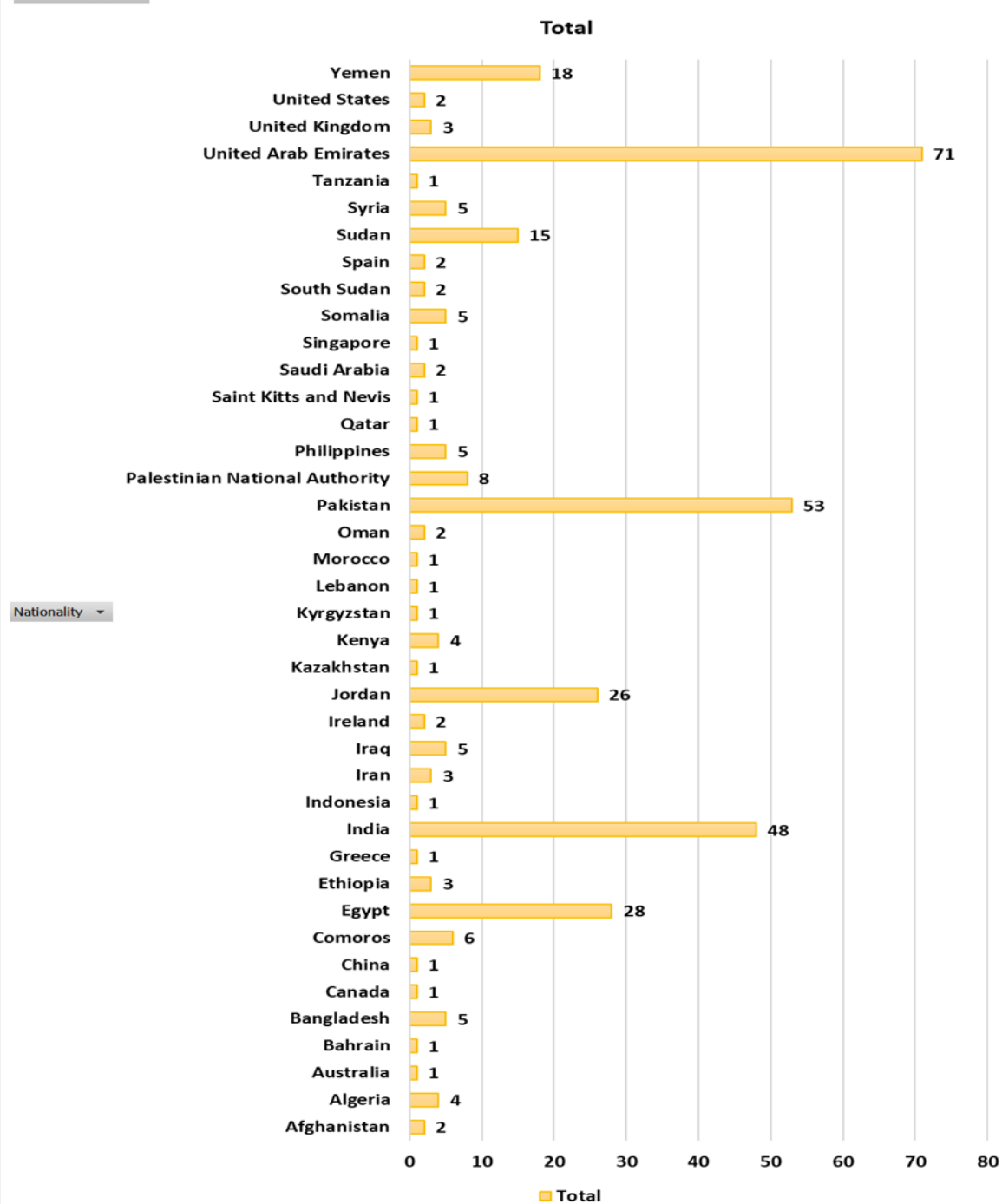
Age Distribution



Geographic Distribution



Nationalities count



Reliability Statistics

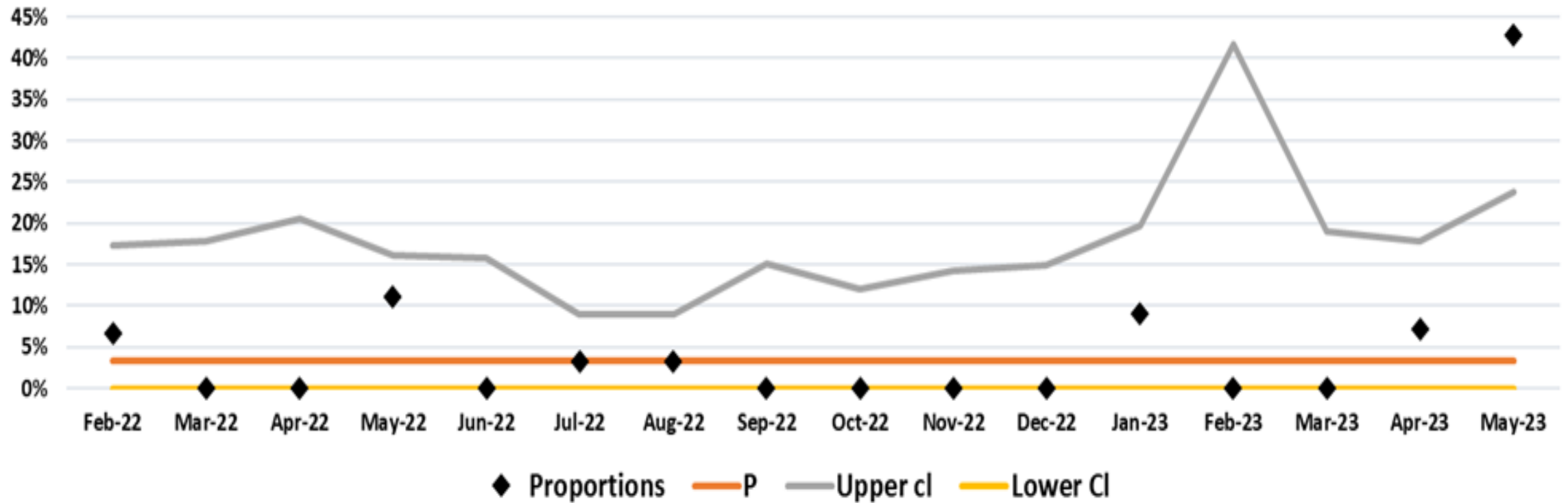
Cronbach's Alpha	N of Items
.939	12

Correlations

		Front Desk Ability	Front Desk Courtesy	Front Desk speed of service	Doctor Treatment	Doc Courtesy	Nurse Behaviour	Nurse Experience during procedure	Nursing Courtesy	Cleanliness and Hygiene	FACILITY Experience	Price	Time and Quality of service	Total_c
Front Desk Ability	Pearson Correlation	1	.834**	.813**	.628**	.649**	.609**	.591**	.661**	.513**	.660**	.353**	.651**	.829**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Front Desk Courtesy	Pearson Correlation	.834**	1	.876**	.543**	.606**	.665**	.587**	.627**	.511**	.610**	.308**	.642**	.817**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Front Desk speed of service	Pearson Correlation	.813**	.876**	1	.567**	.595**	.661**	.625**	.631**	.482**	.596**	.365**	.659**	.825**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Doctor Treatment	Pearson Correlation	.628**	.543**	.567**	1	.883**	.574**	.544**	.609**	.536**	.628**	.385**	.600**	.774**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Doc Courtesy	Pearson Correlation	.649**	.606**	.595**	.883**	1	.609**	.602**	.602**	.602**	.663**	.355**	.635**	.801**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Nurse Behaviour	Pearson Correlation	.609**	.665**	.661**	.574**	.609**	1	.835**	.749**	.638**	.682**	.372**	.681**	.831**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	415	415	415	415	415	415	415	415	415	415	415	415	415
