6.0 RESULTS

6.1 RESULTS OF THE STUDY-1

6.1.1 Characteristics of the sample in the study-1

We have reported characteristics of the sample in Table 6.1.1. Students from all the four batch were included in the study. Majority of the students were females, single and belonged to Christian religion.

6.1.2 Descriptive statistics

Findings of all the variables are described in Table 6.1.2. In our study, mean of mindfulness (*M* = 37.83, *SD* = 6.07) was similar to the result reported in the original scale (*M* = 37.24, *SD* = 5.63) (Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006). Among 73 paramedical students in australia, mean resilience was 27.4 (Gayton & Lovell, 2012), which is close to our study result (*M* = 26.31, *SD* = 6.28). Among 200 university of toronto students empathy score (*M* = 44.54, *SD* = 7.70) (Spreng, Mckinnon, Mar, & Levine, 2009), and our participants scores had less difference (*M* = 41.39, *SD* = 6.55). Findings of repeated negative thinking as reported in validation of the scale *(M* = 28.14, *SD* = 13.23) (Ehring et al., 2011), and in the present study were similar *(M* = 27.43, *SD* = 12.17).

6.1.3 Correlates of resilience

Moving ahead, Pearson's correlation test was run to determine the relationship between resilience, mindfulness, perseverative thinking, and empathy among nursing students. The results obtained from the correlation analysis are shown in Table 6.1.3. It is apparent from this table that there is a significant correlation between resilience and mindfulness,

perseverative thinking & empathy in nursing students. Particularly, there was a significant positive correlation between resilience, mindfulness, and empathy. Conversely, there was a significant negative correlation between resilience and repeated negative thinking subscales.

6.1.4 Predictors of resilience

Finally, based on correlation results we conducted a stepwise multiple linear regression analysis, resilience was introduced as the dependent variable and all other variables as an independent variable. Overall, this model accounted for almost 33% of the variance in resilience. This finding is of particular interest as mindfulness alone explained 23% of the variance and unproductive repeated negative thinking and repeated negative thinking consuming mental capacity predicted 8% & 2% respectively. The results of regression analysis are presented in Table 6.1.4.

6.1.5 Post hoc Statistical Power Analysis

A post hoc power analysis was performed, at an alpha value $p = .05$, with the sample size 194, predictor variables 2, and squared multiple correlations $r^2 = .33$ as inputs. By achieving effect size of $f^2 = .49$, and the statistical power 1.00. With this, we can conclude that our results had more than adequate statistical power with the large effect size.

Table 6.1.1

Characteristics of the Sample (N=194)

Characteristics	*N* (%)
Gender	
Male	11(6)
Female	183(94)
Marital status	
Single	193(99)
Married	1(1)
Class/batch	
1st year BSc	38(19.5)
2nd year BSc	42(21.5)
3rd year BSc	54 (28)
4th year BSc	60(31)
Religion	
Hindu	67(35)
Christian	123(63)
Muslim	4(2)

Table 6.1.2

Descriptive Statistics of Resilience, Mindfulness, Perseverative Thinking (subscales) and Empathy

Variable	*Mean±SD*	Range of total score
Resilience	26.31±6.28	5-40
Mindfulness	37.83±6.07	19-51
Empathy	41.39±6.55	26-58
Sub-scales of perseverative thinking scale		
RNT	16.64±6.85	3-35
Unproductive RNT	4.83±2.56	0-12
RNT capturing mental capacity	5.96±2.76	0-12

Note. RNT- repeated negative thinking

Table 6.1.3

Correlates of Resilience

	Age	resilience	mindfulness	RNT	Unproductive RNT	RNT capturing mental capacity	Empathy
Age	-						
Resilience	-.054	-					
Mindfulness	-.063	.471**	-				
RNT	-.077	-.203**	-.090	-			
Unproductive RNT	-.003	-.329**	-.139	.643**	-		
RNT capturing mental capacity	-.084	-.291**	-.134	.690**	.513**	-	
Empathy	-.080	.226**	.116	-.097	-.210**	-.178*	-

Note. RNT- repeated negative thinking.

*significant at the 0.05 level, **significant at the 0.01 level

Table 6.1.4

Predictors of Resilience

	Unstandardized Co-efficient		Standardized Co-efficient	*t*	*p*
	B	*Std.error*	*Beta*		
Mindfulness [a]	.495	.065	.483	7.627	.000**
Mindfulness	.455	.062	.444	7.320	.000**
Unproductive RNT [b]	-.694	.147	-.286	-4.711	.000**
Mindfulness	.445	.062	.434	7.222	.000**
Unproductive RNT	-.497	.168	-.205	-2.959	.003**
Mental capacity [c]	-.369	.158	-.162	-2.344	.020*

Note. RNT- repeated negative thinking.

[a] r=.483 and r^2=.233, [b] r=.560 and r^2=.314, [c] r=.577 and r^2=.333.

* significant at the 0.05 level, **significant at the 0.01 level

6.2 RESULTS OF THE STUDY-2

6.2.1 Characteristics of the sample

Characteristics of the sample are illustrated in Table 6.2.1. It is evident that most of the participants were females, single and belonged to the Christian religion.

6.2.2 Descriptive statistics

The results, of all the variables are described Table 6.2.2. In our study, students lived experience on each item is less than the ideal scores on Spiritual Health and Life-Orientation Measure (SHALOM) questionnaire, as found in previous studies.

Results of descriptive statistics are described in comparison with previous studies. Our results were in line with previous research studies. In our study, mean of mindfulness was (M = 38.56, SD = 6.19) slightly more than the result reported in the original scale (M = 37.24, SD = 5.63) (Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006). Findings of first and fourth year nursing students on self-compassion (M = 3.31, SD = .56) (Eraydın & Karagözoğlu, 2017), is close to our study result (M = 3.14, SD = .45). Satisfaction with life in our study (M = 22.47, SD = 5.87), though it looks like slightly less than the results reported among 255 nurses and health workers (M = 23.6, SD = 6.1) (Judge, 1990), they have average satisfaction with life (score range 20-24).

6.2.3 Exploratory factor analysis of SHALOM

A Principal Components Analysis was performed, separately for Spiritual Health and Life-Orientation Measure (SHALOM) Ideal and Lived experience, using oblimin rotation. In our study, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for SHALOM (Ideal)

was .90, and for SHALOM (Lived experience) was .88. The Bartlett's test of sphericity was significant for Ideal (χ^2 (190) = 1405.48, p < .001) and for Lived experience (χ^2 (190) = 1218.82, p < .001).

The results of KMO test indicate the suitability of the data for factor analysis, based on the result we subjected this scale to factor analysis. Our results yielded four-factor like the four-factor model of Gomez and Fisher (2003). These four-factors cohered into a single higher-order factor i.e. Spiritual Well-being (SWB) that explained 67.86% of total variance with eigenvalue 2.71. The Kaiser-Meyer-Olkin value was .81 and Bartlett's test of sphericity was significant (χ^2 (6) = 223.85, p < .001). Our findings were in line with the study conducted by Fisher (2013), that explained 63.8% total variance and the Kaiser-Meyer-Olkin value was .74.

Here, we have reported the eigenvalue and the percentage of variance explained by the four-factor of Spiritual Health and Life-Orientation Measure (Ideal); for the first factor (Environmental) 8.37 and 42%, the second factor (Transcendental) 1.59 and 8%, the third factor (Personal) 1.26 and 6%, and the fourth factor (Communal) 1.00 and 5% respectively. Similarly, the eigenvalues and the percentage of variance of the four-factor of Spiritual Health and Life-Orientation Measure (Lived experience) were; for the first factor (Communal) 7.28 and 36%, the second factor (Transcendental) 1.82 and 9%, the third factor (Environmental) 1.32 and 7%, and the fourth factor (Personal) 1.10 and 6% respectively. The four-domains on lived experience explained 57.6% of total variance in our study, however, 72.5% of total variance was explained in Fisher (2013) study.

6.2.4 Reliability test

In our study, Spiritual Health and Life-Orientation Measure questionnaire has reported good reliability which was close to the results reported by Fisher (2013). The Cronbach's alpha for the full scale was α = .94, and for all the four-factor were $\alpha \geq .72$. And findings of SHALOM (Ideal) were, personal α = .79, communal α = .76, environmental α = .79, transcendental α = .85 and SHALOM (Lived experience) were, personal α = .78, communal α = .72, environmental α = .72 and transcendental α = .86 respectively.

6.2.5 Correlates of spiritual well-being

It was apparent from the Table 6.2.5, there was a significant correlation between spiritual well-being, mindfulness, self-compassion, and satisfaction with life among nursing students. Evidently, mindfulness was positively correlated with all the domains of spiritual well-being on both responses, ideal and lived experiences except for transcendental ideal scores. Meanwhile, self-compassion and satisfaction with life were associated with all the domains of spiritual well-being only on lived experience.

6.2.6 Predictors of spiritual well-being

In this study, stepwise multiple linear regression analysis was done for four-domains of spiritual well-being on lived experience and Spiritual Well-being (SWB), which was introduced separately as the dependent variable and all other variables as an independent variable. Results are reported separately in Table 6.2.6.1, 6.2.6.2, 6.2.6.3, and 6.2.6.4 respectively.

6.2.7 Post hoc Statistical Power Analysis

A post hoc power analysis was performed, at an alpha value .05, with the sample size 145, predictor variables 3, and squared multiple correlations $r^2 = .24$ as inputs. By achieving effect size of $f^2 = .31$, and the statistical power >.99. With this, we can conclude that our results had more than adequate statistical power with the moderate effect size.

Table 6.2.1

Characteristics of the Sample (N=145)

Characteristics	*N* (%)
Gender	
Male	7(5)
Female	138(95)
Marital status	
Single	142(98)
Married	3(2)
Class/batch	
1st year BSc	34(23)
2nd year BSc	30(21)
3rd year BSc	49(34)
4th year BSc	32(22)
Religion	
Hindu	46(32)
Christian	95(65)
Muslim	4(3)

Table 6.2.2

Descriptive Statistics of Spiritual well-being and its sub-scales, Mindfulness, Self-Compassion, and Satisfaction with Life.

