

CHAPTER FOUR: RESULTS

One hundred and forty-four eligible participants were recruited into the study. The recruited participants were randomised to intervention (72 participants) and control (72 participants) groups. However, only 132 participants completed the study, twelve were lost to follow-up. The attrition rate was $\frac{12}{144} \times 100 = 8.3\%$. Out of the twelve participants that were lost to the follow-up, nine were missed in the theatre, while three were lost to follow-up after being discharged postoperatively. Sixty-seven participants in the control group completed the study while 65 participants completed the study in the intervention group. Only participants who completed the study were included in the analysis (per protocol analysis).

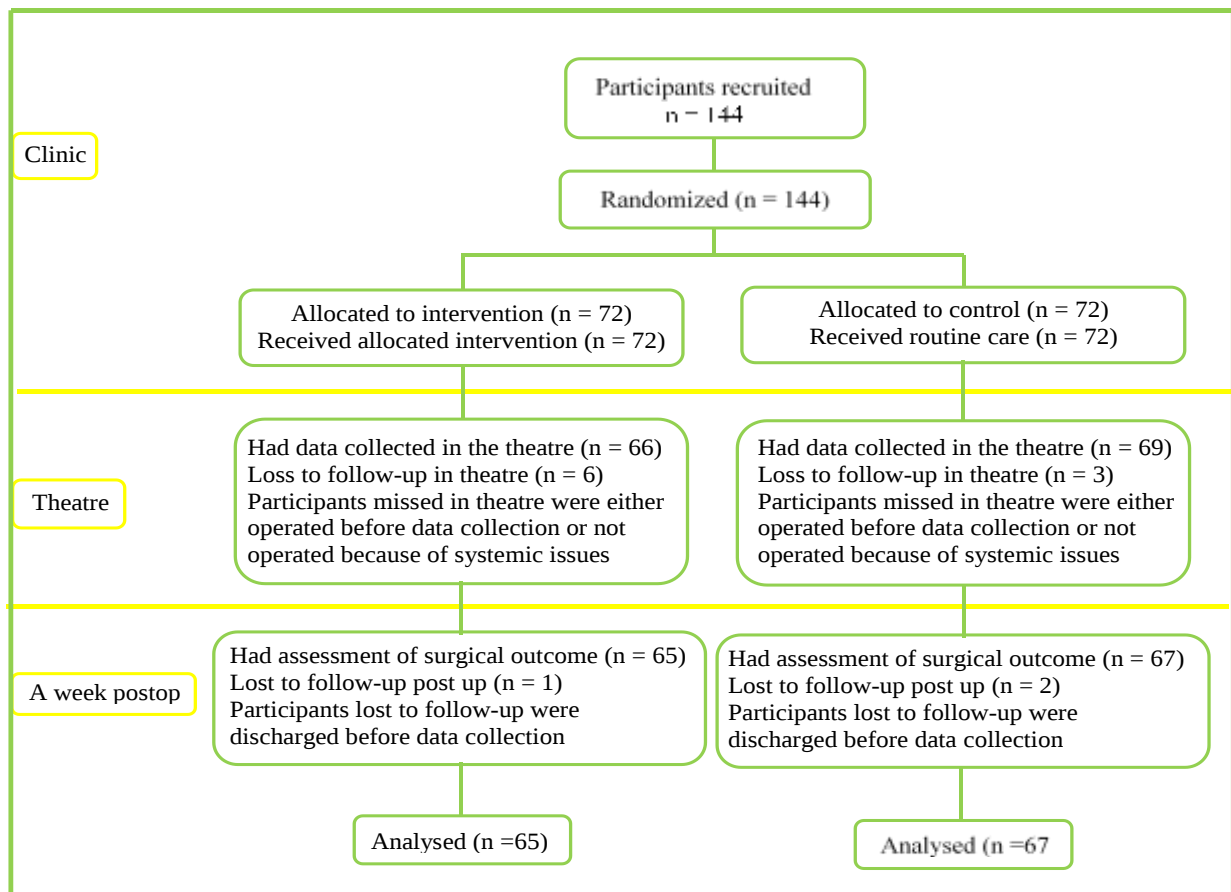


Figure 1: CONSORT diagram of participants' progress through the study

4.1 Effect of Brief psychological intervention on preoperative anxiety

4.41 Baseline comparison of socio-demographic characteristics of intervention and control groups:

Tables 7, 8 and 9 show that the two groups were the same (comparable) as there was no statistically significant difference in their sociodemographic and clinical characteristics.