Nurse Experience during procedure	Pearson Correlation	.591**	.587**	.625**	.544**	.602**	.835**	1	.816**	.657**	.638**	.402**	.716**	.826**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Nursing Courtesy	Pearson Correlation	.661**	.627**	.631**	.609**	.602**	.749**	.816**	1	.680**	.757**	.438**	.777**	.862**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Cleanliness and Hygiene	Pearson Correlation	.513**	.511**	.482**	.536**	.602**	.638**	.657**	.680**	1	.739**	.376**	.629**	.745**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
FACILITY Experience	Pearson Correlation	.660**	.610**	.596**	.628**	.663**	.682**	.638**	.757**	.739**	1	.487**	.667**	.835**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Price	Pearson Correlation	.353**	.308**	.365**	.385**	.355**	.372**	.402**	.438**	.376**	.487**	1	.496**	.597**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Time and Quality of service	Pearson Correlation	.651**	.642**	.659**	.600**	.635**	.681**	.716**	.777**	.629**	.667**	.496**	1	.853**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	416	416	416	416	416	415	416	416	416	416	416	416	415
Total_c	Pearson Correlation	.829**	.817**	.825**	.774**	.801**	.831**	.826**	.862**	.745**	.835**	.597**	.853**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	415	415	415	415	415	415	415	415	415	415	415	415	415

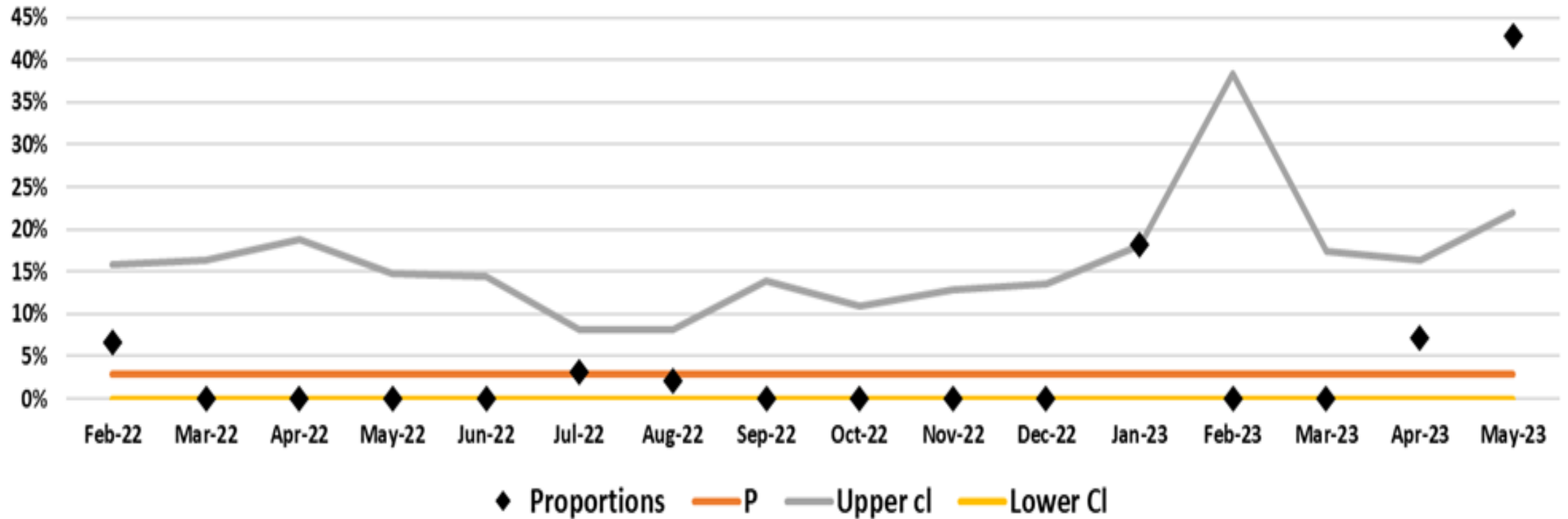
**. Correlation is significant at the 0.01 level (2-tailed).

