

CHAPTER 4

RESULTS

This chapter presents firstly the comparison of sociodemographic characteristics, knowledge, beliefs and practices of study participants in the group 1 and group 2 at baseline. Secondly, the effects of educational intervention on teacher's knowledge, beliefs and practices were compared within and between groups at one month (short term) and six month (long term) after intervention.

The response rate of this study from baseline to post test 1 was 97.5% and from baseline to post test 2 was 93.5%. Out of 278 participants in the baseline, 271 participants completed post test 1 at one month after intervention and 260 of them completed post test 2 at six months after intervention. For the group 1, the response rate was 97.7% for post test 1 and 96.2% post test 2. Whereas in the group 2 was 97.2% for post test 1 and 91.7% for post test 2.

Figure 4.1 describes the enrollment and retention of participants in this present study. The number of eligible participant in these 6 schools was 281 teachers, and based on informed consent 278 teachers agreed to follow study and 3 teachers refused. The total number of teacher who were agreed in each group was 133 teachers in group 1 and 145 teachers in group 2. These all of 278 teachers in both groups was set as participants in this study.

In the first measurement for baseline data, each of these participants filled out the questionnaires. At the second measurement, one month after intervention, three subjects in intervention group and four subjects in control group were dropped out from the study with various reasons, the most of reasons was having task outside. Then at the third measurement, six months after intervention, the number of subject who still followed this study was 128 teachers in group 1 and 132 teachers in group 2. Eleven teachers were dropped out from the study with almost the same reasons as at the second measurements, majority of them were having tasks outside.

Normality test of data was done based on the values of skewness, kurtosis, and boxplots. The values for skewness and kurtosis between -2 and +2 are considered acceptable in order to prove normal distribution (George & Mallery, 2010).

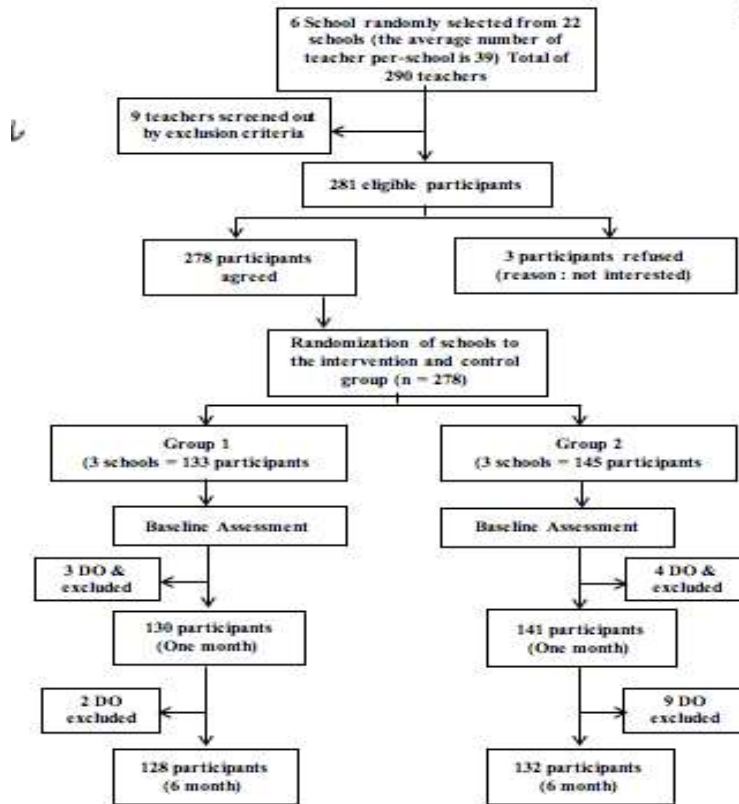


Figure 4.1: Flowchart of enrollment and retention

4.1. Sociodemographic Characteristics of Study Participants

Table 4.1 describes the comparison of sociodemographic characteristics of study participants. Most of the participants in both group were female and race of Jawa. The mean of age was 41.53 ± 9.031 years in the group 1 and 43.19 ± 9.047 years in the group 2. The mean of job duration was 15.79 ± 8.890 years in the group 1 and 17.00 ± 9.388 years in the group 2. There were no significant differences between groups on the mean of age and job duration, proportion of gender, ethnicity, and the field of teaching.