Variable	*Mean±SD*	Range
Age	19.55±1.30	17 - 24
SHALOM- Personal (ideal)	4.26±0.70	2.20 - 5
Communal (ideal)	4.20±0.68	2.20 - 5
Environmental (ideal)	3.95±0.76	1.20 - 5
Transcendental (ideal)	4.35±0.80	1 - 5
SHALOM- Personal (lived experience)	3.73±0.73	1.80 - 5
Communal (lived experience)	3.78±0.66	1.60 - 5
Environmental (lived experience)	3.55±0.67	2 - 5
Transcendental (lived experience)	3.94±0.90	1 - 5
Spiritual Well-being (SWB)	15.00±2.43	2 - 5
Mindfulness	38.56±6.19	23 - 52
Self-compassion	3.14±0.45	2 - 4.17
Satisfaction with life	22.47±5.87	5 - 33

Note. SHALOM- Spiritual Health and Life-Orientation Measure.

Table 6.2.5

Correlation between Four-domains of Spiritual Well-being, Mindfulness, Self-compassion, and Satisfaction with Life

	Age	Mindfulness	Self-Compassion	Satisfaction with Life	Spiritual Well-being (overall)
Age	-				
Mindfulness	.07	-			
Self-Compassion	-.02	.41**	-		
Satisfaction with Life	-.08	.26**	.19*	-	
Personal Ideal	.15	.25**	.07	.15	.42**
Communal Ideal	.12	.22**	.05	.15	.41**
Environmental Ideal	.03	.17*	.05	.11	.38**
Transcendental Ideal	-.03	.10	.01	.24**	.49**
Personal Lived experience	-.02	.33**	.34**	.38**	.84**
Communal Lived experience	-.05	.33**	.34**	.21*	.82**
Environmental Lived experience	-.09	.30**	.23**	.25**	.81**
Transcendental Lived experience	-.13	.22**	.21*	.35**	.82**
Spiritual Well-being (overall)	-.09	.36**	.33**	.37**	-

*p<0.05, **p<0.01

Table 6.2.6.1

Predictors of Spiritual Well-being

	Unstandardized Co-efficient		Standardized Co-efficient	*t*	*p*
	B	*Std.error*	*Beta*		
Satisfaction with life [a]	.152	.032	.366	4.697	.000**
Satisfaction with life	.121	.032	.292	3.776	.000**
Mindfuness [b]	.110	.030	.281	3.627	.000**
Satisfaction with life	.114	.032	.275	3.590	.000**
Mindfulness	.080	.032	.204	2.480	.014*
Self-compassion [c]	1.048	.433	.196	2.418	.017*

[a]r= .366, r^2= .134, [b]r= .455[b], r^2= .207, [c]r= .489[c], r^2= .239.

*p<0.05, **p<0.01

From the Table 6.2.6.1, we can conclude, that this model significantly explained overall 24% i.e. Satisfaction with life 13%, mindfulness 8%, and self-compassion 3% of the variance on spiritual well-being (SWB).

Table 6.2.6.2

Predictors of Personal Domain of Spiritual Well-being

	Unstandardized Co-efficient		Standardized Co-efficient	*t*	*p*
	B	*Std.error*	*Beta*		
Satisfaction with life [a]	.047	.010	.380	4.908	.000**
Satisfaction with life	.041	.009	.327	4.318	.000**
Self-compassion [b]	.442	.121	.275	3.640	.000**
Satisfaction with life	.037	.010	.295	3.859	.000**
Self-compassion	.340	.130	.212	2.613	.010**
Mindfuness [c]	.020	010	.169	2.052	.042*

[a]r= .380, r^2= .144, [b]r= .466[b], r^2= .217, [c]r= .490[c], r^2= .240.
*significant at the 0.05 level, **significant at the 0.01 level

As per Table 6.2.6.2, this model significantly explained 24% of variance i.e. Satisfaction with life 14%, self-compassion 8%, and mindfulness 2% of the variance on the personal domain of spiritual well-being. One outlier was excluded during data analysis.

Table 6.2.6.3

Predictors of Communal Domain of Spiritual Well-being

	Unstandardized Coefficient		Standardized Coefficient	*t*	*p*
	B	*Std.error*	*Beta*		
Self-compassion [a]	.494	.109	.355	4.532	.000**
Self-compassion	.359	.117	.258	3.070	.005**
Mindfulness [b]	.024	.009	.234	2.784	.006**

[a]r= .355[a], r^2= .126, [b]r= .415[b], r^2= .172.
*significant at the 0.05 level, **significant at the 0.01 level

It was apparent from the Table 6.2.6.3, that the regression model significantly explained about 17% of variance i.e. self-compassion 13%, and mindfulness 4% on the communal domain of spiritual well-being. With the exclusion of one outlier during analysis.

Table 6.2.6.4

Predictors of Environmental Domain of Spiritual Well-being

	Unstandardized Coefficient		Standardized Coefficient	*t*	*p*
	B	*Std.error*	*Beta*		
Mindfulness [a]	.033	.009	.304	3.820	.000**
Mindfulness	.028	.009	.258	3.167	.002**
Satisfaction with life [b]	.020	.009	.177	2.177	.031*

[a]r= .304[a], r^2= .093, [b]r= .349[b], r^2= .122.
*significant at the 0.05 level, **significant at the 0.01 level

According to the Table 6.2.6.4, this regression model significantly predicted 12% of the variance on the environmental domain, towards which mindfulness contributed 9%, and satisfaction with life 3%. However, satisfaction with life significantly explained 12% variance on the transcendental domain of spiritual well-being.

Regression analysis was separately run using religion as the independent variable and the transcendental domain of spiritual well-being as the dependent variable, as religion was significantly correlated with this domain only (r=.207, p=.012). Based on regression analysis, religion predicted 4% of the variance on the transcendental domain of spiritual well-being.

6.3 RESULTS OF THE STUDY-3

The trial profile of the study is depicted in Figure 1.

6.3.1 Characteristics of the participants

For this study 100 students were recruited, fifty participants in each group and there were 10 dropouts in the yoga group and in the WLC group. Data was analyzed for 80 students. Characteristics of all participants in the yoga and the WLC group are described below: The age of all participants in the yoga group was 19.65±1.48 and in the WLC group was 19.35±1.03. In the yoga group, 1st year GNM were 17(42.5%), 2nd year GNM 6(15%), 1st year BSc 5(12.5%), 2nd year BSc 5(12.5%), 3rd year BSc 7(17.5%) and among the WLC group, 1st year GNM were 10(25%), 2nd year GNM 10(25%), 1st year BSc 7(17.5%), 2nd year BSc 7(17.5%), 3rd year BSc 6(15%). About 30(75%), 8(20%) and 2(5%) belonged to Hindu, Christian, and Muslim religion respectively in the yoga group. In the WLC group, 26(65%) belonged to Hindu and 14(35%) belonged to Christian religion. Regarding participants mother tongue, Kannada 26(65%), other languages 14(35%) in the yoga group and Hindi 1(2.5%), Kannada 23(57.5%) and other languages 16(40%) in the WLC group.

Sub-group analysis was done based on the stream of education i.e. GNM students and BSc students. As GNM students study diploma in nursing for 3 years whereas BSc students study for 4 years. Students who join GNM course would have studied either science or arts or commence in their 11th and 12th class (in regional or English medium). However, students of BSc nursing will be only from science stream. As per curricular requirements, GNM students have more clinical practice/exposure than theory classes. Whereas, BSc students study more theory subjects/ classes than clinical hours. Considering these academic and

clinical difference among our study participants sub-group analysis was performed to witness the difference between them.

The age of all participants in the yoga group was 19.26±1.10 (GNM students), 20.18±1.78 (BSc students) and in the WLC group was 19.15±.93 (GNM students), 19.55±1.10 (BSc students). Demographic characteristics of the participants are described in Table 6.3.1. It is apparent from this table that majority of the students belonged to Hindu religion and their mother tongue was kannada. In this study, all the participants were females and single. Majority of the students were residing in the college hostel and in community hostel except 5 students who were days' caller students.

6.3.2 Descriptive statistics

Results of descriptive statistics are described in comparison with previous studies.

Findings of first and fourth year nursing students on self-compassion (*M* = 3.31, *SD* = .56) (Eraydın & Karagözoğlu, 2017), is close to our study result (*M* = 3.13, *SD* = .46). Satisfaction with life in our study (*M* = 22.05, *SD* = *4.86*), though it looks like slightly less than the results reported among 255 nurses and health workers (*M* = 23.6, *SD* = 6.1) (Judge, 1990), they have average satisfaction with life (score range 20-24). Mindfulness was (*M* = 37.73, *SD* = *4.35*) similar to the result reported in the original scale (*M* = 37.24, *SD* = 5.63) (Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006). Among 73 paramedical students in australia, mean resilience was 27.4 (Gayton & Lovell, 2012), however in our study resilience was less than the reported study (*M* = 23.99, *SD* = 5.56).

According to perceived stress scale norm table, perceived stress among females was *M* = 13.7, *SD* = 6.6, and among age group of 18-29 was *M* = 14.2, *SD* = 6.2 (Cohen, Kamarck, & Mermelstein, 1983), however, our partcipants reported *M* = 20.23, *SD* = 3.68. Though it

looks like our particpants have reported more stress level compared to norm table, but score range of 13-26 is considered as moderate stress level. Next, empathy scores on Jefferson Scales of Empathy among nursing students was *M* = 103.92, SD = 14.4 (Williams et al., 2014), whereas, in the present study empathy was less than previous study *M* = 95.48, SD = 12.86.