Front desk ability to handle queries



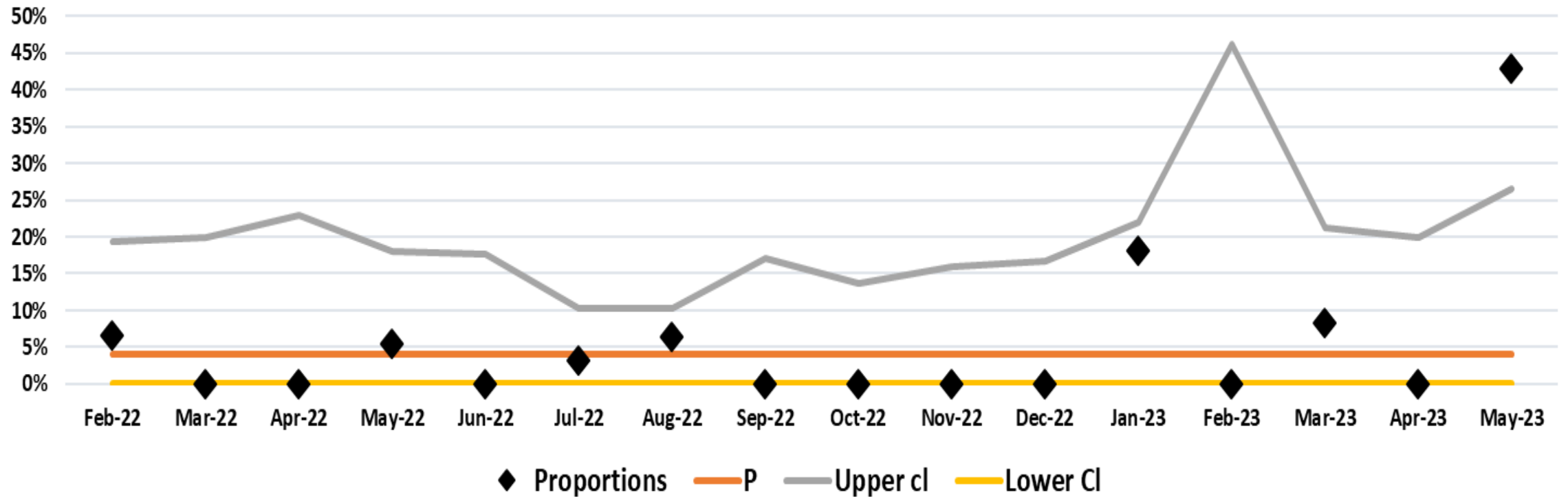
In figure above the response nonconformities for front desk ability to handle queries are within control for the months of February 2022 till April 2023. But it got out of control during the month of May 2023.

Front Office courtesy and help offered



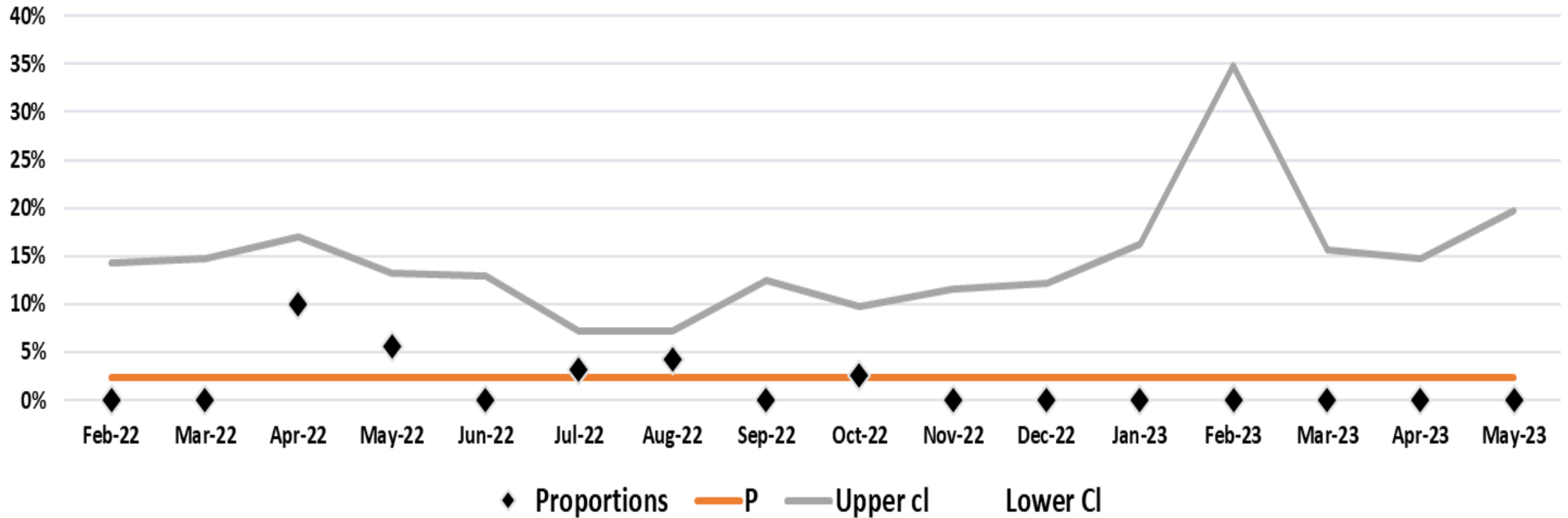
In figure above the response nonconformities for front office courtesy and help offered are within control for the months of February 2022 till April 2023. Although for the month of January 2023 it is on the border of upper control limit. But it got out of control during the month of May 2023.