4.2. Participants' Knowledge, Beliefs and Practices on Drug Abuse Prevention at Baseline

Table 4.2 describes the knowledge, each categories of beliefs and practices mean score of participants in the Group 1 and Group 2 at baseline. There were no significant differences between study groups on participants' knowledge, each categories of beliefs and practices at baseline (P value > 0.05).

Table 4.1. Comparison of sociodemographic characteristics between study groups (n=260)

Characteristic	Group 1	Group 2.	Test value	P value
Gender			$\chi^2=0.694$	0.405
Male	47 (36.7)	41 (31.1)		
Female	81 (63.3)	91 (68.9)		
Ethnicity			$\chi^2=2.656$	0.617
Banjar	31 (24.2)	26 (19.7)		
Bugis	12 (9.4)	15 (11.4)		
Jawa	57 (44.5)	69 (52.3)		
Kutai	10 (7.8)	7 (5.3)		
Others	18 (14.1)	15 (11.4)		
Field of Teaching			$\chi^2=3.904$	0.973
Bahasa Indonesia	15 (11.7)	18 (13.6)		
English	13 (10.2)	14 (10.6)		
Counseling	9 (7.0)	11 (8.3)		
Science	19 (14.8)	20 (15.2)		
Social	14 (10.9)	16 (12.1)		
Art	10 (7.8)	10 (7.6)		
Islamic Education	7 (5.5)	9 (6.8)		
Math	14 (10.9)	16 (12.1)		
Christian Education	1 (0.8)	2 (1.5)		
Civic Education	16 (12.5)	9 (6.8)		
ICT	2 (1.6)	1 (0.8)		
Sport Education	8 (6.2)	6 (4.5)		
Age				
M \pm SD	41.53 \pm 9.03	43.19 \pm 9.16	-1.62	0.103
Job Duration				
M \pm SD	15.79 \pm 8.89	7.00 \pm 9.38	0.99	0.322

Table 4.2. Comparison of participants' knowledge, beliefs and practices in drug abuse prevention between groups at baseline (n=260)

Categories	Group 1.	Group 2.	Test value	P value
Knowledge	17.10 \pm 2.49	16.98 \pm 2.290	-0.577	0.564
Min.	11	12		
Max.	21	21		
Beliefs				
Susceptibility	11.81 \pm 2.98	11.55 \pm 3.18	0.697	0.486
Severity	17.88 \pm 1.60	17.61 \pm 1.75	-1.063	0.288
Benefits	11.88 \pm 1.49	11.89 \pm 1.78	-0.756	0.449
Barriers	9.73 \pm 2.257	9.72 \pm 1.788	0.058	0.954
Efficacy	26.56 \pm 3.80	26.35 \pm 3.47	-0.140	0.889
Total beliefs	77.86 \pm 6.81	77.11 \pm 6.37	-0.921	0.358
Practices	8.66 \pm 1.90	8.72 \pm 1.16	-0.323	0.747
Min.	4	6		
Max.	12	11		

*Significant at level P<0.05

M. : Mean

SD. : Standard Deviation

4.3. Within Group Comparison of Changes in Participants' Knowledge, Beliefs, and Practices on Drug Abuse Prevention from Baseline to One Month

Table 4.3 describes within group comparison of participants' knowledge, beliefs and practices between baseline and one month after intervention. Overall the results indicated that the teachers' knowledge, beliefs, and practices at one month after intervention were significantly higher rather than at baseline, both in group 1 and group 2.

Table 4.3. Comparison of knowledge, beliefs and practices within group from baseline to one month after intervention (n=260)

