CHAPTER 6

6.0 RESULTS

Table 4 presents the results of the analysis of various psychological constructs, including cognitive distortion, emotional regulation, self-esteem, mental well-being, resilience, mindfulness, depression, and anxiety. The analysis compares both within-group and between-group variations, examining the effects of the Yogic Counselling Module (YCM) on adolescents.

The symbols in the table correspond to the following statistical comparisons: *#p<0.05, **##p<0.01, and *###p<0.001. These symbols represent the significance levels for comparisons. Asterisk (**) denotes within-group comparisons (pre- to post-intervention), while the dollar sign ($) compares post-intervention values. Hash marks (#) represent between-group comparisons (YCM vs. Control groups). The ηp^2 represents the effect size, indicating the proportion of variance explained by the independent variable (YCM).

The F-value indicates the ratio of between-group variation to within-group variation, providing insight into the significance of the differences between groups. The p-value indicates the statistical significance calculated of the tests performed for the analysis done.

S. No	Variables/Groups	YCM			Control			RM-ANOVA		
		Pre ***(Mean±SD)***	**Post** ***(Mean±SD)***	**Follow-up** ***(Mean±SD)***	**Pre** ***(Mean±SD)***	**Post** ***(Mean±SD)***	**Follow-up** ***(Mean±SD)***	***F*(df =17,65**	η_p^2	***p*-value**
1.	Repression	29.60±4.75	28.90±5.70	29.63±3.65$^{\#\#*}$	28.78±5.39	27.38±6.33	26.5±6.49	2.32	0.28	.132
2.	Suppression	17.36±4.68	15.26±4.15*	15.90±4.53	15.71±4.71	15.76±4.28	16.97±3.89	2.24	0.27	.138
3.	Self-Esteem	2.83±.29	2.86±0.29	2.85±0.43*	2.91±.357	2.85±0.40	2.68±0.46	.113	0.001	.737
4.	Mental Well-Being	21.11±2.3	21.14±3.52	22.35±4.46	21.46±2.53	20.70±3.57	21.49±4.72	.113	0.010	.387
5.	Resilience	3.05±.388	3.19±0.479	3.17±0.66	3.14±0.394	3.10±0.42	3.11±0.43	.757	0.009	.378
6.	Mindfulness	19.12±4.63	21.48±4.46*	19.24±4.93	20.31±3.87	20.02±4.81	19.28±4.18	2.21	0.027	.140
7.	Stress	18.78±5.70	18.09±8.02	18.29±7.26	17.57±5.70	20.52±8.83	19.91±7.98	1.28	0.016	.261
8.	Anxiety	18.29±7.54	14.58±7.29*	13.78±7.06$^{\#**}$	16.00±7.06	19.14±8.06*	17.02±7.75	.078	0.001	.781
9.	Depression	18.58±7.95	18.34±8.04$^{\#\#}$	17.51±8.20	16.47±7.83	20.23±9.08*	19.43±9.89	2.12	0.025	.151
10.	Self-Centered	3.46 ± 0.84	3.20 ± 0.9$^{\#\#\#}$	3.07±0.99$^{**\$\$\#\#}$	3.55 ± 0.79	4.31 ± 0.7***	3.64±0.81	4.52	0.053	.037
11.	Blaming others	3.58 ± 0.64	3.29 ± 0.73$^{\#\#\#}$	2.91±1.04$^{***\$\$\$\#\#}$	3.45 ± 0.75	4.32 ± 0.78***	3.54±0.83***	4.78	0.56	.032
12.	Minimizing /Mislabeling	3.63 ± 0.75	3.16 ± 0.88$^{\#\#\#}$	3.01±0.91	3.54± 0.77	3.98 ± 1.02	3.37±0.83*	.873	0.11	.353
13.	Assuming the Worst	3.46 ± 0.75	3.31 ± 0.83$^{\#\#\#}$	3.14±0.84$^{\#\#}$	3.53 ± 0.81	3.95 ± 0.88	3.64±0.72	.980	0.12	.325