Front Office Speed of service delivery

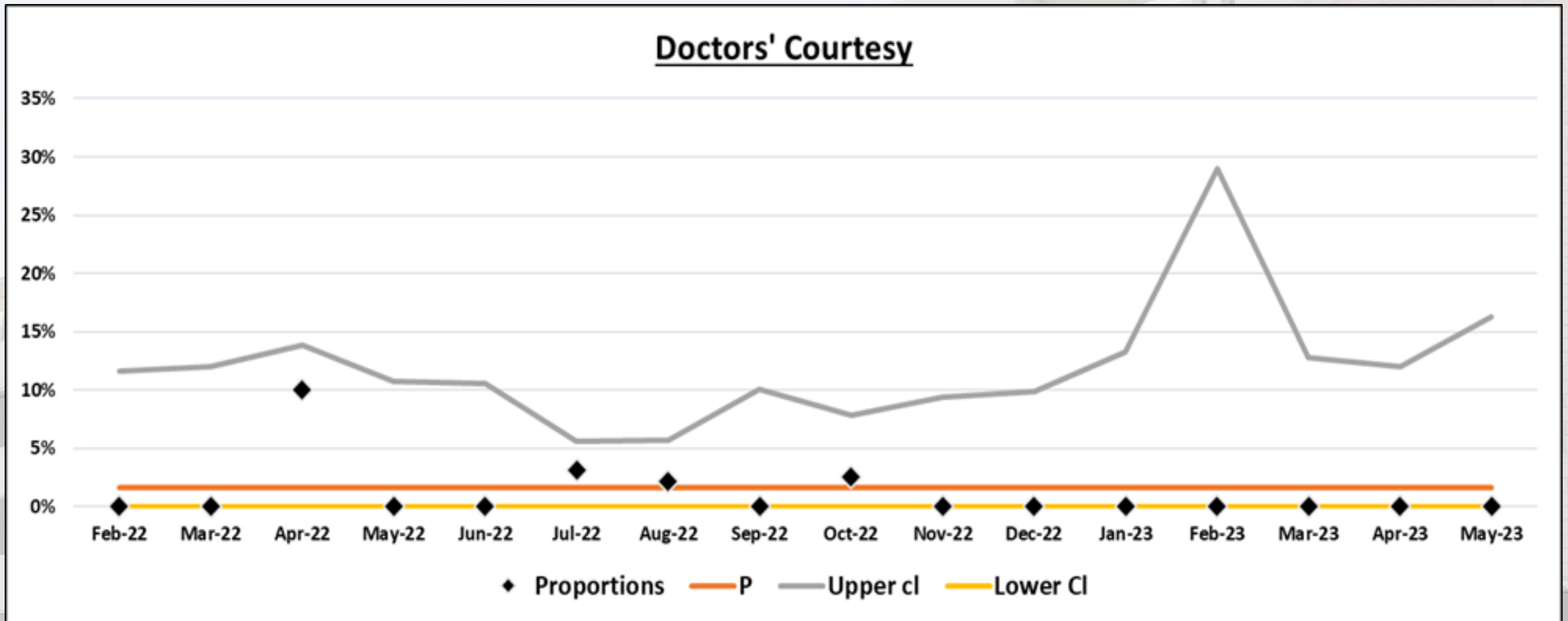


In figure above the response nonconformities for front office speed of service delivery are within control for the months of February 2022 till April 2023. Although for the month of January 2023 it is near the border of upper control limit. But it got out of control during the month of May 2023.

Doctors' Treatment and care

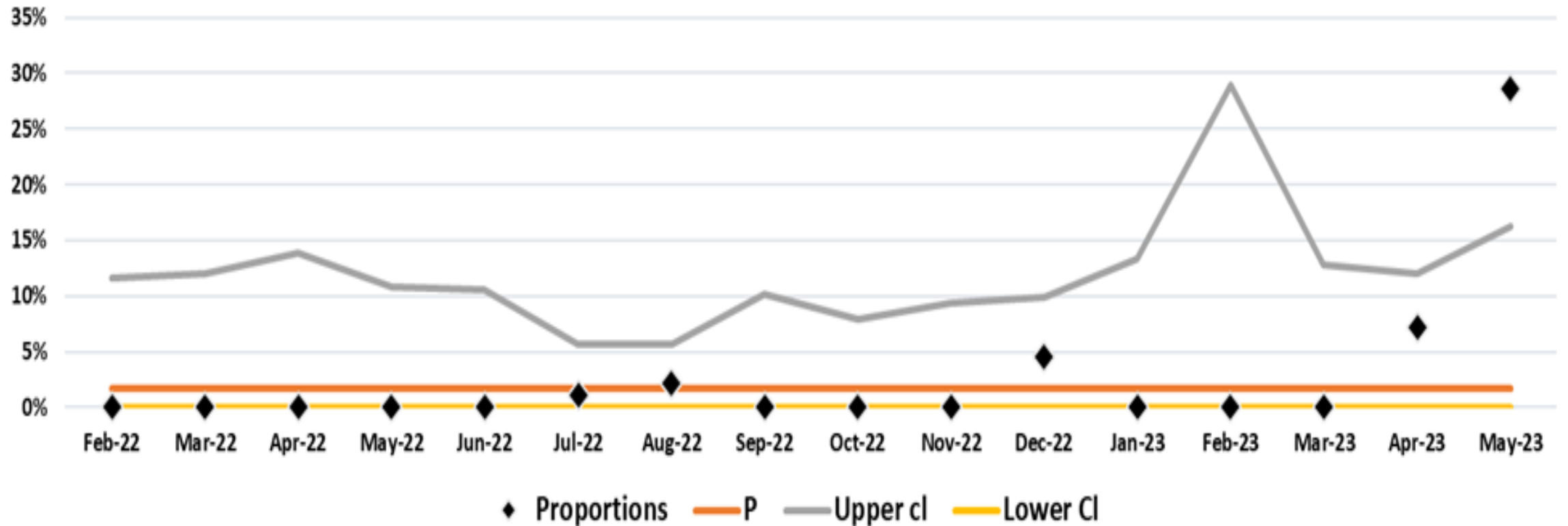


In figure above the response non-conformities for the process of doctors' treatment and care are within control for the months of February 2022 till May 2023.



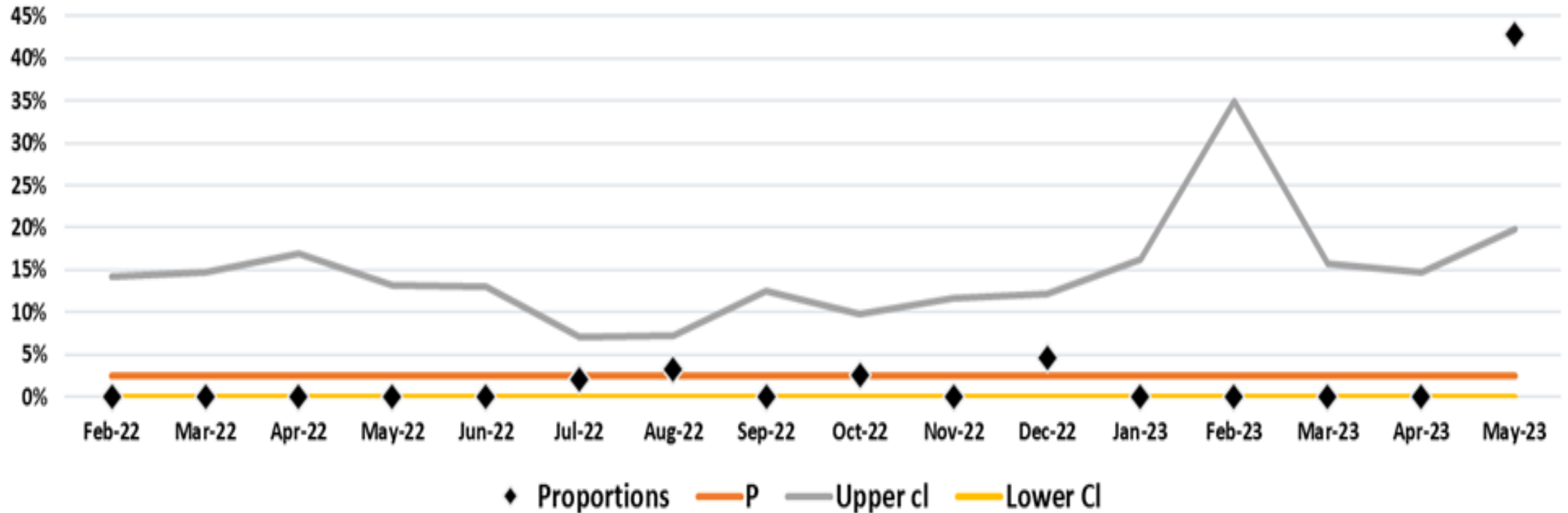
In figure above the response non-conformities for the process of doctors' courtesy are within control for the months of February 2022 till May 2023.