Categories	Pretest mean±SD	Posttest 1 mean±SD	Test value	P value
Knowledge				
Group 1	17.10±2.49	21.92±1.56	21.50	<0.001
Group 2	16.98±2.29	21.64±2.48	19.26	<0.001
Beliefs				
Susceptibility				
Group 1	11.81±2.98	14.19±2.69	16.14	<0.001
Group 2	11.55±3.18	12.55±3.27	-6.38	<0.001
Severity				
Group 1	17.88±1.60	18.91±1.11	-7.32	<0.001
Group 2	17.61±1.75	19.08±0.94	-7.66	<0.001
Benefits				
Group 1	11.88±1.49	13.31±1.31	-7.53	<0.001
Group 2	11.89±1.78	13.04±1.08	-7.13	<0.001
Barriers				
Group 1	9.73±2.25	12.02±2.25	-8.54	<0.001
Group2	9.72±1.78	11.57±1.08	-8.73	<0.001
Efficacy				
Group 1	26.56±3.80	29.66±2.76	-8.75	<0.001
Group 2	26.35±3.47	29.26±2.78	11.99	<0.001
Total beliefs				
Group 1	77.86±6.81	88.09±6.98.	-9.78	<0.001
Group 2	77.11±6.37	85.49±5.64	22.88	<0.001
Practices				
Group 1	8.66±1.90	9.84±1.43	-8.10	<0.001
Group 2	8.72±1.16	10.57±1.08	17.77	<0.001

*Significant difference at P<0.05

4.4. Within Group Comparison of Changes in Knowledge, Beliefs, and Practices from Baseline to Six Month After Intervention

Table 4.4. Comparison of knowledge, beliefs and practices within group from baseline to six months after intervention (n=260)

Categories	Pretest mean±SD	Posttest 2 mean±SD	Test value	P value
Knowledge				
Group 1	17.10±2.49	21.60±1.69	-9.69	<0.001
Group 2	16.98±2.29	22.01±2.07	21.97	<0.001
Susceptibility				
Group 1	11.81±2.98	15.05±2.41	15.38	<0.001
Group 2	11.55±3.18	10.79±2.60	-2.17	0.032
Severity				
Group 1	17.88±1.60	19.06±0.93	-7.20	<0.001
Group 2	17.61±1.75	19.45±0.64	11.96	<0.001
Benefits				
Group 1	11.88±1.49	13.54±1.21	-8.15	<0.001
Group 2	11.89±1.78	13.23±0.70	8.67	<0.001
Barriers				
Group 1	9.73±2.25	12.58±1.79	-9.16	<0.001
Group 2	9.72±1.78	12.06±1.08	15.59	<0.001
Efficacy				
Group 1	26.56±3.80	30.12±2.45	-8.99	<0.001
Group 2	26.35±3.47	29.75±2.44	11.78	<0.001
Total beliefs				
Group 1	77.86±6.81	90.34±5.85	-9.82	<0.001
Group 2	77.11±6.37	85.28±3.29	-9.75	<0.001
Practices				
Group 1	8.66±1.90	10.95±0.78	16.72	<0.001
Group 2	8.72±1.16	11.14±0.75	-10.06	<0.001

Table 4.4 describes within group comparison of participants' knowledge, beliefs, and practices between baseline and six month after intervention. The results indicated that the teachers' knowledge, practices and the majority of beliefs categories at six month after intervention were significantly higher than at baseline ($P < 0.001$), both in group 1 and group 2. The exception was for the participants' perceived susceptibility in the group 2, there was a significant differences between baseline condition and six months after intervention condition ($P = 0.032$). The mean of participants' susceptibility in the group 2 at six months after intervention was significantly lower than at baseline condition.

4.5. Within Group Comparison of Changes in Participants' Knowledge, Beliefs, and Practices Within Group from One Month to Six Month After Intervention

Table 4.5 describes within group comparison of participants' knowledge, beliefs, and practices between one month and six month after intervention. The participants' knowledge in the group 1 at six months after intervention was decreased with the mean change of -0.32 and was significantly lower than at one month after intervention ($P < 0.001$). In contrast with this condition, participants' knowledge in group 2 was significantly increased at six month after intervention, with average of 0.37 higher than at one month after intervention ($P < 0.001$). The same trend with knowledge in the group 1, the mean of participants' susceptibility in group 2 at six months after intervention was significantly decreased 1.76 from the one month after intervention ($P < 0.001$). The participants' total beliefs in the control group was also decreased with the average of 0.21 but not statistically significant different with condition at one month after intervention ($P = 0.586$). On the other hand, all of the other study variables in both groups were significantly higher at six months after intervention rather than at one month after intervention ($P < 0.05$).