Here we have reported handgrip strengths of female healthy adults aged between 20-29 measured in right and left hand respectively from the previous studies, 28.6±7.7 and 24.5±7.1 (Mathiowetz et al., 1985), 25.8±6.0 and 22.0±6.8 (Adedoyin et al., 2009), 30.0±7.0 and 28.0±6.1 (Massy-Westropp, Gill, Taylor, Bohannon, & Hill, 2011), 28.5±5.7 (dominant hand) and 26.2±5.5 (non-dominant) (Tsang, 2005), in dominant hand 33.4±5.4 among females aged between 20-24 (Angst et al., 2010). In our study, 41.29±7.58 and 38.21±7.28 were right and left handgrip strength respectively. Compared to the previous studies our participants have reported higher hand grip strength. Key pinch strength in dominant hand among females aged between 20-24 was 6.5±1.3 (Angst et al., 2010), however, key pinch strength reported in our study was 5.50±2.00. Comparatively pinch strength was less in our participants. The normative data of purdue pegboard test among Indian females aged between 15-25 years were; right hand 18±2, left hand 17±2, both hands 14±2 and assembly score 42±5 (Desai, Kene, Doshi, More, & Desai, 2006). However, our participants have reported; right hand 17.3±1.6, left hand 15.35±1.6, both hands 12.77±1.4 and assembly score 33.5±4.9 respectively. Our participants have reported slightly less than normative data of purdue pegboard test among Indian females.

Figure 1. Trial profile

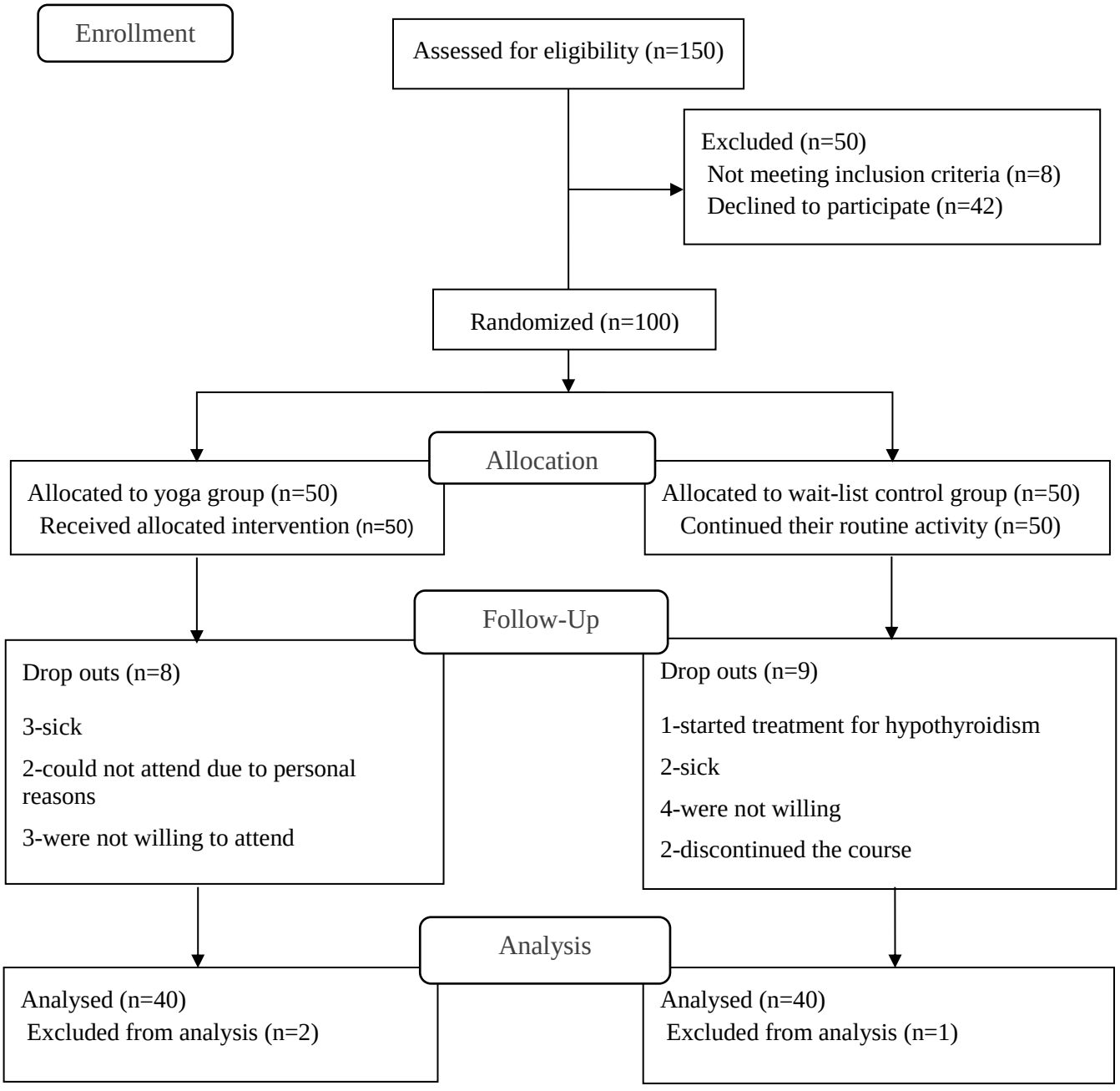

Table 6.3.1

Characteristics of the Participants

Characteristics of the participants	n (%)		n (%)	
	Yoga group (n=40)		WLC group (n=40)	
	GNM students (n=23)	BSc students (n=17)	GNM students (n=20)	BSc students (n=20)
Class/Batch				
1st year	17(74%)	5(30%)	10(50%)	7(35%)
2nd year	6(26%)	5(30%)	10(50%)	7(35%)
3rd year	-	7(40%)	-	6(30%)
Religion				
Hindu	22(96%)	8(47%)	19(95%)	7(35%)
Christian	-	8(47%)	1(5%)	13(65%)
Muslim	1(4%)	1(6%)	-	-
Mother tongue				
Hindi	-	-	-	1(5%)
Kannada	20(87%)	6(35%)	17(85%)	6(30%)
Others	3(13%)	11(65%)	3(15%)	13(65%)

Note. GNM- General Nursing and Midwifery.

6.3.2 Results of RM-ANOVA

Proceeding further, data were analyzed using repeated measures analysis of variance (RM-ANOVA). Meanwhile, normality test (Shapiro-Wilk) ensured that there was no significant difference between the yoga and the WLC groups at baseline for all the variables. Further, results of the sub-group analysis gave us insight into difference in the behavior of GNM and BSc students in both the groups. Overall, the findings of RM-ANOVA are described in the following Tables:

6.3.2.1 Results of self-compassion

For self-compassion, within group comparison (ANOVA) did not show a significant improvement, F (1, 78) = 1.894, p = .173. Whereas, interaction between time x group reported a significant improvement, F (1, 78) = 4.506, p = .037. This was evident that an 8-week yoga intervention significantly improved self-compassion among participants of the yoga group than compared to the WLC group. Refer to the Table 6.3.2.1 and Figure 6.3.2.1.

According to sub-group analysis, there was a significant improvement in self-compassion among BSc students than GNM students in the yoga group and decrease in self-compassion was witnessed among the WLC group.

Results of post-hoc analysis with Bonferroni adjustment reported a significant improvement within the yoga group (p = .016), but there was non-significant improvement within the WLC group (p = .599).

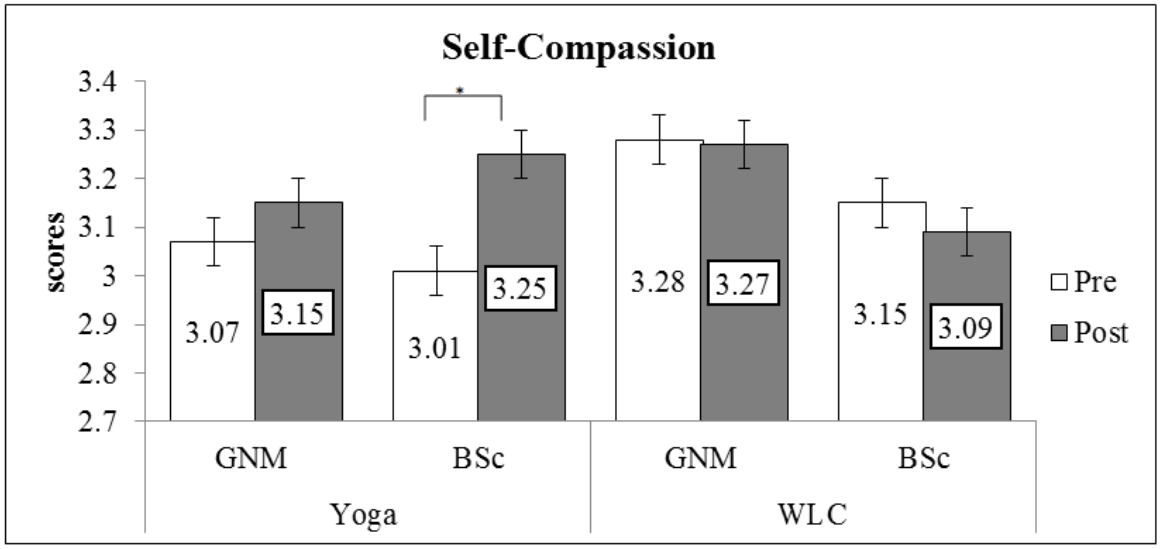

Figure 6.3.2.1. Graphical representation of results of self-compassion in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.1

Results of RM-ANOVA of Self-compassion in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	3.07±.44	3.15±.20	2.61%	.08	.352	.07	.10	.16	.016*	.18	.01	.055
	BSc	3.01±.48	3.25±.36	7.97%	.24	.014*							
WLC	GNM	3.28±.46	3.27±.40	-.30%	-.01	.926	.13	.18	-.04	.599			
	BSc	3.15±.46	3.09±.50	-1.90%	-.06	.515							

Note. GNM- General Nursing and Midwifery.
*significant at the 0.05 level, **significant at the 0.01 level.

6.3.2.2 Results of satisfaction with life

Within group comparison (ANOVA) did not show significant increase in satisfaction with life, F (1, 78) = 1.768, p = .187. Likewise, in interaction between time x group also results were non-significant, F (1, 78) = .139, p = .711.

However, we have not witnessed significant improvement but, there was increase in satisfaction in life among both the groups and percentage of improvement was more in the yoga group students especially among BSc students refer to Table 6.3.2.2 and Figure 6.3.2.2. In post-hoc analysis with Bonferroni correction findings were non-significant within the yoga group (p = .232) and the WLC group (p = .500).