Nursing staff Behaviour



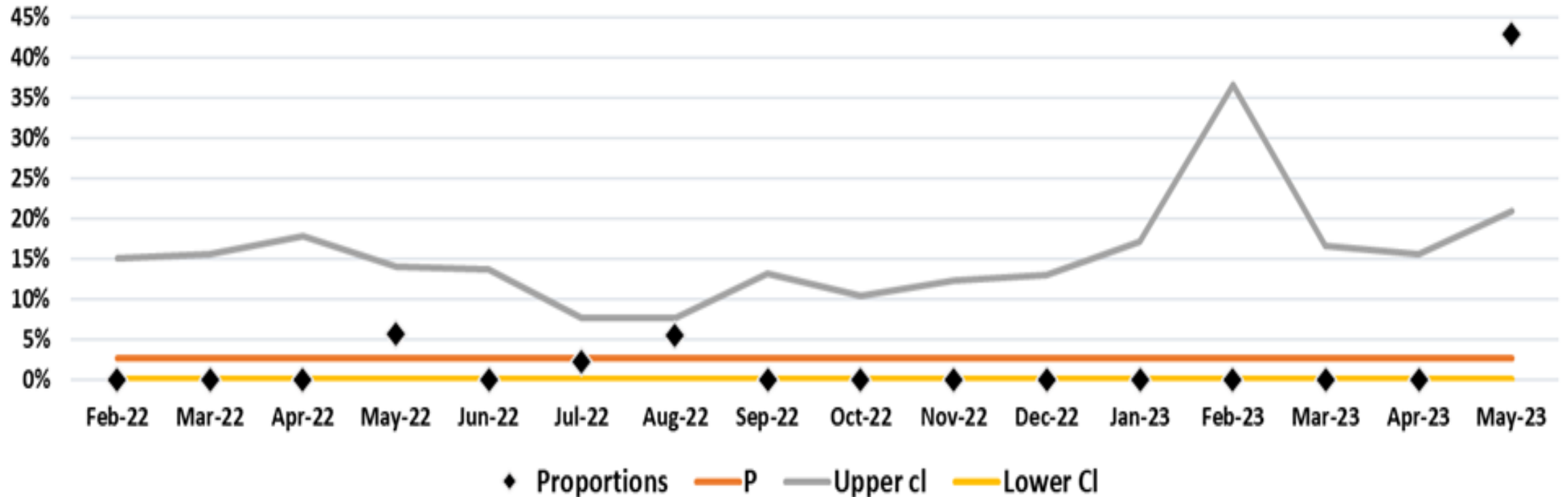
In figure above the response non-conformities for Nursing staff behavior are within control for the months of February 2022 till April 2023. Although for the month of April 2023 it is high but within the control limit. But it got out of control during the month of May 2023.