Table 4.5. Comparison of knowledge, beliefs and practices within group from one month and six months after intervention (n=260)

Categories	Post test 1 mean±SD	Posttest 2 mean±SD	Test value	P value
Knowledge				
Group 1	21.92±1.56	21.60±1.69	-3.61	<0.001
Group 2	21.64±2.48	22.01±2.07	-3.93	<0.001
Susceptibility				
Group 1	14.19±2.69	15.05±2.41	6.11	<0.001
Group 2	12.55±3.27	10.79±2.60	-4.78	<0.001
Severity				
Group 1	18.91±1.11	19.06±0.93	2.43	<0.016
Group 2	19.08±0.94	19.45±0.64	5.86	<0.001
Benefits				
Group 1	13.31±1.31	13.54±1.21	-3.66	<0.001
Group 2	13.04±1.08	13.23±0.70	2.84	0.005
Barriers				
Group 1	12.02±2.25	12.58±1.79	-6.81	<0.001
Group 2	11.57±1.08	12.06±1.08	7.47	<0.001
Efficacy				
Group 1	29.66±2.76	30.12±2.45	6.47	<0.001
Group 2	29.26±2.78	29.75±2.44	3.77	<0.001
Total beliefs				
Group 1	88.09±6.98	90.34±5.85	9.95	<0.001
Group 2	85.49±5.64	85.28±3.29	-0.54	0.586
Practices				
Group 1	9.84±1.44	10.95±0.78	11.90	<0.001
Group 2	8.72±1.16	11.14±0.75	-7.30	<0.001

5. *Significant difference at $P < 0.05$

5.1. Between Group Comparison of Mean Changes in Participants' Knowledge, Beliefs and Practices from Baseline to One Month After Intervention

Table 4.6 describes between groups comparison of mean changes in knowledge, beliefs and practices from baseline to one month after intervention. Based on the results of independent t or Mann Whitney U test, there were significant differences between study groups in mean changes of perceived susceptibility and practices from baseline to one month after intervention ($P < 0.05$). While in the same time, there were no significant differences between study groups in mean changes of knowledge, perceived severity, benefits, barriers, efficacy, and total beliefs from baseline to one month after intervention, with the each P value of 0.626, 0.086, 0.283, 0.261, 0.834 and 0.129, respectively.

Table 4.6. Between groups comparison of mean changes of knowledge, beliefs, and practices from baseline to one month after intervention (n=260)

Category	Mean Change	Test value	P value
Knowledge			
Group 1	4.82	0.48	0.626
Group 2	4.66		
Susceptibility			
Group 1	2.38	6.82	<0.001
Group 2	1.00		
Severity			
Group 1	1.03	-1.71	0.086
Group 2	1.47		
Benefits			
Group 1	1.43	1.07	0.283
Group 2	1.15		
Barriers			
Group 1	2.29	-1.12	0.261
Group 2	1.85		
Efficacy			
Group 1	3.10	-0.21	0.834
Group 2	2.91		
Total beliefs			
Group 1	10.23	-1.51	0.129
Group 2	8.38		
Practices			
Group 1	1.18	4.59	<0.001
Group 2	1.85		

*Significant difference at $P < 0.05$

5.2. Between Group Comparison of Mean Changes in Participants' Knowledge, Beliefs and Practices from Baseline to Six Months After Intervention

Table 4.7. Between groups comparison of mean changes of knowledge, beliefs, and practices from baseline to six months after intervention

Category	Mean Change	Test value	P value
Knowledge			
Group 1	4.50	1.78	0.074
Group 2	5.03		
Susceptibility			
Group 1	3.24	9.79	<0.001
Group 2	-0.76		
Severity			
Group 1	1.18	8.33	<0.001
Group 2	1.84		
Benefits			
Group 1	1.66	-1.32	0.187
Group 2	1.34		
Barriers			
Group 1	2.85	-1.60	0.108
Group2	2.34		
Efficacy			
Group 1	3.56	-0.04	0.968
Group 2	3.40		
Total beliefs			
Group 1	12.48	-5.61	<0.001
Group 2	8.17		
Practices			
Group 1	2.29	-0.648	0.517
Group 2	2.42		

*Significant difference at P<0.05

Table 4.7 describes the between groups comparison of mean changes in knowledge, beliefs and practices from baseline to six months after intervention. Based on the results of independent t and Mann Whitney U test, there were significant differences between study groups in mean changes of perceived susceptibility, severity, and total beliefs from baseline to six months after intervention, with the same P value of <0.001. However, there were no significant differences between study groups in mean changes of knowledge, perceived benefits, efficacy, barriers and practices

from baseline to six months after intervention, with P value of 0.074, 0.187, 0.108, 0.968 and 0.517, respectively.