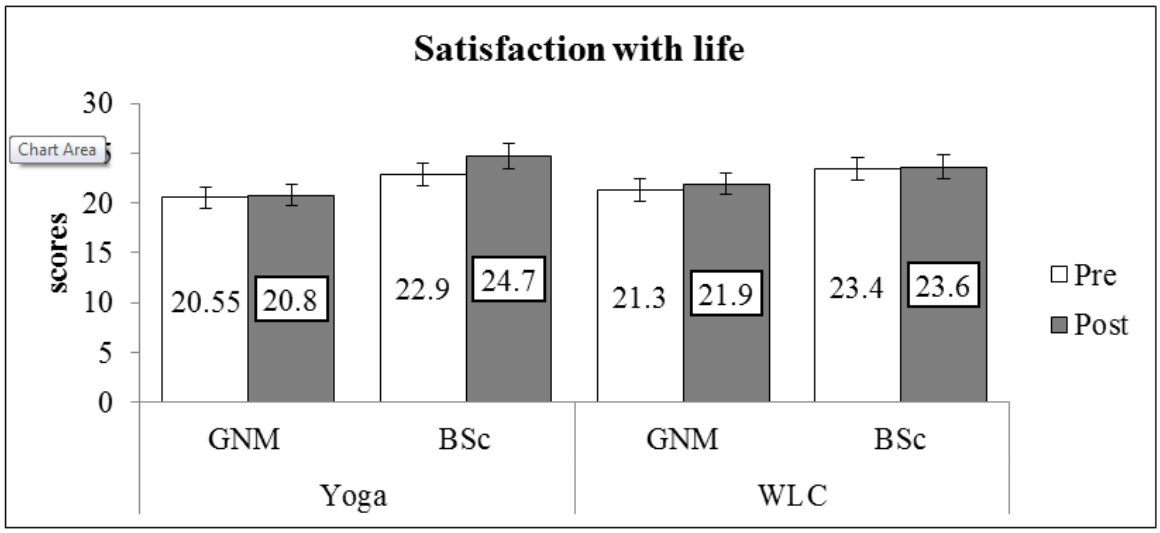

Figure 6.3.2.2. Graphical representation of results of satisfaction with life in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.2

Results of RM-ANOVA of Satisfaction with Life in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	20.55±5.01	20.81±4.16	1.27%	.26	.760	2.39	3.97	.80	.232	.75	.40	.002
	BSc	22.94±4.75	24.78±4.98	8.02%	1.84	.066							
WLC	GNM	21.30±3.47	21.95±4.30	3.05%	.65	.487	2.1	1.7	.45	.500			
	BSc	23.40±6.20	23.65±5.18	1.07%	.25	.789							

Note. GNM- General Nursing and Midwifery.

6.3.2.3 Results of mindfulness

Here, within group comparison (ANOVA) for mindfulness result was non-significant, F (1, 78) = .547, p = .462. But, for interaction between time x group showed significant improvement, F (1, 78) = 10.945, p = <.001. This was apparent that an 8-week yoga intervention significantly improved mindfulness among students of the yoga group than compared to the WLC group. Refer to the Table 6.3.2.3.

There was a significant increase in mindfulness among BSc students of the yoga group and contrary results were witnessed in BSc students of the WLC group. Even though, results were non-significant there was improvement in mindfulness in GNM students of the yoga group and decrease in mindfulness among students of the WLC group.

Results of post-hoc analysis with Bonferroni adjustment reported a significant increase within the yoga group (p = .005), but non-significant in the WLC group (p = .073).

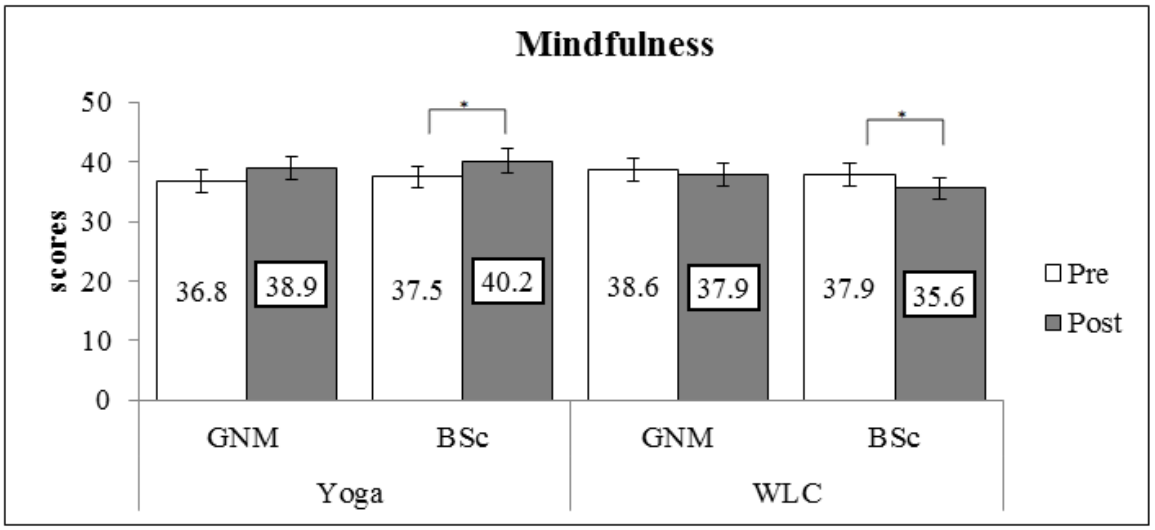

Figure 6.3.2.3. Graphical representation of results of mindfulness in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.3

Results of RM-ANOVA of Mindfulness in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	36.80±3.93	38.92±4.53	5.76%	2.12	.063	.76	1.3	2.37	.005*	1.18	2.68	.123
	BSc	37.56±3.55	40.22±5.48	7.08%	2.66	.034*							
WLC	GNM	38.60±5.28	37.95±5.53	-1.68%	-.65	.582	.65	2.35	-1.5	.073			
	BSc	37.95±4.65	35.60±5.63	-6.19%	-2.35	.049*							

Note. GNM- General Nursing and Midwifery.

*significant at the 0.05 level, **significant at the 0.01 level.

6.3.2.4 Results of resilience

For resilience, within group comparison (ANOVA), F (1, 78) = .393, p = .533 and interaction between time x group was non-significant, F (1, 78) = 1.700, p = .196.

Only among BSc students of the yoga group there was increase in resilience, but result was non-significant.

In post-hoc analysis with Bonferroni correction also findings were non-significant within the yoga group (p = .633) and the WLC group (p = .176). Results of resilience are reported in detail in Table 6.3.2.4 and Figure 6.3.2.4.

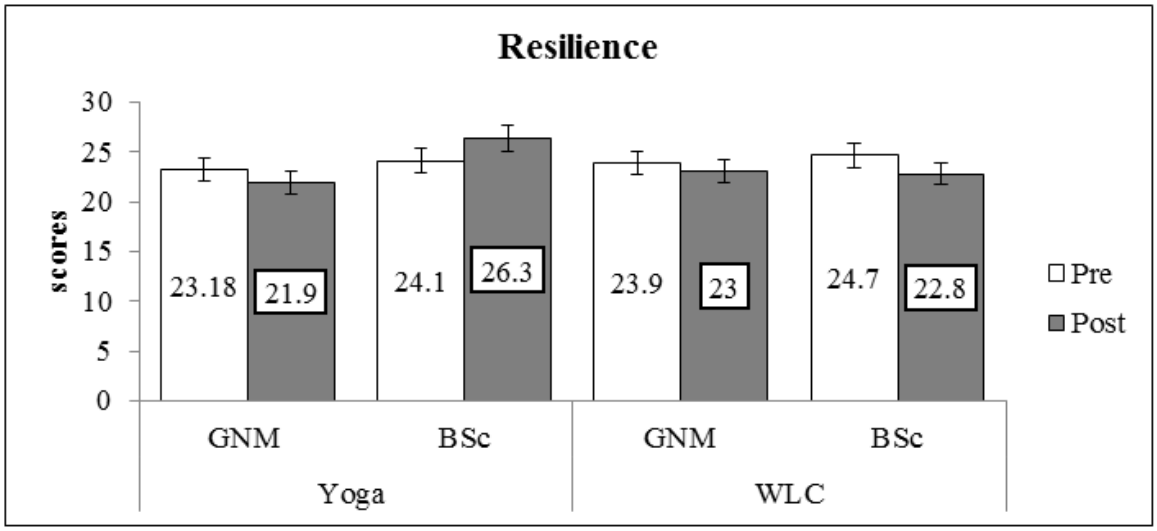

Figure 6.3.2.4. Graphical representation of results of resilience in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.4

Results of RM-ANOVA of Resilience in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	23.18±4.38	21.92±4.28	-5.44%	-1.26	.345	.93	4.41	.48	.633	1.13	.73	.021
	BSc	24.11±5.68	26.33±6.46	9.21%	2.22	.133							
WLC	GNM	23.90±6.72	23.05±3.98	-3.56%	-.85	.543	.85	.20	-1.38	.176			
	BSc	24.75±5.44	22.85±6.75	-7.68%	-1.9	.176							

Note. GNM- General Nursing and Midwifery.

6.3.2.5 Results of empathy

Conversely, in within group comparison (ANOVA) significant decrease in empathy was reported, F (1, 78) = 7.265, p = .009. However, interaction between time x group reported non-significant result, F (1, 78) = .017, p = .895.

Overall, there was a significant decrease in empathy among GNM students of both the groups. Only among BSc students of the yoga group there was increase in empathy, but the results were non-significant. Results in detail are depicted in Table 6.3.2.5 and Figure 6.3.2.5.

Post-hoc analysis with Bonferroni adjustment reported non-significant result within the yoga group (p = .074), but a significant decrease in empathy within the WLC group (p = .049) was reported.