Table 1: Comparing socio-demographic characteristics

Variables	Control (frequency (%))	Intervention (frequency (%))	χ^2	p-value
Age			1.233	0.745
Young age	26(56.5%)	20(43.5%)		
Early middle age	22(45.8%)	26(54.2%)		
Late middle age	15(51.7%)	14(48.3%)		
Elderly	4(44.4%)	5(55.6%)		
Gender			1.097	0.295
Female	31(46.3%)	36(53.7%)		
Male	36(55.4%)	29(44.6%)		
Religion			0.098	0.754
Islam	57(51.4%)	54(48.6%)		
Christianity	10(47.6%)	11(52.4%)		
Others	0(0%)	0(0%)		
Marital status			0.774*	0.891
Single	20(54.1%)	17(45.9%)		
Married	41(50.6%)	40(49.4%)		
Divorced/separated	2(50.0%)	2(50.0%)		
Widowed	4(40.0%)	6(60.0%)		
Tribe			5.117*	0.212
Hausa	43(50.6%)	42(49.4%)		
Yoruba	7(87.5%)	1(12.5%)		

Igbo	4(40.0%)	6(60.0%)		
Others	13(44.8%)	16(55.2%)		
Occupation			3.285	0.863
Civil servant	19(52.8%)	17(47.2%)		
Traders	17(47.2%)	19(52.8%)		
Housewives	5(55.6%)	4(44.4%)		
Artisans	3(50.0%)	3(50.0%)		
Farming	5(50.0%)	5(50.0%)		
Retired	1(25.0%)	3(75.0%)		
Unemployed	1(25.0%)	3(75.0%)		
Others	16(59.3%)	11(40.7%)		
Education status			2.964	0.564
None	0(0%)	2(100%)		
Quranic	11(55.0%)	9(45.0%)		
Primary	7(58.3%)	5(41.7%)		
Secondary	12(44.4%)	15(55.6%)		
Tertiary	67(50.8%)	65(49.2%)		

* Fisher's exact test, ** statistically significant

Table 2: Comparing baseline clinical characteristics

Variables	Control Frequency(percentage)	Intervention Frequency(percentage)	χ^2	p-value
Comorbidity			8.078	0.185
No diseases	48(48.5%)	51(51.5%)		
Hypertension	14(70.0%)	6(30.0%)		
Hypertension/Diabetes	4(66.7%)	2(33.3%)		
Hypertension/Osteoarthritis	0(0%)	1(100%)		
Diabetes	0(0%)	2(100%)		

Others	2(40%)	3(60.0%)		
Past surgery			0.885	0.347
No	39(47.6%)	43(52.4%)		
Yes	28(56.0%)	22(44.0%)		
Previous transfusion			0.939	0.333
No	41(47.7%)	45(52.3%)		
Yes	26(56.6%)	20(43.4%)		

Table 3: Comparing baseline clinical characteristics of the groups

Variables	Control (mean±SD)	Intervention (mean±SD)	t-test	p-value
Respiratory rate	20.73±2.49	20.32±3.02	0.85	0.397
Pulse rate	86.96±10.62	85.32±12.56	0.81	0.421
Systolic blood pressure	120.79±13.88	118.62±15.81	0.84	0.402
Diastolic blood pressure	78.12±10.100	75.78±9.69	1.36	0.178

4.42 Post-intervention comparison of clinical characteristics

Post-intervention (in the theatre), as shown in Table 10, there was a statistically significant lower respiratory and pulse rate among the intervention compared to the control group. The mean respiratory rate was 2.83 cycles per minute lower while the mean pulse rate was 8.11 beats per minute lower in the intervention group. However, there was no significant difference in systolic and diastolic blood pressure control between the groups.