Experience about nursing staff during procedure

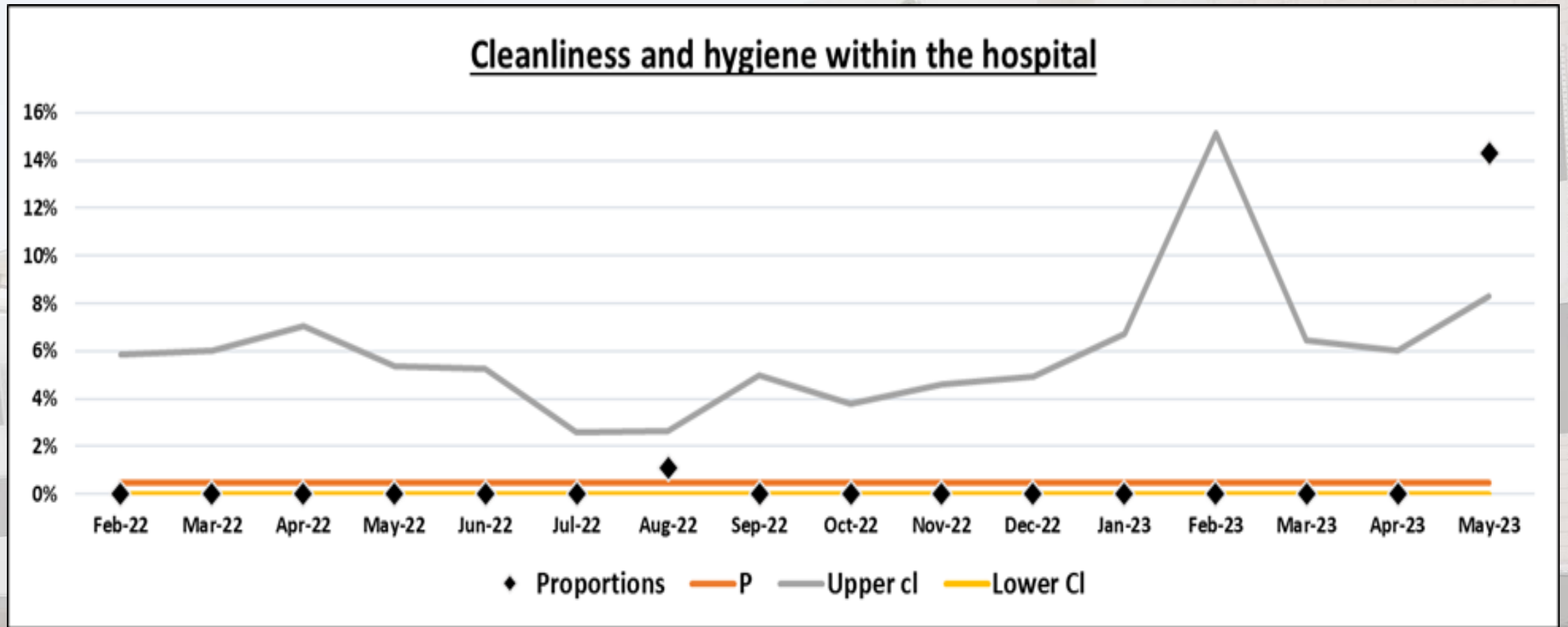


In figure above the response nonconformities for Experience about nursing staff during procedure are within control for the months of February 2022 till April 2023. But it got out of control during the month of May 2023.

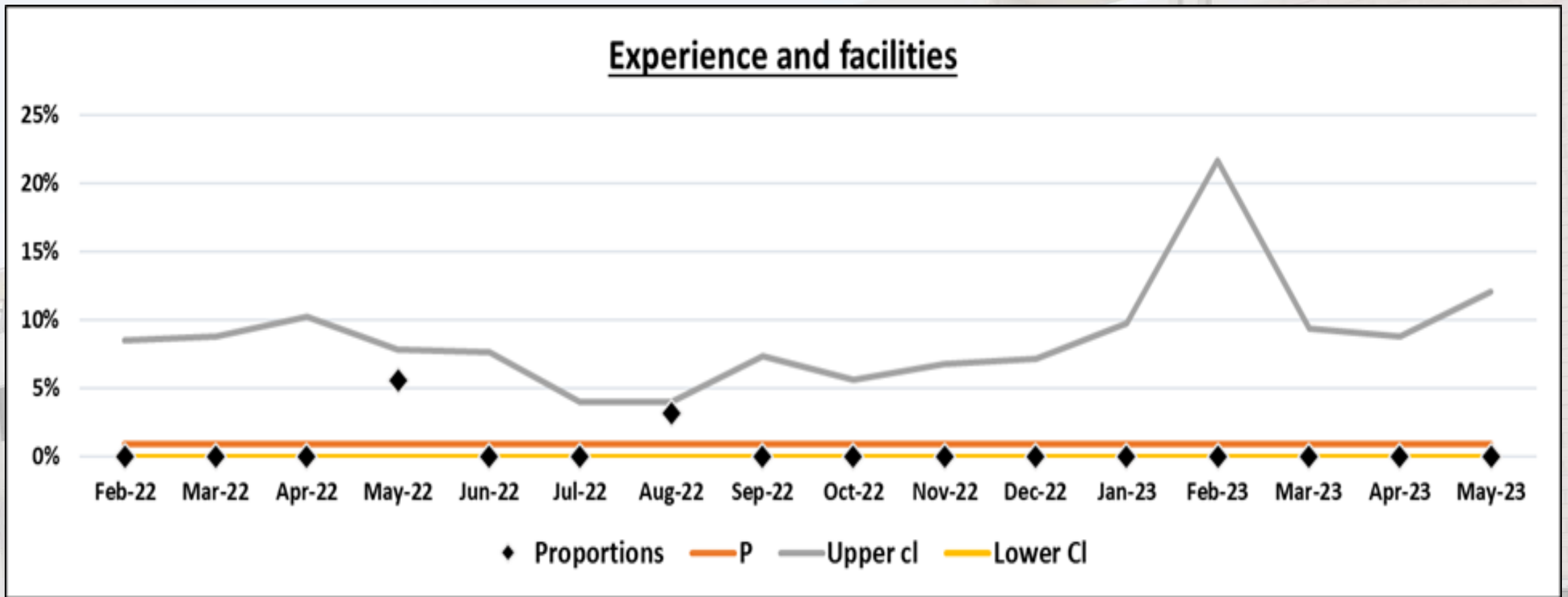
Nursing staff Courtesy and help



In figure above the response nonconformities for Nursing staff behavior are within control for the months of February 2022 till April 2023. Although for the month of April 2023 it is high but within the control limit. But it got out of control during the month of May 2023.

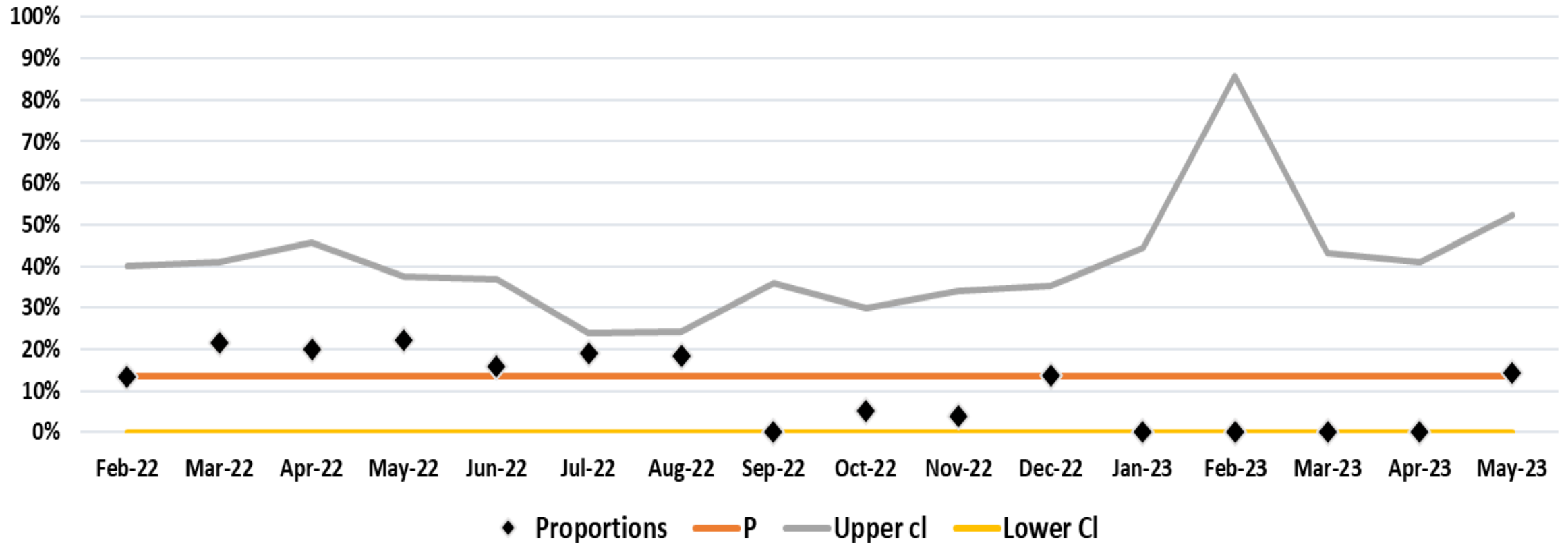


In figure above the response nonconformities for Cleanliness and hygiene within the hospital are within control for the months of February 2022 till April 2023. But it got out of control during the month of May 2023.