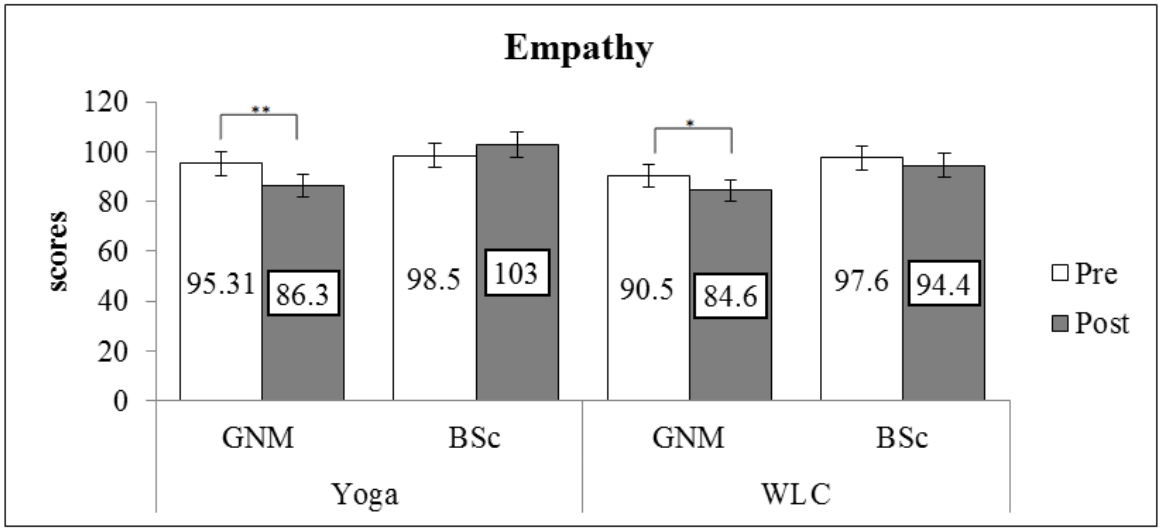

Figure 6.3.2.5. Graphical representation of results of empathy in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.5

Results of RM-ANOVA of Empathy in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M ±SD*	Post *M± SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	95.31±11.87	86.36±8.52	-9.39%	-8.95	.002**	3.19	17.25	-4.13	.074	3.45	3.87	.000
	BSc	98.50±14.48	103.61±13.86	5.19%	5.11	.104							
WLC	GNM	90.50±12.44	84.60±10.28	-6.52%	-5.9	.049*	7.1	9.8	-4.55	.049*			
	BSc	97.60±12.64	94.40±10.95	-3.28%	-3.2	.281							

Note. GNM- General Nursing and Midwifery.
*significant at the 0.05 level, **significant at the 0.01 level

6.3.2.6 Results of perceived stress

Results of within group comparison (ANOVA) was non-significant in perceived stress, F (1, 78) = .720, p = .399. Similarly, time x group interaction also reported non-significant result, F (1, 78) = 3.482, p = .66.

However, results were non-significant there was reduction in perceived stress among the yoga group students. Refer to the Table 6.3.2.6 and Figure 6.3.2.6.

Findings of post-hoc analysis with Bonferroni adjustment reported non-significant result within the yoga group (p = .059) and within the WLC group (p = .474).

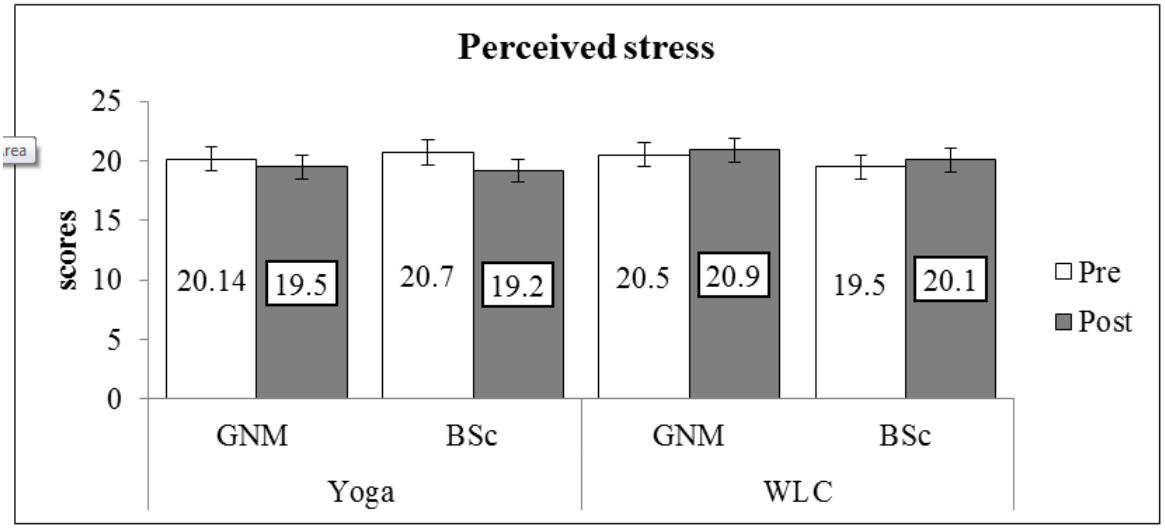

Figure 6.3.2.6. Graphical representation of results of perceived stress in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.6

Results of RM-ANOVA of Perceived Stress in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M ±SD*	Post *M± SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	20.14±3.85	19.56±2.65	-2.88%	-.58	.578	.64	.34	1.47	.059	.80	1.22	.043
	BSc	20.78±3.35	19.22±4.18	-7.51%	-1.56	.177							
WLC	GNM	20.50±2.01	20.95±2.24	2.20%	.45	.679	1.00	.80	-.55	.474			
	BSc	19.50±5.49	20.15±4.18	3.33%	.65	.551							

Note. GNM- General Nursing and Midwifery.

6.3.2.7 Results of low back and hamstring flexibility

For low back and hamstring flexibility, within group comparison (ANOVA) showed a significant improvement, F (1, 78) = 12.771, p = <.001. Similarly, interaction between time x group also reported a significant improvement, F (1, 78) = 6.205, p = .015. These results have demonstrated that an 8-week yoga intervention significantly improved low back and hamstring flexibility among participants of the yoga group than compared to the WLC group. Results are detailed in Table 6.3.2.7 and Figure 6.3.2.7.

According to the sub-group analysis, there was a significant improvement in low back and hamstring flexibility among BSc students of the yoga group.

Results of post-hoc analysis with Bonferroni adjustment reported a significant improvement within the yoga group (p =<.001), but non-significant within the WLC group (p = .446).

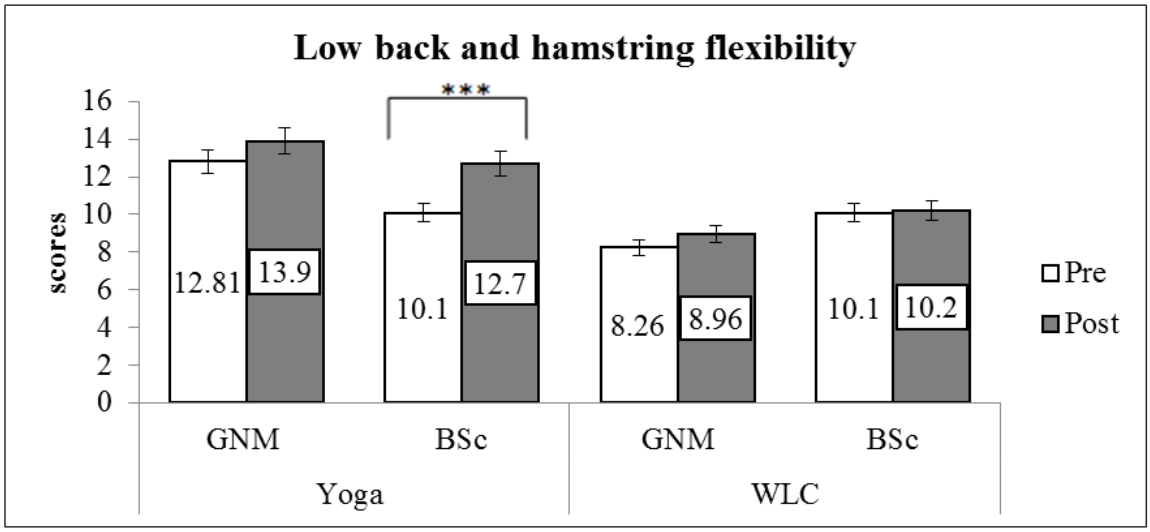

Figure 6.3.2.7. Graphical representation of results of low back and hamstring flexibility in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.7

Results of RM-ANOVA of Low Back and Hamstring Flexibility in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	12.81±4.81	13.90±4.75	8.51%	1.09	.061	2.62	1.13	1.79	.000**	2.25	3.72	.074
	BSc	10.19±6.61	12.77±7.76	25.32%	2.57	.000**							
WLC	GNM	8.26±4.94	8.96±5.48	8.47%	.70	.259	1.93	1.24	.32	.446			
	BSc	10.19±4.67	10.20±5.13	.10%	.01	.987							

Note. GNM- General Nursing and Midwifery.
*significant at the 0.05 level, **significant at the 0.01 level

6.3.2.8 Results of peak expiratory flow rate

Results of within group comparison (ANOVA) and between time x group interaction for peak expiratory flow rate reported significant improvements respectively, F (1, 78) =72.402, p =<.001 and F (1, 78) =5.435, p = .022.

This is evident from Table 6.3.2.8, that there were significant improvements in both the groups and also among GNM and BSc students of both the groups. Refer to Figure 6.3.2.8.

Results of post-hoc analysis with Bonferroni adjustment reported a significant increase within the yoga group (p = <.001) and the WLC group (p =<.001).