Table 4: Post-intervention comparison of clinical characteristics

Variables	Control	Intervention	t-test	p-value
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	(mean±SD)	(mean±SD)		
Respiratory rate	24.84 ±6.39	22.03±6.84	3.33	0.001**
Pulse rate	94.34 ±14.99	86.23 ±12.90	2.34	0.021**
Systolic blood pressure	128.18±13.94	124.28±15.36	1.34	0.182
Diastolic blood pressure	80.16±10.78	78.06±9.52	1.19	0.238

4.43 Comparison of baseline preoperative anxiety and need for information between control and intervention groups

As shown in Table 11, there was no statistically significant difference in the prevalence of preoperative anxiety among the control and the intervention groups. The need for information also did not show a significant difference between the groups. Therefore, the anxiety status and need for information were equal between groups at the beginning of the study.

Table 5: Comparing pre-intervention preoperative anxiety status and need for information

Variables	Control	Intervention	χ^2	p-value
	Frequency(percentage)	Frequency(percentage)		
Preoperative anxiety			2.118	0.139
No	59(88.1%)	51(78.5%)		
Yes	8(11.9%)	14(21.5%)		
Need of information			2.065	0.356
Little or no need for information	38(56.7%)	29(44.6%)		

Average need for information	19(28.4%)	22(33.8%)
High need for information	10(14.9%)	14(21.6%)

* Fisher's exact test, ** statistically significant

4.44 Post-intervention comparison of preoperative anxiety and need for information

As shown in Table 12, post-intervention, the prevalence of preoperative anxiety was statistically higher among the control group (47.8%) than the intervention group (20.0%). Similarly, the need for information was significantly lower among the intervention group. The statistically significantly lower proportion of preoperative anxiety and the need for information among the intervention group indicated the role of brief psychological intervention in reducing the prevalence of preoperative anxiety and the need for information.

Table 6: Comparing post-intervention preoperative anxiety and the need for information

Variables	Control Frequency(percentage)	Intervention Frequency(percentage)	χ^2	p-value
Preoperative anxiety			11.316	0.001**
No	35(52.2%)	52(80.0%)		
Yes	32(47.8%)	13(20.0%)		
Need of information			7.11	0.029**
Little or no need for information	26(38.8%)	40(61.5%)		
Average need for information	32(47.8%)	18(27.7%)		
High need for information	9(13.4%)	7(10.8%)		

** Statistically significant

4.45 Association of brief psychological intervention with preoperative anxiety

The prevalent of preoperative anxiety increased by 35.9% from 11.9% (baseline in the clinic, table 11) to 47.8% (post-intervention in the theatre, table 12) among the control group, while it reduced by 1.5% from 21.5% (baseline in the clinic, table 11) to 20.0% (post-intervention in the theatre, table 12) among the intervention group. As shown in Table 13, there was a significant association between brief psychological intervention and preoperative anxiety with a lesser prevalence of preoperative anxiety (20.0%) among the intervention group compared to the control group (47.8%) of ($\chi^2 = 11.316$ p-value = 0.001). Participants who had brief psychological intervention were 58.1% less likely to have preoperative anxiety than participants in the control group (RR = 0.419, confidence interval = 0.242 – 0.724).

Table 7: Bivariate analysis of preoperative anxiety and brief psychological intervention

Variables	Not Anxious Frequency (%)	Anxious Frequency (%)	χ^2	p-value	Relative risk	Confidence interval
Intervention status			11.316	0.001**	0.419	0.242 – 0.724
Intervention	52(80.0%)	13(20.0%)				
Control	35(52.2%)	32(47.8%)				

* Fisher's exact test, ** statistically significant

4.2 Comparing surgical outcomes between the groups

4.51 Surgical outcome

Postoperative pain: The average pain score among the participants was 5.67 while the minimum pain score among the participants was zero and the maximum was 10. Up to 40.9%

of the participants had severe postoperative pain while 37.1% had moderate postoperative pain, and only 22% had mild pain.