14.	Stealing	3.78 ± 0.70	3.13 ± 0.91$^{\#\#\#}$	3.13±0.91$^{\#\#\#***\$\$}$	3.65 ± 0.78	4.55 ± 0.97***	4.55±0.97$^{***\$\$\$}$	1.01	0.12	.325
15	Lying	3.45 ± 0.79	3.20 ± 0.79$^{\#\#\#}$	3.12±0.92$^{\$\$}$	3.43 ± 0.80	3.99 ± 0.78**	3.48±0.87*	1.65	0.20	.202
16	Opposition Defiance	3.51 ± 0.70	3.25 ± 0.82$^{\#\#\#}$	3.09±0.81$^{\#\#}$	3.61 ± 0.67	3.84 ± 0.82	3.65±0.74$^{\$\$}$	.015	0.903	.000
17	Physical Aggression	3.32 ± 0.68	3.11 ± 0.70$^{\#\#\#}$	3.11±0.88$^{\$\$\$}$	3.45 ± 0.74	4.09 ± 0.85***	3.37±0.84***	4.18	0.049	.044
18	Overall HIT	3.49 ± 0.55	3.21 ± 0.44$^{\#\#\#*}$	3.04±0.87$^{\#\#\#**}$	3.54 ± 0.61	4.13 ± 0.76***	3.84±0.61$^{\$\$}$	2.92	0.035	.91

*Table 4- Legend: $^{*\#}p<0.05$, $^{**\#\#}p<0.01$, and $^{***\#\#\#}p<0.001$: *compares the within-group(* compares pre) , $ compares post , and # compares between-group analysis ; η_p^2 are the effect sizes, indicating the amount of variance accounted for by the independent variable; F – value: It is the ratio ofbetween-groupp variation and within group variation; p-value: Emotional Regulation: It includes Repression and Suppression; HARE: Self-esteem scale; SWMWB: Short Warwick Mental Well-being; BRS: Brief Resilience Scale; CAMM: Child and Adolescent Mindfulness Measure; DASS-21: Depression, Anxiety, Stress 21 version; HIT: How I Think to assess Cognitive Distortion- Cognitive Distortion in domains of Self-Centred, Blaming others, Minimizing/Mislabelling, Assuming the Worst, Stealing, Lying, Opposition Defiance, Physical Aggression. *(within Group- Yoga to Yoga) # Between Group (Yoga-Control)*

6.1 WITHIN GROUP HIT -YCM

The results from the table indicate significant within-group improvements across the HIT Total Score and all of its sub-domains from pre-intervention to post-intervention and follow-up. The HIT Total Score showed a steady decline in mean values from 3.49 (Pre) to 3.21 (Post), and further to 3.04 at Follow-up, with highly significant p-values ($p < 0.001$), suggesting that the intervention had a sustained positive effect on overall harmful thinking patterns. Among the sub-domains, Blaming Others exhibited the most notable improvement, decreasing from 3.58 (Pre) to 3.29 (Post) and 2.91 (Follow-up), with the highest F-value (9.366), indicating substantial change over time.

Domains of Minimising/Mislabelling, Self-Centeredness, and Stealing also showed strong reductions and statistically significant differences across time points. For example, Minimising/Mislabelling decreased from pre-scores of 3.63 to post-scores of 3.16 and then to 3.01 at follow-up, while Self-Centeredness reduced from 3.46 to 3.20 and further to 3.07 at follow up suggesting that the intervention was effective in reducing these specific maladaptive thinking patterns. The sub-domains of Lying, Assuming the Worst, Opposition Defiance, and Physical Aggression showed smaller F-values; however, had statistically significant changes ($p < 0.001$), reflecting meaningful improvements. On the other hand, Opposition Defiance reduced from 3.51 to 3.09 over time, and Physical Aggression showed a decrease from 3.32 to 3.11 and remained stable at follow-up. Overall, the intervention led to consistent and significant reductions in harmful thinking process in the mind across all time measured domains, with effects sustained or even improved during the follow-up phase.

6.2 WITHIN GROUP HIT- CG

The within-group results for the control group, examining changes in the HIT Total Score and its sub-domains over three time points: before the study (pre), immediately after (post), and at follow-up. The control group HIT scores increased from 3.54 at pre to 4.13 at post and dropped to 3.84 at follow-up, which showed the worsening of CD in the control group.