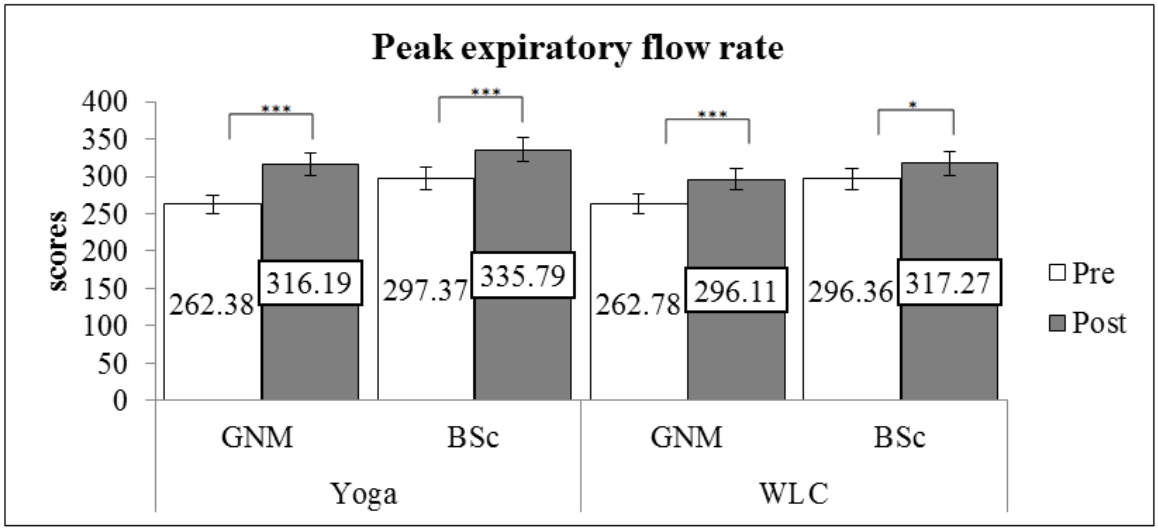

Figure 6.3.2.8. Graphical representation of results of peak expiratory flow rate in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.8

Results of RM-ANOVA of Peak Expiratory Flow Rate in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Yoga	GNM	262.38±66.17	316.19±58.78	20.51%	53.81	.000**	34.99	19.60	46.50	.000**	2.25	17.75	.065
	BSc	297.37±55.56	335.79±47.99	12.92%	38.42	.000**							
WLC	GNM	262.78±37.22	296.11±40.46	12.68%	33.33	.000**	33.59	21.16	26.50	.000**			
	BSc	296.36±51.41	317.27±49.39	7.06%	20.91	.012*							

Note. GNM- General Nursing and Midwifery.
*significant at the 0.05 level, **significant at the 0.01 level

6.3.2.9 Results of hand grip strength

For hand grip strength (right hand), within group comparison (ANOVA), F (1, 78) =1.107, p = .296 and interaction between time x group, F (1, 78) =.829, p = .365, result was non-significant. However, among BSc students of the WLC group there was a significant decrease in hand grip strength (right hand), though we could see similar trend among other groups results were non-significant. In post-hoc analysis with Bonferroni correction also there was non-significance within the yoga group (p = .921) and the WLC group (p = .169). Results are reported in detail in Table 6.3.2.9, Figure 6.3.2.9.1 and Figure 6.3.2.9.2.

For hand grip strength (left hand), within group comparison (ANOVA), F (1, 78) =19.441, p <.001. and interaction between time x group reported a significant improvement, F (1, 78) = 6.260, p = .014. There was a significant decrease in hand grip strength (left hand) among both GNM and BSc students of the WLC group. In post-hoc analysis with Bonferroni correction there was non-significance within the yoga group (p = .181), but among the WLC group (p =<.001) there was a significant decrease in hand grip strength (left hand).

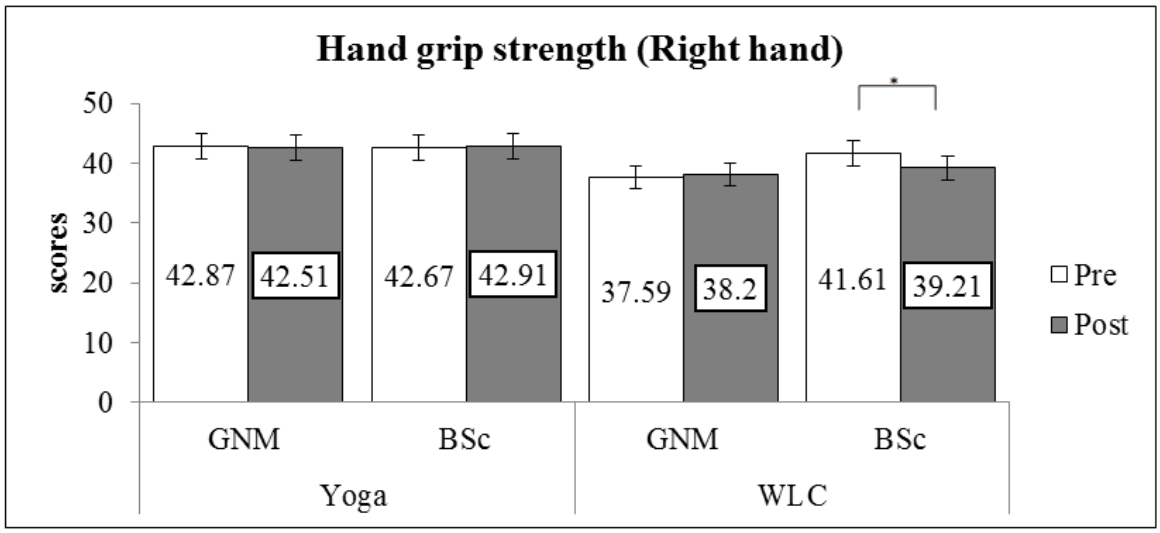

Figure 6.3.2.9.1. Graphical representation of results of hand grip strength (right hand) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

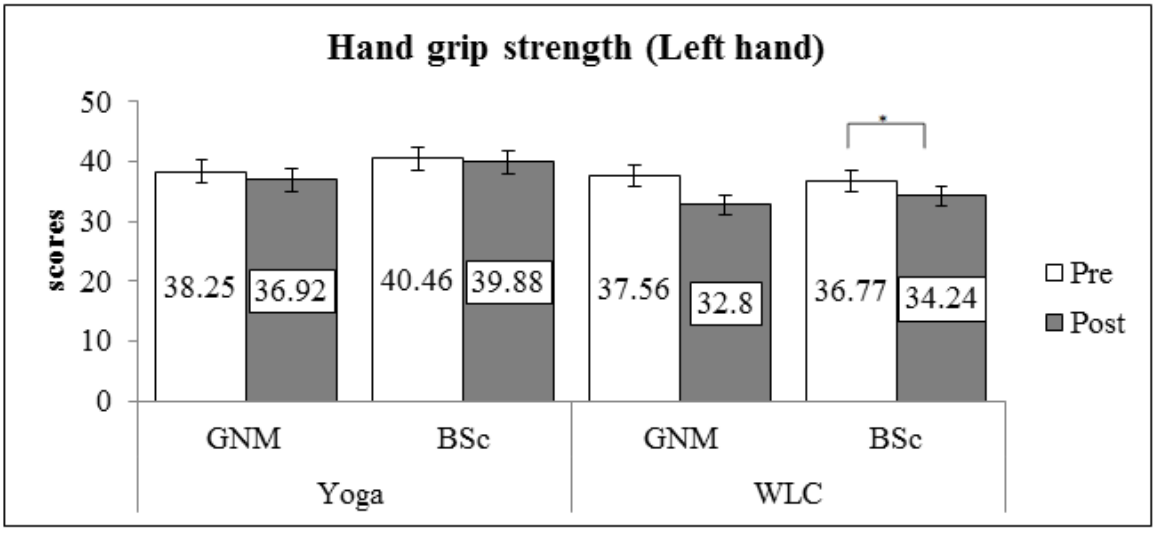

Figure 6.3.2.9.2. Graphical representation of results of hand grip strength (left hand) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.9

Results of RM-ANOVA of Hand Grip Strength in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Handgrip (Right)													
Yoga	GNM	42.87±8.85	42.51±8.59	-.86%	-.37	.722	.21	.40	-.08	.921	2.98	3.94	.011
	BSc	42.67±6.24	42.91±5.45	.59%	.25	.820							
WLC	GNM	37.59±6.36	38.20±5.84	1.62%	.61	.581	4.01	1.00	-1.04	.169			
	BSc	41.61±7.72	39.21±6.96	-5.74%	-2.39	.019*							
Handgrip (Left)													
Yoga	GNM	38.25±9.13	36.92±7.74	-3.48%	-1.33	.184	2.20	2.96	-.98	.181	2.18	4.73	.074
	BSc	40.46±7.09	39.88±6.05	1.43%	.58	.581							
WLC	GNM	37.56±6.77	32.80±5.73	-12.67%	-4.76	.000**	.78	1.45	-3.53	.000**			
	BSc	36.77±5.71	34.24±6.46	-6.88%	-2.53	.011*							

Note. GNM- General Nursing and Midwifery.
*significant at the 0.05 level, **significant at the 0.01 level

6.3.2.10 Results of pinch strength

Results of pinch gauge-lateral, within group comparison (ANOVA), F (1, 78) = 1.520, p = .221 and interaction between time x group, F (1, 78) = .015, p = .904 results were non-significant. Results of post-hoc analysis with Bonferroni adjustment reported non-significance within the yoga group (p = .341) and the WLC group (p = .434).

Within group comparison (ANOVA) witnessed a significant increase in pinch gauge-chunk, F (1, 78) = 6.292, p = .014. However, interaction between time x group there was non-significance, F (1, 78) =1.218, p = .273. There was a significant improvement in pinch gauge-chunk among GNM students of the yoga group. In post-hoc analysis with Bonferroni correction confirmed a significant increase within the yoga group (p = .013) but non-significance in the WLC group (p = .324).

Next, for pinch gauge-pulp, within group comparison (ANOVA) revealed a significant increase, F (1, 78) = 6.731, p = .011. However, interaction between time x group result was non-significant, F (1, 78) =.425, p = .517. Here also, there was a significant improvement in pinch gauge-pulp among GNM students of the yoga group. In post-hoc analysis with Bonferroni correction reported a significant increase within the yoga group (p = .024) whereas result was non-significant in the WLC group (p = .173). Results are reported in Table 6.3.2.10, and graphical representations in Figure 6.3.2.10.1, Figure 6.3.2.10.2 and Figure 6.3.2.10.3.