Satisfaction: Participants who were least satisfied with their care had a score of two while the most satisfied participants' satisfaction score was 5 with a mean satisfaction score of 3.89. The majority (72%) of the participants were satisfied with the care received.

Complication: The prevalence of complications among the participants was 6.1% and the most common complication was infection occurring in 3.8% of the participants. Infection was followed by haemorrhage which occurred in 2.3% of the participants. A patient developed both haemorrhage and infection.

Death: One participant (0.8%) died during the study.

Intensive care unit admission: One participant (0.8%) had intensive care unit admission during the study period.

Wound healing: The prevalence of delayed wound healing among the participants was 2.3 %,

Length of hospital stay: The proportion of the participants with prolonged hospital stay was 3%.

4.52 Comparison of the surgical outcome between control and intervention groups

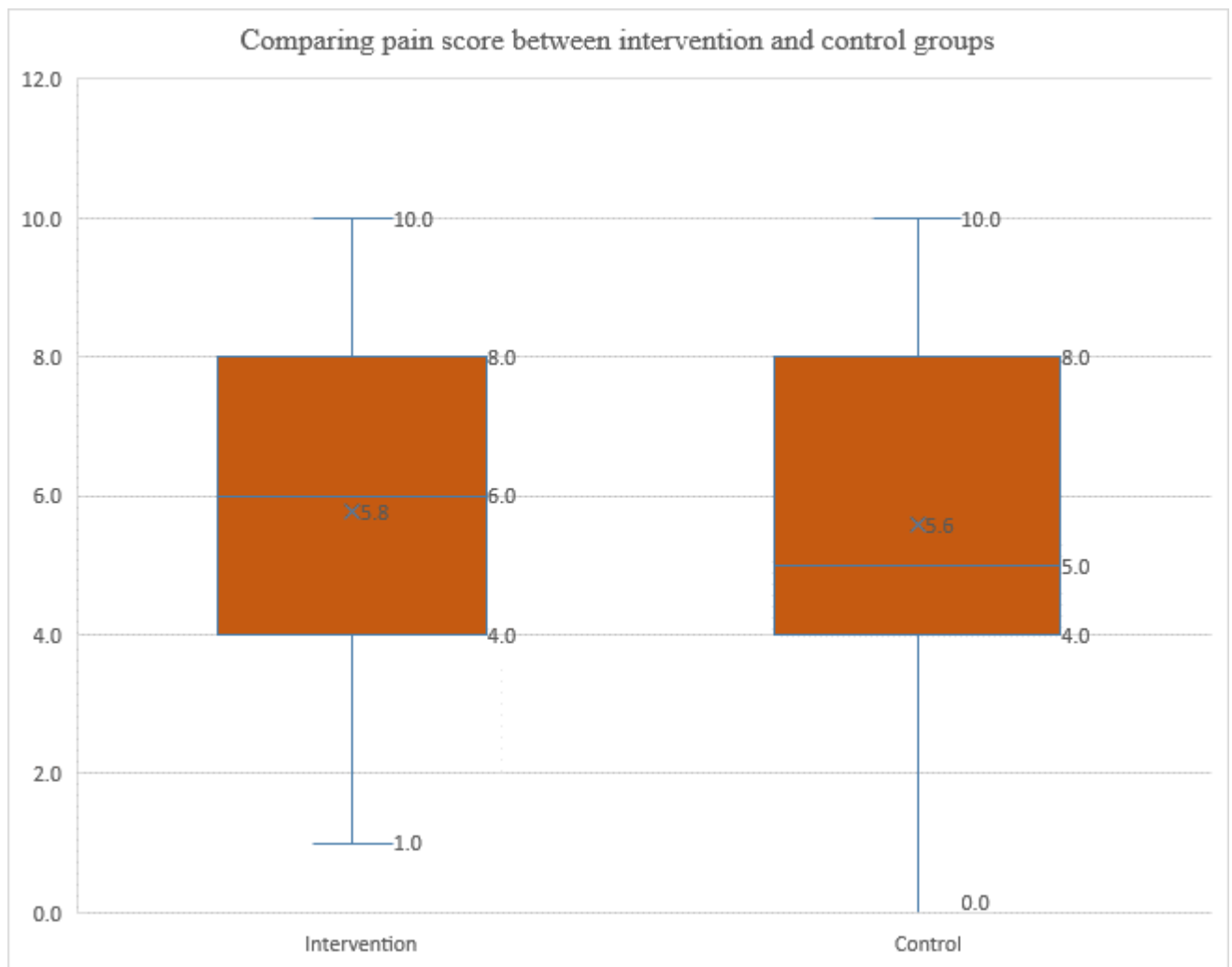


Figure 2: Comparing pain scores between intervention and control groups

Postoperative pain: The mean pain score on the numeric pain scale was slightly higher among participants who had intervention (5.77 ± 2.585) than those who had no intervention (5.58 ± 2.893). However, this was not statistically significant ($p\text{-value} = 0.696$), and thus there was no significant difference in pain control between the intervention and control group. Figure 4 illustrates the comparison