Across all other sub-domains, the pattern was the same, as we see the scores of Self-Centeredness increased from 3.55 at pre to 4.31 at follow-up, and Blaming Others increased from 3.45 to 4.32. Other domains, including Minimising/Mislabelling, Assuming the Worst, Stealing, Lying, Opposition Defiance, and Physical Aggression, also showed worsening in scores over time.

These findings suggest that, without any intervention, the control group worsened in CD in harmful thinking patterns. The slight decreases observed in scores at times are likely due to natural variation rather than any real change in behavior or attitudes. This supports the effectiveness of the intervention seen in the YCM group, as discussed earlier.

6.3 WITHIN GROUP- SECONDARY VARIABLES-YCM

Examining the within-group analysis of secondary psychological variables in the intervention group (YCM), measured across three time points: pre-intervention, post-intervention, and follow-up

Anxiety showed significant changes in all time points and there was a clear reduction from a pre-intervention mean of 18.29 (SD = 7.54) to 14.58 (SD = 7.29) at post-intervention, and further to 13.78 (SD = 7.06) at follow-up. These reductions were statistically significant,

with p-values of .026 for pre vs post and .014 for pre vs follow-up, indicating a consistent downward trend in anxiety symptoms across the assessment points.

In the present study, YCM group showed reduction depression with a mean of 18.58 (SD = 7.95) at pre-intervention, slightly reducing to 18.34 (SD = 8.04) at post-intervention and further to 17.51 (SD = 8.20) at follow-up. These differences were with p = .032 (pre vs post) and p = .020 (pre vs follow-up). However, no statistically significant changes were observed in repression, suppression, self-esteem, mental well-being, or resilience. The repression scores showed minimal fluctuation, moving from 29.60 (SD = 4.75) at pre to 28.90 (SD = 5.70) at post and back to 29.63 (SD = 3.65) at follow-up (p = .132). Similarly, YCM group showed lower suppression from 17.36 (SD = 4.68) at pre to 15.26 (SD = 4.15) at post, then rose to 15.90 (SD = 4.53) at follow-up, with no significant differences observed (p = .138).

Additionally, YCM group reported stable Self-esteem across time points, with means of 2.83 (SD = 0.29) at pre, 2.86 (SD = 0.29) at post, and 2.85 (SD = 0.43) at follow-up (p = .737). Mental well-being, measured by SWMWB, showed only a slight increase from 21.11 (SD = 2.30) at pre to 21.14 (SD = 3.52) at post, and 22.35 (SD = 4.46) at follow-up, with p = .387. Lastly, resilience, assessed via the BRS scale, showed small numerical gains from 3.05 (SD = 0.39) at pre to 3.19 (SD = 0.48) at post and 3.17 (SD = 0.66) at follow-up, which were not statistically significant (p = .378).

6.4 WITHIN GROUP SECONDARY VARIABLES -CG

The analysis of within group data of the control group revealed that Repression levels in the CG showed a slight decrease over time. At baseline (Pre), the mean repression score was 28.78 (±5.39) reducing to 27.38 (±6.33) after the intervention (Post) and further decreased to 26.50 (±6.49) at follow-up. This gradual reduction suggests that repression slightly decreased

over the course of the study. Suppression seemed to follow a less consistent pattern and mean score for suppression at Pre was 15.71 (±4.71) and post, the score was slightly higher at 15.76 (±4.28), with increase to 16.97 (±3.89) at Follow-up. These results showed a modest increase in suppression after the intervention, with a continued rise at follow-up.

In the case of self-esteem, the CG experienced a small decline over time with mean score at Pre was 2.91 (±0.357) and which slightly decreased to 2.85 (±0.40) at Post and further to 2.68 (±0.46) at Follow-up thus indicating a gradual decrease in self-esteem levels over the course of the study period. Mindfulness also showed a decline in the CG with pre measurement, the mean mindfulness score was 20.31 (±3.87) and later slightly decreased to 20.02 (±4.81) at Post and further dropped to 19.28 (±4.18) at Follow-up. This trend suggests that mindfulness levels tended to decrease following the intervention and remained lower at follow-up. Looking at mental well-being, the CG's scores were relatively stable with mean score at Pre was 21.46 (±2.53), which slightly decreased to 20.70 (±3.57) post-intervention, but then recovered to 21.49 (±4.72) at follow-up. These results suggest that, while there was a small dip in mental well-being immediately after the intervention, the score returned close to baseline by follow-up.