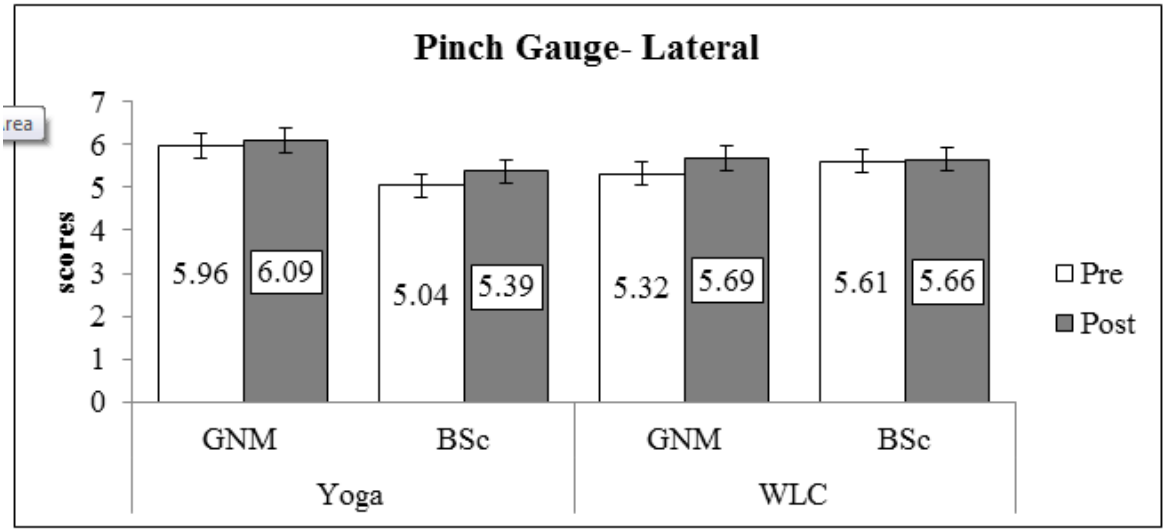

Figure 6.3.2.10.1. Graphical representation of results of pinch strength (lateral in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

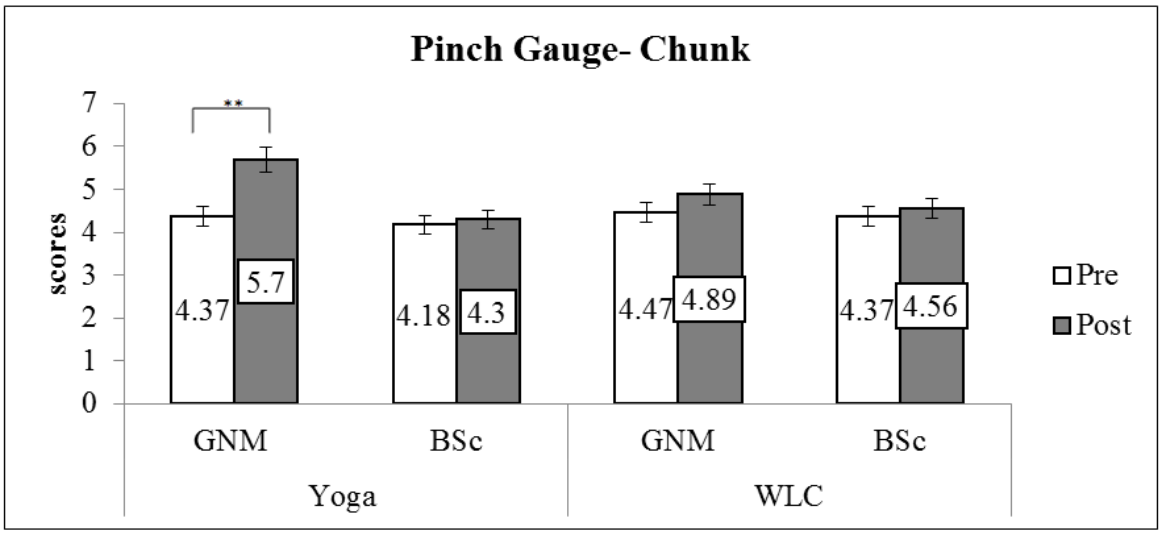

Figure 6.3.2.10.2. Graphical representation of results of pinch strength (chunk) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

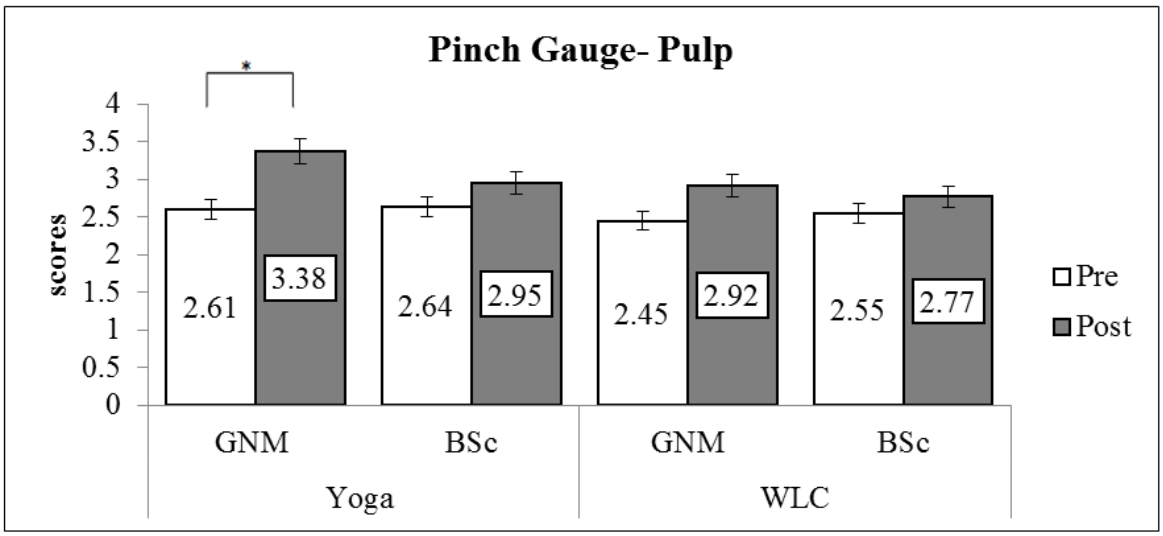

Figure 6.3.2.10.3. Graphical representation of results of pinch strength (pulp) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.10

Results of RM-ANOVA of Pinch Strength (Lateral, Chunk, and Pulp) in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Pinch Gauge- Lateral													
Yoga	GNM	5.96±1.93	6.09±1.62	2.18%	.13	.709	.92	.69	.23	.341	.05	.09	.000
	BSc	5.04±2.04	5.39±1.38	6.94%	.35	.329							
WLC	GNM	5.32±1.50	5.69±2.02	6.77%	.36	.328	.28	.03	.19	.434			
	BSc	5.61±2.40	5.66±1.80	.89%	.05	.873							
Pinch Gauge-Chunk													
Yoga	GNM	4.37±1.75	5.70±2.55	30.43%	1.33	.001**	.19	1.40	.75	.013*	.13	.33	.015
	BSc	4.18±2.34	4.30±1.76	2.87%	.12	.786							
WLC	GNM	4.47±1.95	4.89±2.08	9.40%	.42	.337	.10	.33	.29	.324			
	BSc	4.37±2.12	4.56±1.89	4.35%	.19	.628							
Pinch Gauge-Pulp													
Yoga	GNM	2.61±1.29	3.38±1.86	29.50%	.77	.023*	.03	.43	.55	.024*	.12	.34	.005
	BSc	2.64±1.81	2.95±1.32	11.74%	.31	.383							
WLC	GNM	2.45±1.16	2.92±1.62	18.78%	.46	.201	.10	.14	.33	.173			
	BSc	2.55±1.58	2.77±1.39	8.63%	.22	.501							

Note. GNM- General Nursing and Midwifery.

*significant at the 0.05 level, **significant at the 0.01 level

6.3.2.11 Results of purdue pegboard sub-tests

There were significant improvements in purdue pegboard sub-tests, within group comparison (ANOVA) results are reported accordingly; right hand, F (1, 78) =15.696, p < .001, left hand, F (1, 78) =19.168, p < .001, both hands, F (1, 78) =4.643, p = .034, assembly, F (1, 78) =12.187, p = .001. However, interaction between time x group for all the purdue pegboard sub-tests findings were non-significant.

In post-hoc analysis with Bonferroni correction results were significant in both the groups at p<.001 for right hand and left hand. For assembly test, also findings were significant in both the yoga group (p=.009) and the WLC group (p=.027). However, for both hands results were non-significant in the yoga group (p=.248) and the WLC group (p=.064). Results are reported in detail in Table 6.3.2.11, and graphical representation are depicted in Figure 6.3.2.11.1, Figure 6.3.2.11.2, Figure 6.3.2.11.3 and Figure 6.3.2.11.4.