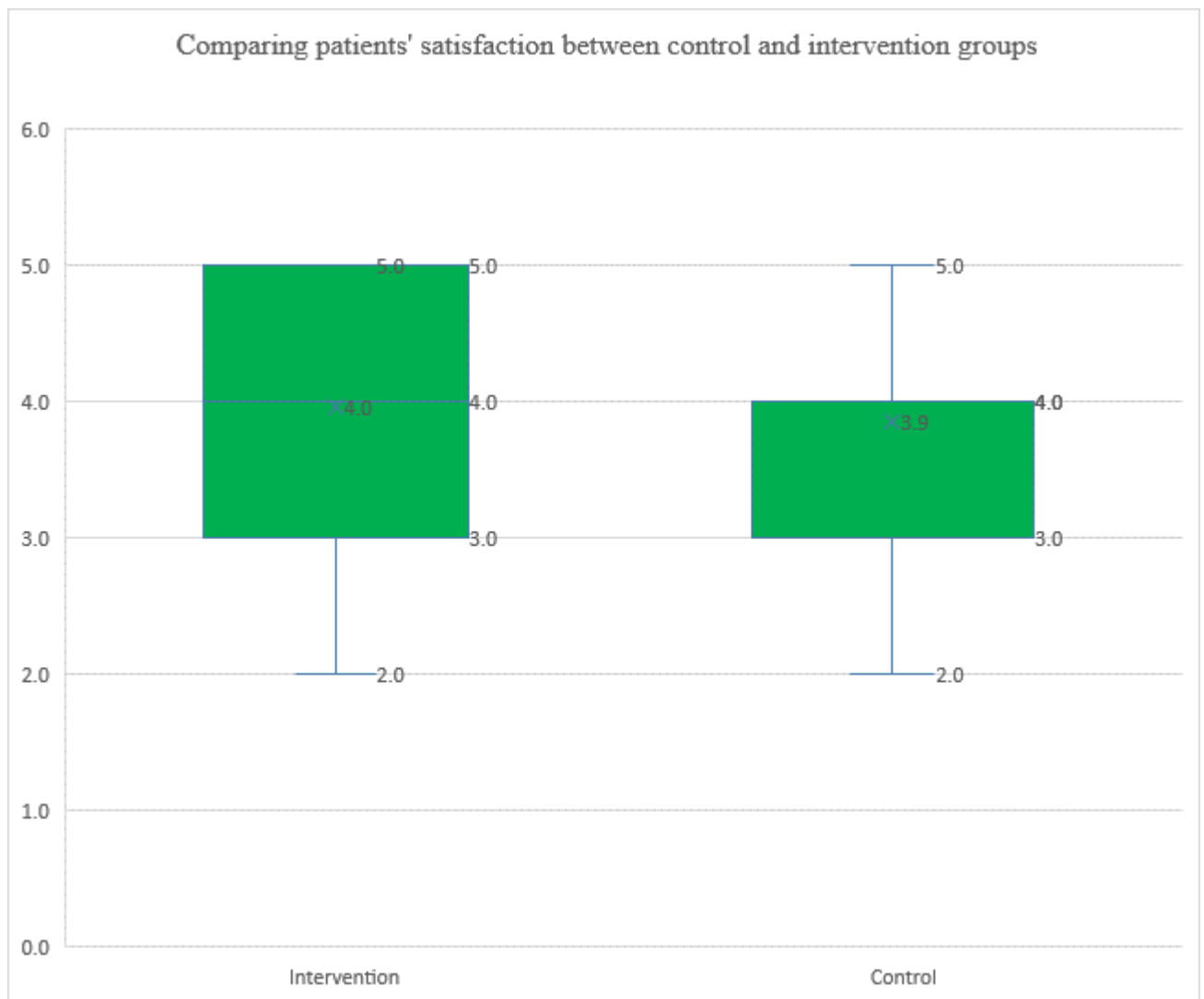


Figure 3: Comparing patients' satisfaction with care between control and intervention groups

Satisfaction to care: As illustrated in figure 5, participants who had intervention had slightly higher satisfaction scores on a Likert scale of five (3.95 ± 0.991) than those who did not have intervention (3.84 ± 0.730). Similarly, this had no statistical significance ($p\text{-value} = 0.295$), and thus the level of patient satisfaction with the care was statistically the same for the two groups.

Complications: As shown in table 14, the proportion of participants with no complication was slightly higher among those who had intervention (50.8%) than those who did not have intervention (49.2%). However, this had no statistical significance ($p\text{-value} = 0.557$). Infection was the most common complication among the participants and the majority of those who developed a post-op infection (75%) had no intervention, though this was not significant

statistically (p-value = 0.182). Haemorrhage and other complications (which were specified as pneumonia) were also insignificantly higher in the control group with p-values of 0.577 and 0.328 respectively.

Death: There was no statistically significant difference in the incidence of death between the groups (p-value = 0.492), though the only participants who died belonged to the intervention group.

Intensive care unit admission: The only participant who had intensive care unit admission belonged to the intervention group, though there was no statistically significant difference in the occurrence of intensive care unit admission between the groups.