4.8 Between Group Comparison of Mean Changes in Participants' Knowledge, Beliefs and Practices from One Months to Six Months After Intervention

The between groups comparison of mean changes in knowledges, beliefs, and practices from one month to six months after intervention was described in table 4.8. The results of analysis using independent-t and Mann Whitney U test indicated that there were significant differences in mean changes of knowledge, perceived susceptibility, severity, total beliefs, and practices. Whereas on the other aspects, the were no significant differences in mean changes of perceived benefits, barriers and efficacy, with the P value of 0.914, 0.553 and 0.791, respectively.

Table 4.8. Between groups comparison of mean changes of knowledge, beliefs, and practices from one month to six months after intervention

Category	Mean Change	Test value	P value
Knowledge			
Group 1	-0.32	-5.74	<0.001
Group 2	0.37		
Susceptibility			
Group 1	0.86	-5.88	<0.001
Group 2	-1.76		
Severity			
Group 1	0.15	-2.32	0.021
Group 2	0.37		
Benefits			
Group 1	0.23	-0.11	0.914
Group 2	0.19		
Barriers			
Group 1	0.56	0.59	0.553
Group2	0.49		
Efficacy			
Group 1	0.46	-0.26	0.791
Group 2	0.49		
Total beliefs			
Group 1	2.25	5.47	<0.001
Group 2	-0.21		
Practices			
Group 1	1.11	-4.53	<0.001
Group 2	0.57		

*Significant difference at P<0.05

4.9 Between and within group comparison of knowledge using two-way repeated measures ANOVA

Effects of intervention on participants' knowledge was further analyzed using the two-way ANOVA test with repeated measures. This test was applied to identify and to analyze the differences in knowledge scores within and between study groups and controlling for baseline sociodemographic factors. The between subjects factor in this study was study groups (group 1 and group 2), whereas the within subjects factor was time of measurements (pretest, post test 1 and post test 2).

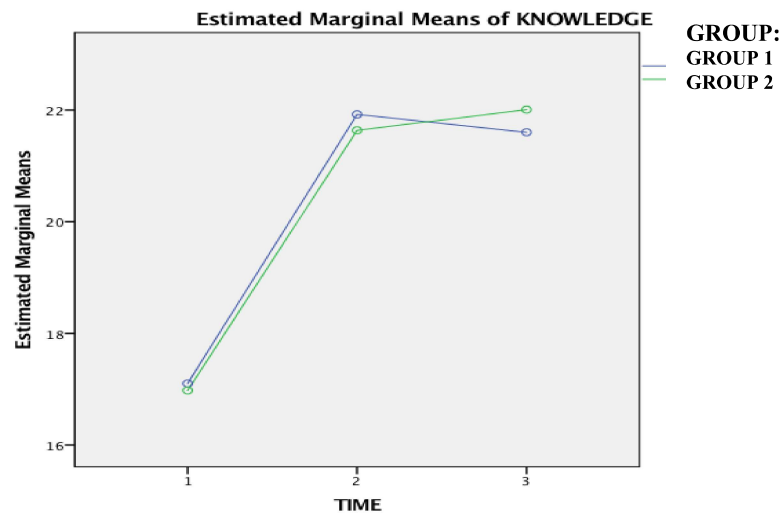


Figure 4.2: Plots of teachers' knowledge over three times of measurement

Based on the plots of mean of knowledge scores for both study groups on three times of measurement as seen in figure 4.1, the interpretation of the test output was focused on the simple effects (Meyers, Gamst & Guarino, 2013). The simple effects test comparing study group for each time of knowledge measurement and the simple effects test comparing three times of knowledge measurement as shown in the table 4.9 and table 4.10.