Depression scores increased notably in the CG with the Pre score 16.47 (±7.83) and this rose to 20.23 (±9.08) at Post, and slightly decreased to 19.43 (±9.89) at Follow-up indicating that the participants in the CG experienced increased levels of depression following the intervention, which remained elevated at follow-up compared to the baseline. Anxiety levels followed a similar pattern, with mean score at Pre was 16.00 (±7.06), which increased to 19.14 (±8.06) post-intervention, and slightly decreased to 17.02 (±7.75) at follow-up. The rise in anxiety after the intervention was notable, but it slightly decreased by follow-up, though it remained higher than the baseline.

Stress levels also showed an increase in the CG.the mean stress score at Pre was 17.57 (±5.70) and increased to 20.52 (±8.83) at Post and remained high at 19.91 (±7.98) at Follow-up. The data suggest a steady rise in stress over the study period, with a minor reduction at follow-up but still elevated compared to baseline. Finally, resilience remained stable across all time points in the CG with mean resilience score was 3.14 (±0.394) at Pre, slightly decreased to 3.10 (±0.42) at Post, and stayed almost the same at 3.11 (±0.43) at Follow-up suggesting that there was no significant change in resilience among participants in the Control Group during the study. While several variables like repression, suppression, and mental well-being showed subtle fluctuations, others like depression, anxiety, and stress demonstrated more noticeable changes, particularly an increase post-intervention. Resilience and self-esteem showed small declines over time.

6.5 BETWEEN GROUP YCM & CG

The comparative analysis between the YCM and Control groups was conducted across 18 psychological variables at three time points: pre-intervention, post-intervention, and follow-up. The performance of each group on these variables was assessed, and the differences were statistically evaluated using F-values, degrees of freedom, and corresponding p-values.

Anxiety in the YCM group showed a significant reduction in scores from 18.29 (SD=7.54) at pre-assessment to 14.58 (SD=7.29) at post-assessment, and 13.78 (SD=7.06) at follow-up, whereas the Control group worsened, increasing from 16.00 (SD=7.06) to 19.14 (SD=8.06) at post-assessment before slightly reducing to 17.02 (SD=7.75) at follow-up. This pattern reflects a statistically significant positive outcome for the YCM group, compared to a negative trend in the control group. A similar pattern was observed in self-centered thinking, where YCM group reduced their scores from 3.46 (SD=0.84) at pre-assessment to 3.20 (SD=0.90) at post-assessment, and further to 3.07 (SD=0.99) at follow-up, showing significant

improvement. In contrast, the Control group showed a significant increase from 3.55 (SD=0.79) to 4.31 (SD=0.70) at post-assessment, and then slightly decreased to 3.64 (SD=0.81) at follow-up, reflecting a worsening trend.

Blaming others also showed a favorable between-group difference and YCM group's scores decreased significantly from 3.58 (SD=0.64) at pre-assessment to 3.29 (SD=0.73) at post-assessment, and to 2.91 (SD=1.04) at follow-up. Meanwhile, Control group showed a negative trajectory, with scores rising from 3.45 (SD=0.75) at pre-assessment to 4.32 (SD=0.78) at post-assessment, before dropping slightly to 3.54 (SD=0.83) at follow-up. For physical aggression, the YCM group's scores reduced from 3.32 (SD=0.68) to 3.11 (SD=0.70) and remained stable at follow-up (SD=0.88), while the Control group worsened, increasing from 3.45 (SD=0.74) to 4.09 (SD=0.85) at post-assessment, and then decreasing slightly to 3.37 (SD=0.84) at follow-up. This represents a statistically significant advantage for the YCM group.