Duration of wound healing: There was no significant difference in the duration of wound healing between the groups (p-value = 0.084), although all the participants who had delayed wound healing belonged to the control group.

Length of hospital stay: The majority of participants who had prolonged hospital stay (75%) belonged to the control group while only 25% of the participants belonged to the intervention, however, this difference had no statistical significance (p-value = 0.325).

Table 8: Comparing the surgical outcome between control and intervention

Variables	Control	Intervention	t-test/ χ^2	p-value
	Mean $\pm$ SD/	Mean $\pm$ SD/		
	Frequency(percentage)	Frequency(percentage)		

Pain score	(5.58±2.893) [#]	(5.77±2.585) [#]	-0.392 ^{##}	0.696
Satisfaction score	(3.84±0.730) [#]	(3.95±0.991) [#]	-1.051 ^{##}	0.295
Pain				
Mild pain	15(51.7%)	14(48.3%)	0.099	0.952
Moderate pain	24(49.0%)	25(51.0%)		
Severe pain	28(51.9%)	26(48.1%)		
Satisfaction			0.224	0.636
Dissatisfied	20(54.1%)	17(45.9%)		
Satisfied	47(49.5%)	48(50.5%)		
Complications			3.059*	0.557
No complication	61(49.2%)	63(50.8%)		
Haemorrhage	1(50.0%)	1(50.0%)		
Infection	3(75%)	1(25%)		
Cardiovascular	0(0%)	0(0%)		
Other(pneumonia)	1(100%)	0(0%)		
Haemorrhage			0.311	0.577
No	65(51.4%)	64(49.6%)		
Yes	2(66.7%)	1(33.3%)		
Infection			1.778	0.182
No	63(49.6%)	64(50.4%)		
Yes	4(80.0%)	1(20.0%)		
Other(pneumonia			0.978	0.328
No	66(50.4%)	65(49.6%)		
Yes	1(100%)	0(0%)		
Death			1.039	0.492
No	67(51.4%)	64(48.6%)		
Yes	0(0%)	1(100)		