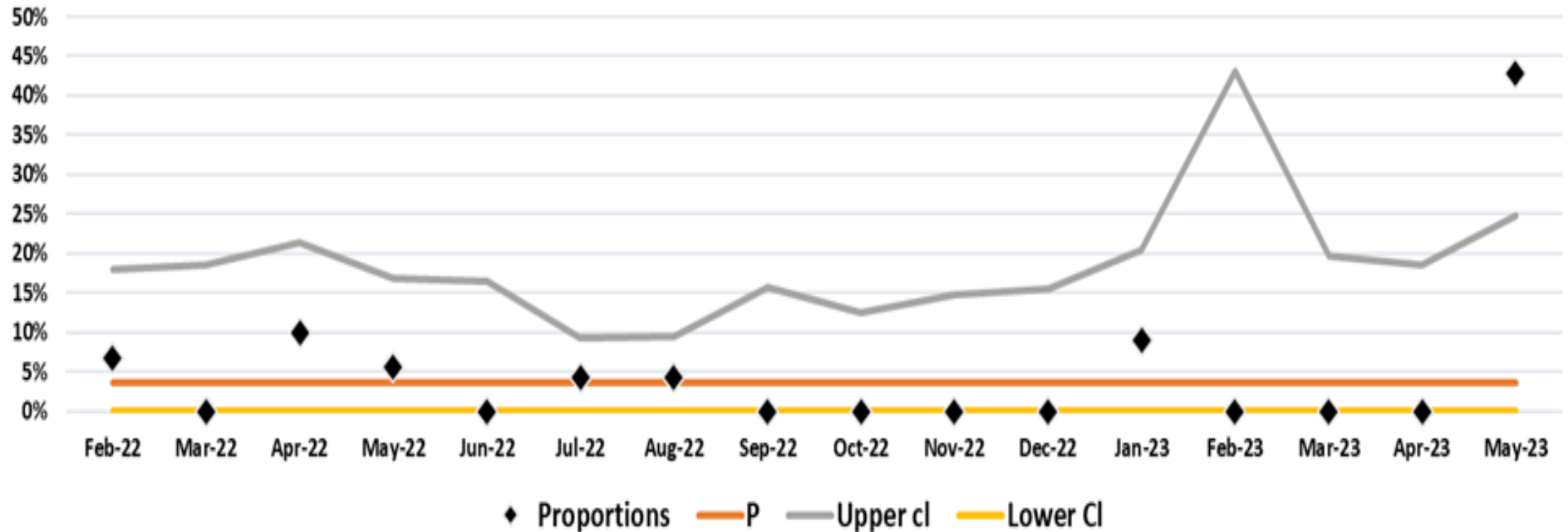
In figure above the response nonconformities for experience and facility within the hospital are within control for the months of February 2022 till May 2023.