The overall HIT score, which aggregates cognitive distortion domains, showed substantial improvement in the YCM group, decreasing from 3.49 (SD=0.55) to 3.21 (SD=0.44) at post-assessment, and further to 3.04 (SD=0.87) at follow-up. In contrast, the Control group worsened, with scores rising from 3.54 (SD=0.61) to 4.13 (SD=0.76), then slightly improving to 3.84 (SD=0.61) at follow-up. These between-group differences suggest that while the YCM intervention led to meaningful reductions in emotional and cognitive difficulties, the control group not only failed to improve but, in some areas, showed significant deterioration, highlighting the protective and therapeutic benefits of the YCM program .Overall, these results highlight the positive impact of the YCM intervention, especially in addressing cognitive distortions and improving work-life balance, with a promising potential for adolescent populations.

SUMMARISING THE BETWEEN-GROUP RESULTS

Between-group analysis revealed several significant differences favoring the YCM group. While anxiety, a statistically significant reduction was found in the YCM group compared to the Control group, indicating a positive impact of the Yogic Counseling Module the control group experienced a significant increase, suggesting a worsening condition. Similarly, the YCM group showed a significant improvement in self-centered thinking and blaming others compared to the control group. In contrast, the Control group showed significant increases in these negative cognitive patterns, reflects deterioration. Physical aggression also showed a significant group difference, with the YCM group demonstrating stable or reduced scores while the Control group showed a significant rise, indicating increased aggressive behavior. The overall HIT score, which reflects the cumulative effect of cognitive distortions, improved significantly in the YCM group, while the control group experienced a worsening trend. Though not statistically significant across all variables, these between-group results consistently point to the effectiveness of the YCM intervention in reducing psychological distress and cognitive distortions, whereas significant changes in the Control group were generally negative in nature, highlighting the protective effect of the YCM intervention.

Hypotheses were evaluated and the hypotheses hypotheses related to cognitive distortion (1) and anxiety (9) were accepted**,** as significant changes were observed in these variables. Specifically, there was a notable reduction in cognitive distortion and a significant decrease in anxiety from Pre to Follow-up. On the other hand, the hypotheses regarding stress (2), self-esteem (3), emotional regulation (4), resilience (7), depression (8), and mental well-being (6) were rejected**,** as the changes in these areas were either minimal or not statistically significant. The hypotheses related to observed behavior in the classroom (10) and observed

behavior by parents, teachers, and friends (11) were not analyzed due to the lack of data however, verbal feedback was gathered for these aspects.

6.6 PEARSON'S CORRELATION OUTCOMES

The results indicate significant relationships between various psychological variables, as assessed through Pearson correlation analysis. A strong positive correlation was observed between cognitive distortion and anxiety ($r = 0.551$, $p < 0.001$), as well as between cognitive distortion and stress ($r = 0.347$, $p < 0.05$), suggesting that individuals exhibiting higher cognitive distortions tend to experience greater anxiety and stress. Conversely, a significant negative correlation was found between cognitive distortion and resilience ($r = -0.455$, $p < 0.01$), indicating that individuals with higher resilience tend to have lower cognitive distortions. Furthermore, repression was negatively correlated with cognitive distortion ($r = -0.32$, $p < 0.05$) and anxiety ($r = -0.348$, $p < 0.05$), implying that higher levels of repression are associated with lower cognitive distortions and reduced anxiety. Additionally, self-esteem demonstrated a weak positive correlation with repression ($r = 0.288$, $p = 0.06$), although the result was not statistically significant. These findings emphasize the interrelated nature of psychological factors, particularly the role of cognitive distortion in anxiety and resilience.

Table 5: Pearson's Correlation among variables

Variables	Pearson Correlation (r)	Significance Level
Repression & Cognitive Distortion	-0.32	* ($p < 0.05$)
Repression & Self-Esteem	0.288	$p = 0.06$ (Not Significant)
Repression & Anxiety	-0.348	* ($p < 0.05$)
Cognitive Distortion & Anxiety	0.551	*** ($p < 0.001$)
Cognitive Distortion & Stress	0.347	* ($p < 0.05$)
Cognitive Distortion & Resilience	-0.455	** ($p < 0.01$)

The table 5 shows Pearson correlation coefficients (r) and significance levels for various psychological variables. Asterisks indicate significance: * ($p < 0.05$), ** ($p < 0.01$), *** ($p < 0.001$). A non-significant result is indicated by $p = 0.06$.