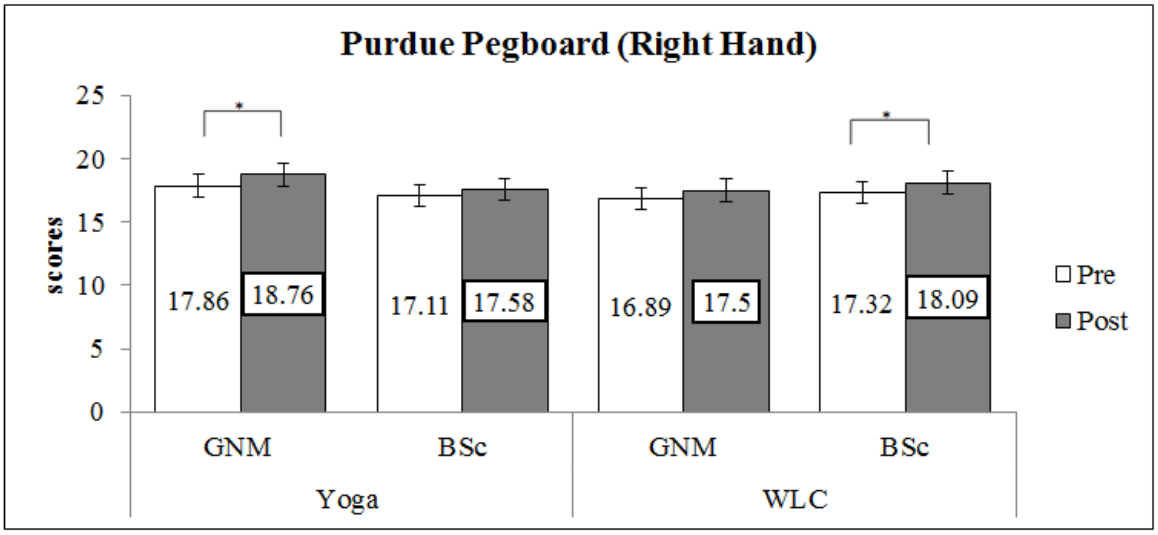

Figure 6.3.2.11.1. Graphical representation of results of purdue pegboard (right hand) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

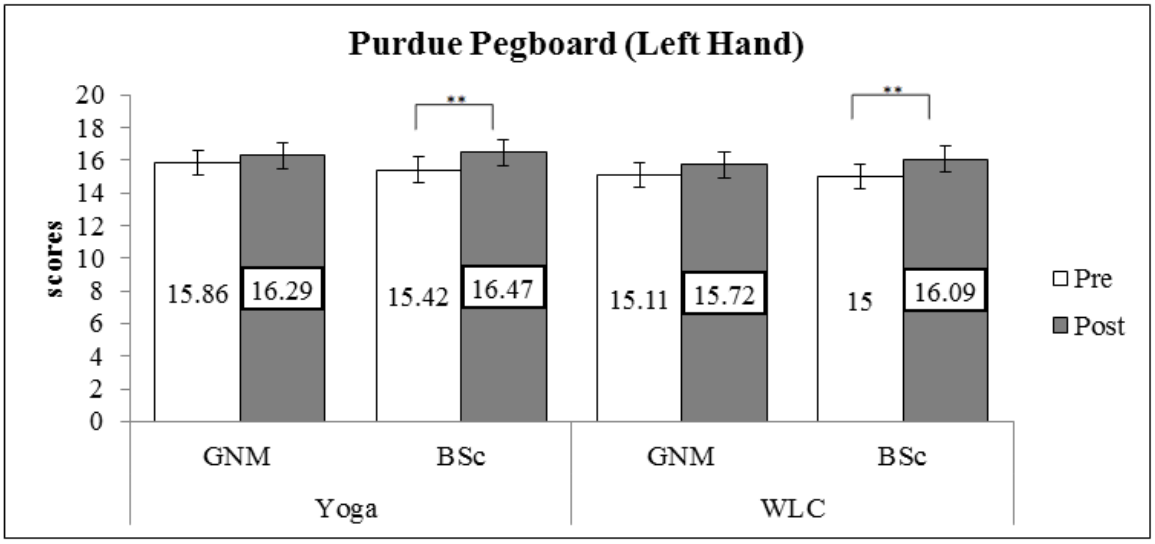

Figure 6.3.2.11.2. Graphical representation of results of purdue pegboard (left hand) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

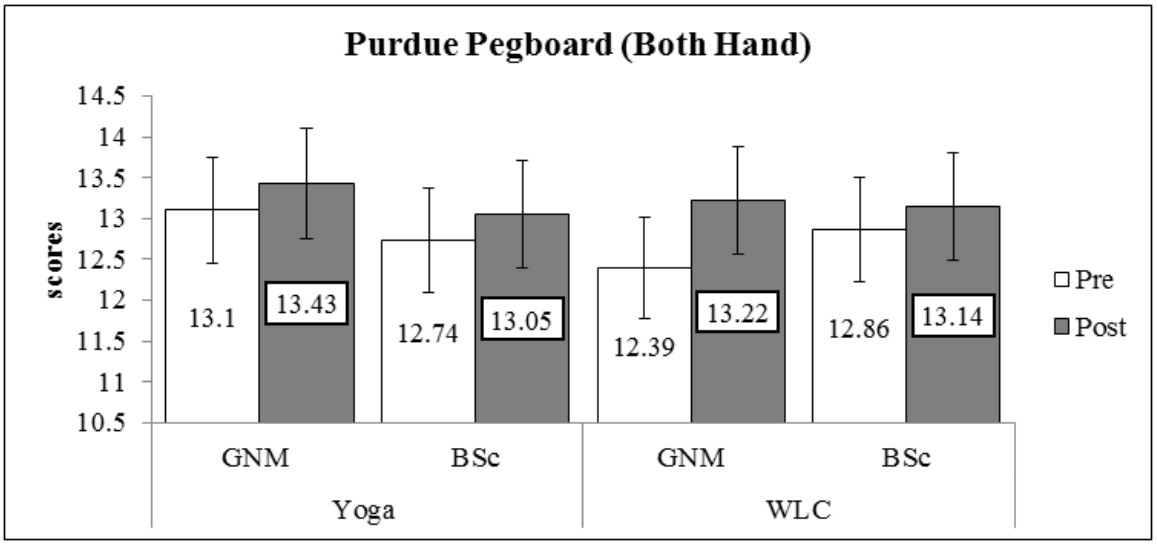

Figure 6.3.2.11.3. Graphical representation of results of purdue pegboard (both hands) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

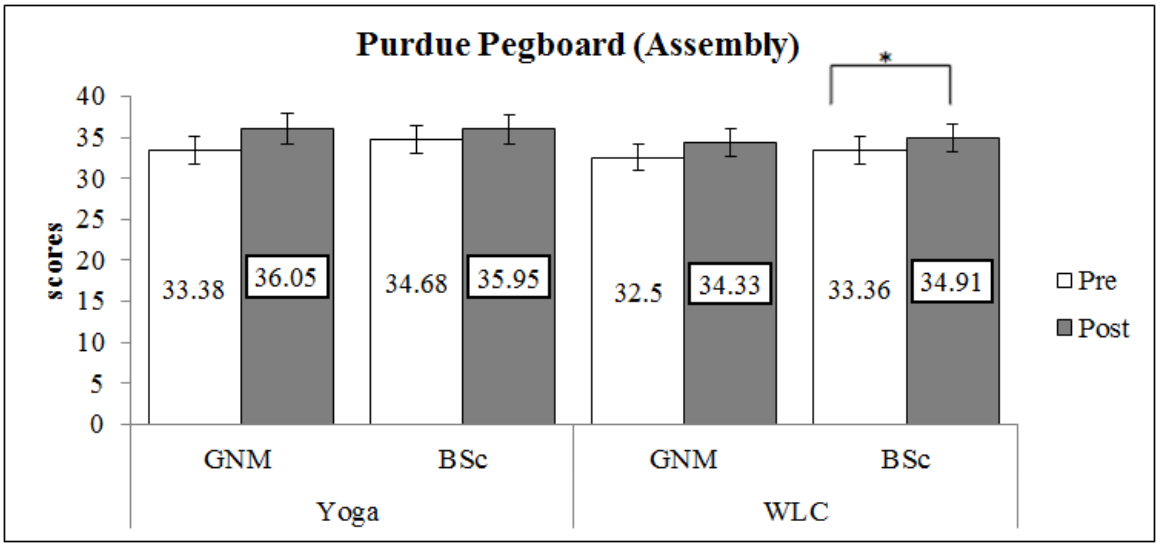

Figure 6.3.2.11.4. Graphical representation of results of purdue pegboard (assembly) in the yoga group (between GNM and BSc students) and the WLC group (between GNM and BSc students)

Table 6.3.2.11

Results of RM-ANOVA of Purdue Pegboard (Sub-tests) in the Yoga Group (n=40) and the WLC Group (n=40)

Group	Sub-group	Pre *M±SD*	Post *M±SD*	% change	Within sub-group		Between sub-group		Within group		Between group		Partial eta square
					Difference	*p*-value	pre vs pre	post vs post	Difference	*p*-value	pre vs pre	post vs post	
Purdue Pegboard (Right Hand)													
Yoga	GNM	17.86±1.49	18.76±1.51	5.10%	.91	.011*	.75	1.18	.70	.006**	.38	.38	.009
	BSc	17.11±1.79	17.58±1.68	2.75%	.47	.199							
WLC	GNM	16.89±1.08	17.50±1.76	3.61%	.61	.108	.43	.59	.70	.006**			
	BSc	17.32±1.89	18.09±2.04	4.45%	.77	.026*							
Purdue Pegboard (Left Hand)													
Yoga	GNM	15.86±1.46	16.29±1.42	2.71%	.43	.232	.44	.19	.73	.006**	.60	.45	.001
	BSc	15.42±1.80	16.47±1.74	6.81%	1.05	.006*							
WLC	GNM	15.11±1.45	15.72±1.71	4.04%	.61	.116	.11	.37	.88	.001**			
	BSc	15.00±1.77	16.09±1.54	7.27%	1.09	.002*							
Purdue Pegboard (Both hands)													
Yoga	GNM	13.10±1.14	13.43±1.29	2.52%	.33	.392	.36	.38	.33	.248	.28	.08	.006
	BSc	12.74±1.59	13.05±1.68	2.51%	.32	.441							
WLC	GNM	12.39±1.24	13.22±2.53	6.70%	.83	.050	.48	.08	.53	.064			
	BSc	12.86±1.61	13.14±1.28	2.10%	.27	.473							
Purdue Pegboard (Assembly)													
Yoga	GNM	33.38±4.66	36.05±6.58	8%	2.67	.012*	1.30	.10	2.00	.009**	1.03	1.35	.004
	BSc	34.68±4.66	35.95±5.08	3.63%	1.26	.249							
WLC	GNM	32.50±5.23	34.33±6.38	5.63%	1.83	.105	.86	.58	1.68	.027*			
	BSc	33.36±5.20	34.91±4.98	4.65%	1.55	.130							

Note. GNM- General Nursing and Midwifery. *significant at the 0.05 level, **significant at the 0.01 level