ICU admission			1.039	0.308
No	67(51.1%)	64(48.9%)		
Yes	0(0%)	1(100%)		
Duration of wound healing			2.978	0.084
Usual	64(49.6%)	65(50.4)		
Delay	3(100%)	0(0%)		
Length of Hospital stay			0.970	0.325
Usual	64(50.0%)	64(50.0%)		
Prolonged	3(75.0%)	1(25.0%)		

SD: standard deviation, #: mean $\pm$ standard deviation, ##: t-test, *: Fisher's exact test

4.3 Regression analysis of factors significant in bivariate analysis

Variables with a significant association in bivariate analysis were subjected to binary logistic regression. In the clinic: as displayed in table 15, on regression analysis, only fear of blood transfusion and fear of mistakes during surgery showed statistical significance. This showed that fear of blood transfusion and fear of mistakes were independent predictors of preoperative anxiety. The model explained 33.4% to 56.3% of preoperative anxiety, indicating that the model is good enough to explain preoperative anxiety. Participants who fear blood transfusions were found to be 8.5 times more likely to have preoperative anxiety than those who did not fear blood transfusions (AOR = 8.536, p-value = 0.002, confidence interval 2.57 – 42.3). Similarly, participants who fear mistakes during the surgery were 1.5 times more likely to have preoperative anxiety than those who didn't fear mistakes during surgery (AOR =1.485, p-value = 0.012, confidence interval 1.47 – 24.57). Fear of unknown, complication, death, and nil per

oral, and concern for the family during surgery did not have significance on regression analysis with a p-value of 0.169, 0.084, 0.556, 0.210, 0.088,

Table 9: Logistic regression of factors associated with preoperative anxiety in the clinic

Variables	Adjusted odd ratio	95% confidence interval	p-value
Fear of unknown	2.615	0.66 – 10.29	0.169
Fear of complications	4.004	0.83 – 15.32	0.084
Concern for family	3.608	0.23 – 3.126	0.088
Fear of death	0.613	0.48 – 37.34	0.556
Fear of NPO	3.637	0.484 – 33.593	0.210
Fear of blood transfusion	8.536	2.57 – 42.33	0.002**
Fear of mistakes during surgery	1.485	1.49 – 24.567	0.012**

** Statistically significant Reference category: no

In the theatre: As shown in table 16, only fear of the unknown was an independent predictor of preoperative anxiety (AOR = 1.912, p-value = <0.001 confidence interval = 2.363 - 19.390). Participants who had fear of the unknown were two times more likely to have preoperative anxiety than those who did not have fear of the unknown. Fear of complication, concern for family, fear of death, fear of postoperative pain, fear of unfamiliar environment, fear of nil per oral, fear of blood transfusion, and fear of mistakes did not have significance on regression analysis with a p-value of 0.324, 0.547, 0.091, 0.574, 0.598, 0.231, 0.965, and 0.377 respectively.

Table 10: Logistic regression of factors associated with preoperative anxiety in theatre

Variables	Adjusted ratio	odd	95% confidence interval	P value
Intervention status	-0.851		0.151 - 1.208	0.109
Fear of unknown	1.912		2.363 - 19.390	< 0.000**
Fear of complications	0.639		0.531 - 6.754	0.324
Concern for family	-0.399		0.183 - 2.461	0.547
Fear of death	0.980		0.854 - 8.316	0.091
Fear of postop pain	0.304		0.470 - 3.908	0.574
Fear of environment	0.341		0.396 - 4.989	0.598
Fear of nil per oral	1.065		0.508 - 16.564	0.231
Fear of blood transfusion	0.031		0.250 - 4.252	0.965
Fear of mistakes during surgery	0.554		0.509 - 5.940	0.377

** Statistically significant Reference category: no