The outcomes of Pearson's coefficient showed a negative correlation of Repression with Cognitive Distortion and Anxiety and a positive correlation of Repression with Self-esteem. Similarly, Cognitive Distortion showed a positive correlation with Anxiety and Stress and a negative correlation with Resilience, as shown in Figure 7.

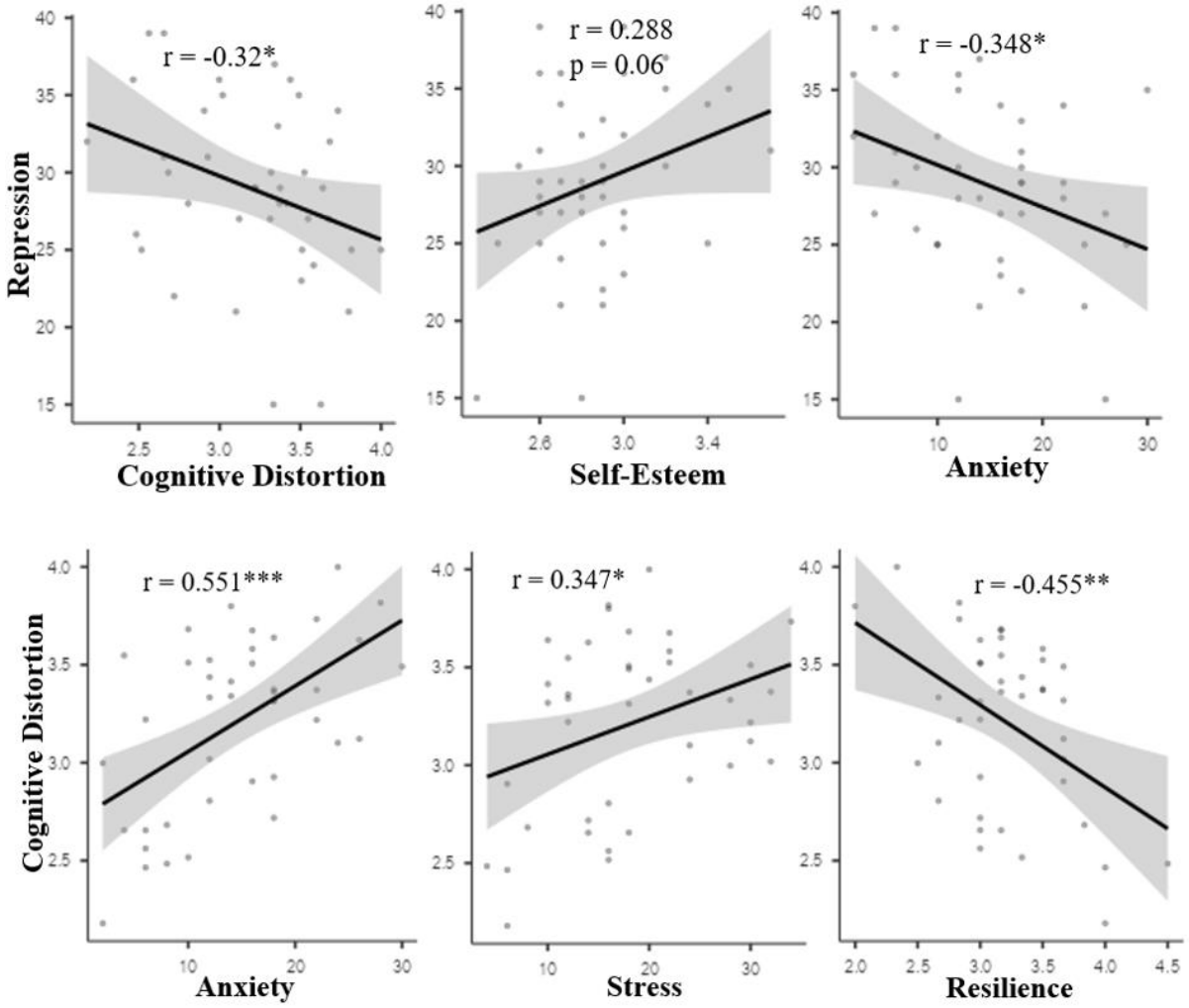
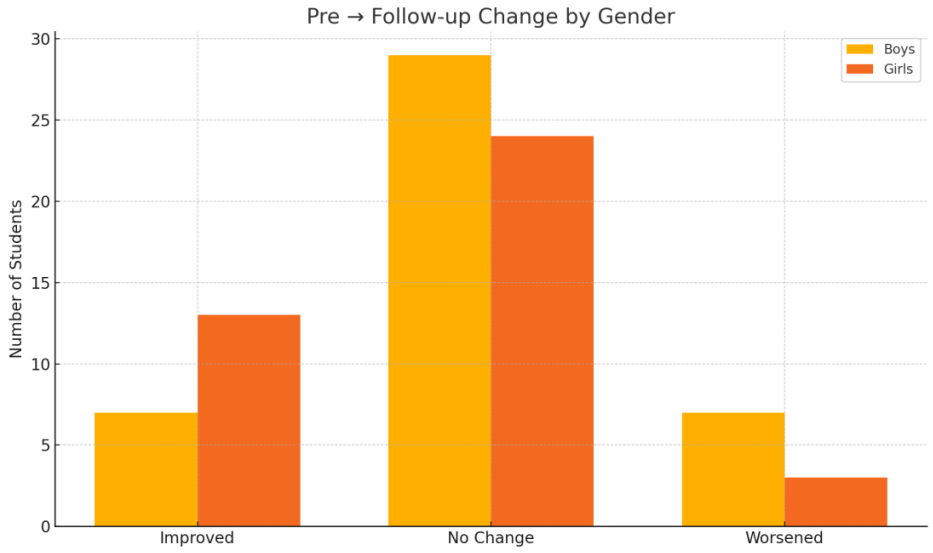