Price of consultation and treatment

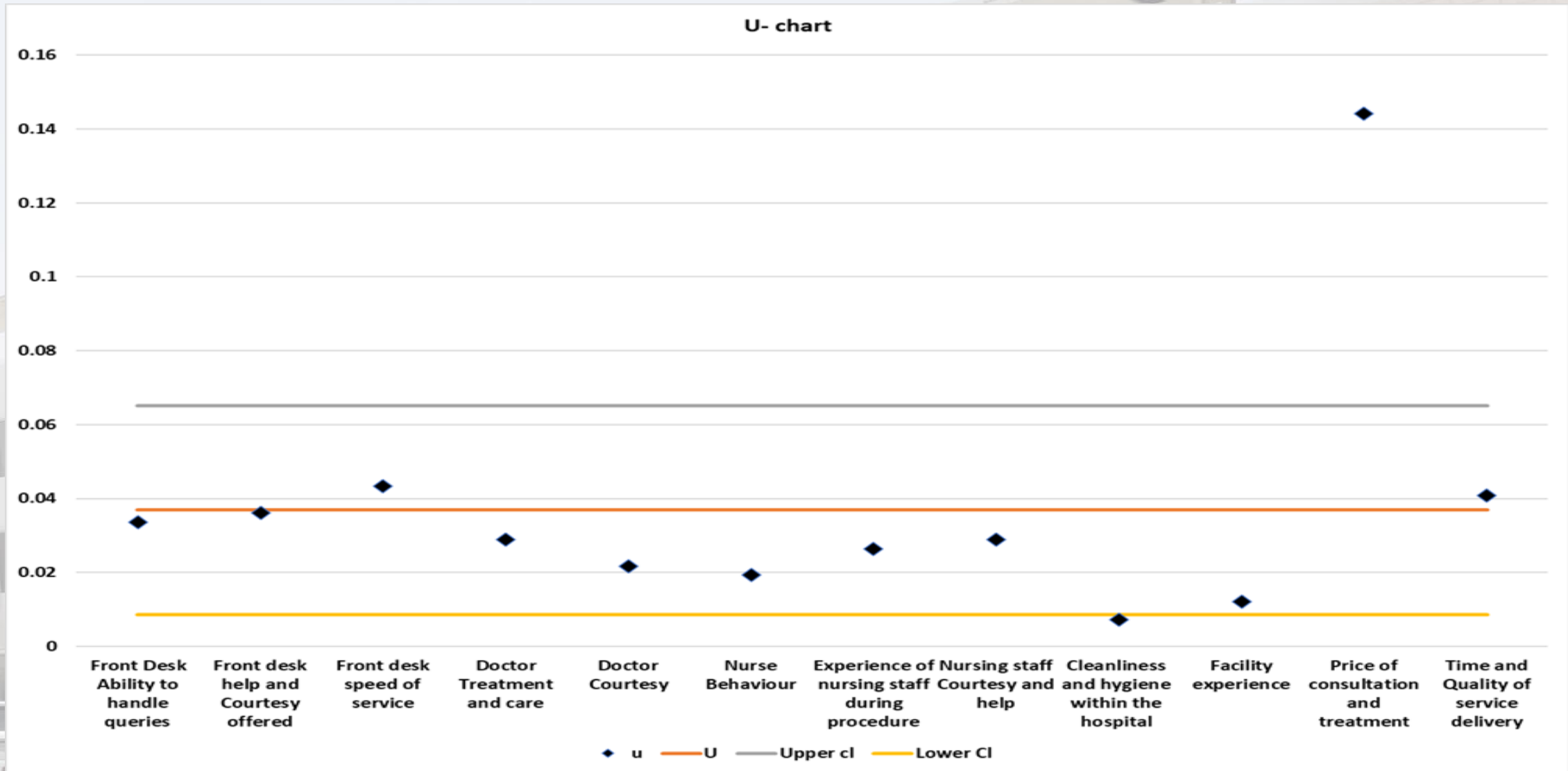


In figure above the response nonconformities for Price of consultation and treatment are within control for the months of February 2022 till May 2023.

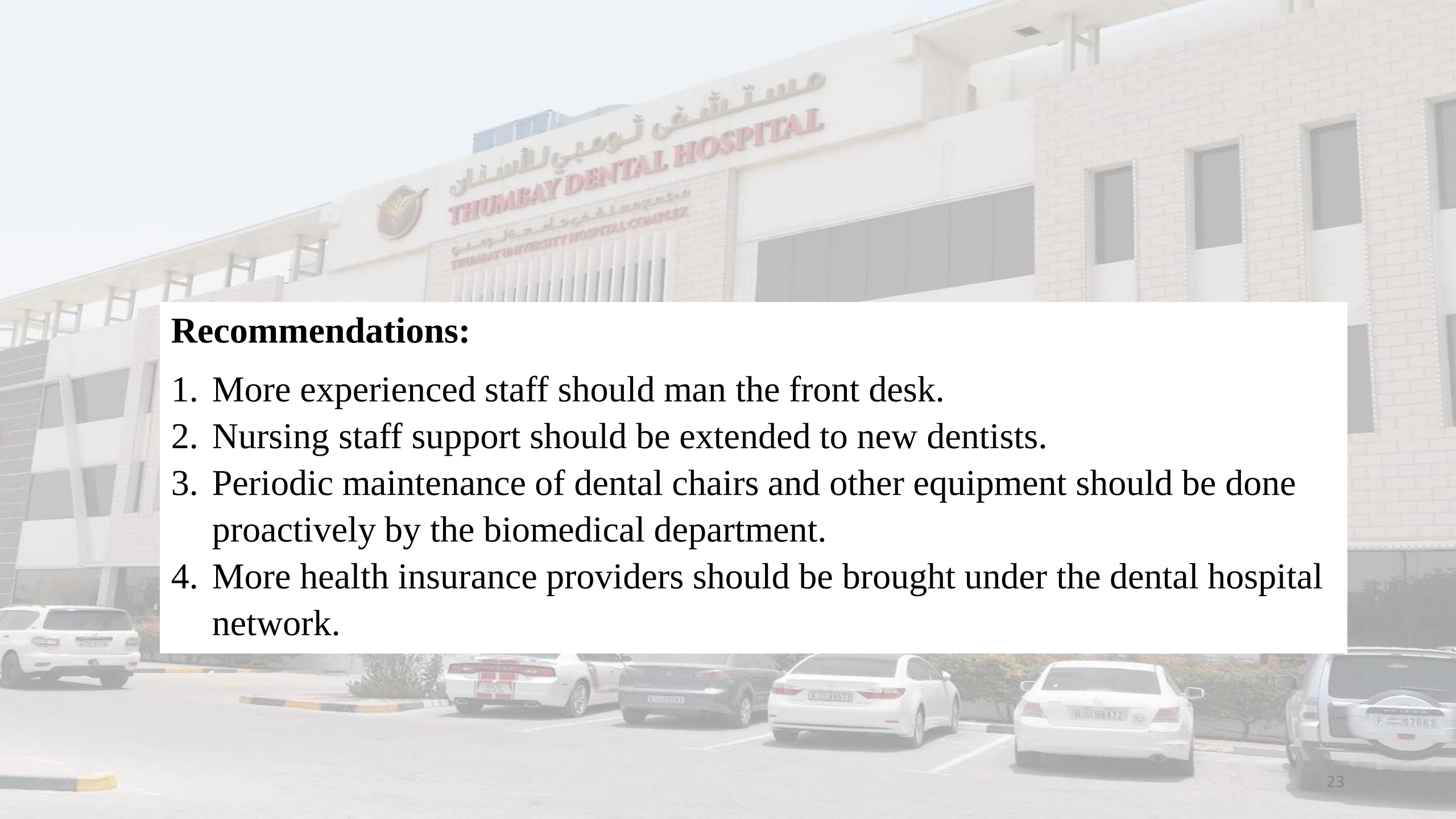
Time and quality of service delivery



In figure above the response nonconformities for Time and quality of service delivery are within control for the months of February 2022 till April 2023. But it got out of control during the month of May 2023.



The response nonconformities per question for all the months from February 2022 till May 2023 are being presented in figure above. The only out of control response is the question related to price of treatment.

The background image shows the exterior of the Thumbay Dental Hospital. The building is a multi-story structure with a light-colored facade. The name 'THUMBAY DENTAL HOSPITAL' is prominently displayed in red and gold lettering on the upper part of the building. Below it, in smaller text, is 'THUMBAY UNIVERSITY HOSPITAL COMPLEX'. There is also Arabic text above the English name. The building has several windows and a modern architectural style. In the foreground, there is a parking lot with several cars parked, including a white SUV on the left and a silver SUV on the right. The overall scene is bright and clear.

Recommendations:

1. More experienced staff should man the front desk.
2. Nursing staff support should be extended to new dentists.
3. Periodic maintenance of dental chairs and other equipment should be done proactively by the biomedical department.
4. More health insurance providers should be brought under the dental hospital network.



Thank You