Figure 7- Pearson's coefficient relationship among variables

6.6 GENDER AND CLASS-WISE ANALYSIS RESULTS



The figure 8 Shows Pre-Follow-Up changes in the Control group for HIT

The results from the YCM group showed significant improvement from Pre to Follow-up, with 17 students demonstrating progress, which was notably higher than the control group. Only 3 students in the YCM group worsened, suggesting a positive long-term impact of the intervention. In contrast, the control group saw only 3 students improve, while 7 students worsened, and the majority showed no change. These findings indicate that the YCM intervention was more effective in improving HIT scores compared to the control group. The longitudinal effect, from Pre to Follow-up, was particularly strong in the YCM group, highlighting the potential benefits of consistent mindfulness and yoga practices for emotional regulation and behavioral outcomes.

Among boys, 7 students improved, 29 stayed the same, and 7 worsened, showing a solid number remained stable, although some regression occurred. In contrast, among girls, 13 students improved almost double the number of boys, while only 3 worsened, indicating better recovery and progress. Overall, girls showed significantly stronger positive changes, with more improvements and fewer setbacks. This suggests that the YCM had a more effective impact on female students. Additionally, girls may be more responsive to emotional and behavioral

programs or more expressive in their responses to interventions.

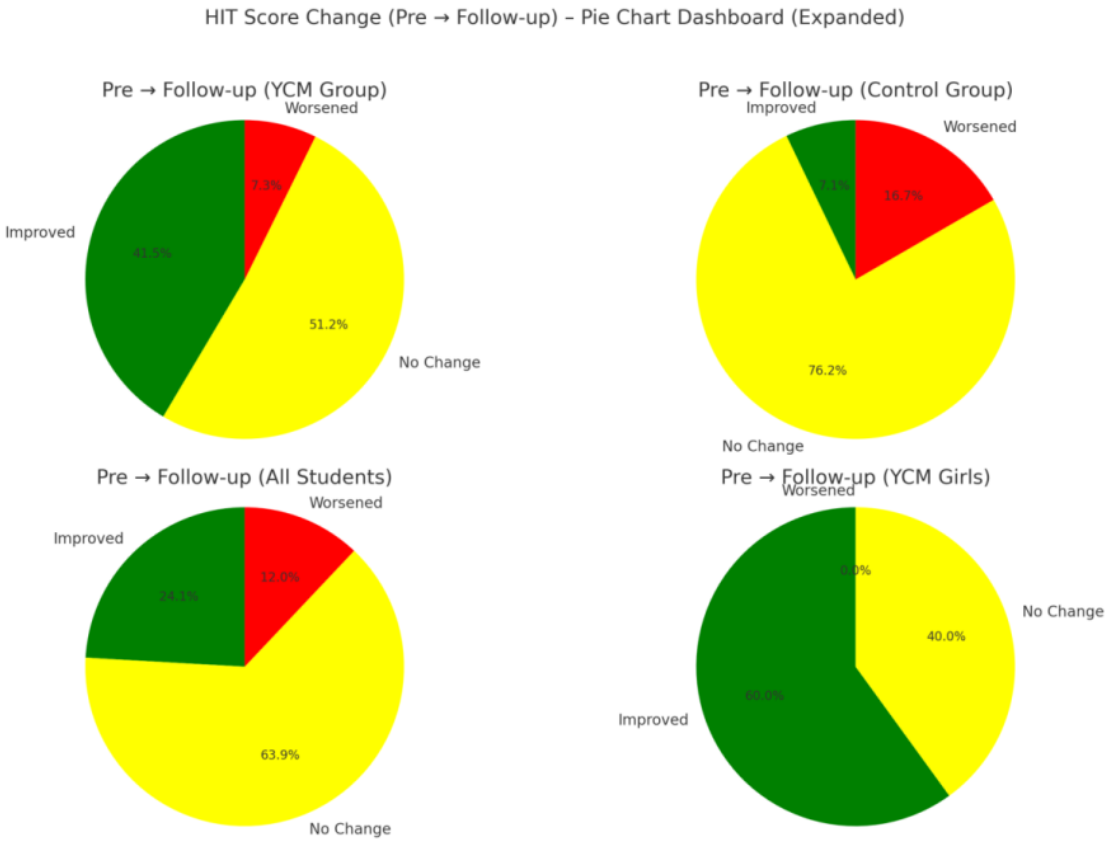


Figure 9 shows the percentage changes gender wise

In the YCM group, 43% of students showed improvement, 53% experienced no change, and 7% worsened, indicating a strong positive impact overall. In contrast, the Control group saw only 7% improvement, with 73% showing no change and 16% worsening, suggesting limited progress and more regression. Among boys, 17% showed improvement, 70% had no change, and 17% worsened, indicating balanced but modest gains. For girls, 33% improved, 61% showed no change, and 8% worsened, reflecting the best performance overall.

Yogic Counselling Module (YCM) resulted in significant improvements in cognitive distortions (HIT scores), with the YCM group showing higher overall gains than the control group. The YCM group had 43% improvement, 53% no change, and 7% worsened, while the

control group had only 7% improvement, 73% no change, and 16% worsened. Gender differences showed that girls benefited more from the intervention, with 33% improving compared to 17% in boys. In terms of emotional regulation, the intervention helped reduce repression, suppression, anxiety, and depression, especially in girls. For mindfulness, the YCM showed significant improvement in Class 8 students, particularly among girls. Boys, especially in Class 9, demonstrated high anxiety and repression levels, suggesting a need for targeted interventions. The findings underscore the effectiveness of YCM in improving emotional and behavioral outcomes, particularly for girls, and highlight the need for further research to reinforce these benefits.

The Yogic Counselling Module (YCM) proves particularly beneficial in improving emotional regulation, especially for girls who tend to display higher levels of self-centeredness, blaming others, and minimizing or mislabeling behaviors. Boys in Class 9 benefit from interventions targeting pessimism, such as assuming the worst, and physical aggression. YCM helps reduce their anger, anxiety, and aggression. For girls in Class 9 and 10, focused interventions are needed to address defiance, lying, and stealing, which may be linked to emotional and moral development challenges. YCM aids in improving self-control and moral decision-making in these areas.

The Overall HIT score is essential for identifying students who may benefit from YCM, which targets multiple emotional and behavioral difficulties. The reduction in the Overall HIT score suggests improvements in self-esteem, emotional stability, and coping strategies.

The study shows that girls, particularly in Class 9, display greater emotional dysregulation and maladaptive behaviors such as self-centeredness, blaming others, lying, and stealing. Boys in Class 9 exhibit tendencies toward aggression and pessimism, contributing to

stress and anxiety. YCM effectively addresses these tendencies by improving emotional regulation, stress management, and social coping skills.