Table 4.9. Pairwise comparison of mean scores of knowledge between study groups for each time of measurement

Time	Group	Group	Mean Difference	P value
1	Group 1 Group 2	Group 2 Group 1	0.124	0.676
2	Group 1 Group 2	Group 2 Group 1	0.286	0.269
3	Group 1 Group 2	Group 2 Group 1	-0.406	0.086

1: Pretest 2: One month after intervention 3: Six months after intervention

*Significant difference at $P < 0.05$

Table 4.9 showed that the two groups were comparable at the point of time 1 (pretest) with the P value of 0.676. It means that the random assignment was effective in generating two comparable groups. At one month and six months after intervention (time 2 and 3), the two groups were still comparable in knowledge scores with the each P value of 0.269 and 0.086, respectively. There were no significant different between study groups in the mean of knowledge on baseline, post test 1, and post test 2.

Table 4.10. Pairwise comparison of knowledge scores within group at baseline (1), one month after intervention (2), and six months after intervention (3)

Group	Time	Time	MeanDifference	P Value
Group 1	1	2	-4.820	<0.001
		3	-4.500	<0.001
	2	1	4.820	<0.001
		3	0.320	0.001
	3	1	4.500	<0.001
		2	-0.320	0.001
Group 2	1	2	-4.659	<0.001
		3	-5.030	<0.001
	2	1	4.659	<0.001
		3	-0.371	<0.001
	3	1	5.030	<0.001
		2	0.371	<0.001

1:Pretest 2:one month after intervention 3:Six months after intervention

*Significant difference at $P < 0.05$

Table 4.10 compared three times of knowledge measurement for each study group. Accordingly, for the group 1, knowledge scores was increased

significantly from the pretest (time 1) to the one month after intervention (time 2) with the P value < 0.001. However, there was a significant decreased in knowledge scores from one month to six months after intervention (time 2 to 3) with the P value of 0.001. The different condition was showed in the group 2, the knowledge scores was significantly increased at every measurement period (from time 1 to time 2 and from time 2 to time 3).

4.10 Between and Within Group Comparison of Beliefs Using Two-way Repeated Measures ANOVA

Effects of intervention on participants' beliefs was also analyzed using the two-way Anova test with repeated measures. The plot of the mean of beliefs scores, comparison between and within study groups as shown in figure 4.2, table 4.11 and table 4.12.

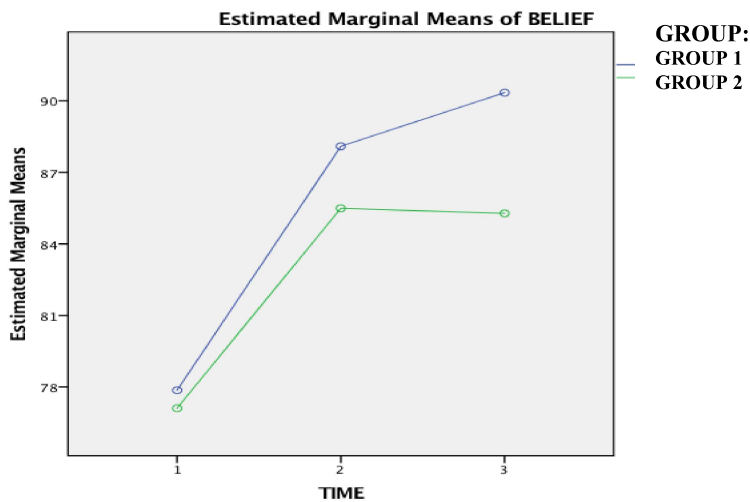


Figure 4.3: Plots of teachers' beliefs over three time of measurement

Based on the plots of mean of beliefs scores for both study groups on three times of measurement as seen in figure 4.2, the interpretation of the test output was focused on the simple effects (Meyers et al., 2013). The simple effects test comparing study group for each time of beliefs measurement and the simple effects test comparing three times of beliefs measurement as shown in the table 4.11 and table 4.12.

Table 4.11. Pairwise comparison of mean scores of beliefs between study groups for each time of measurement

Time	Group	Group	Mean Difference	P value
1	Group 1 Group 2	Group 2 Group 1	0.753	0.358
2	Group 1 Group 2	Group 2 Group 1	2.601	0.001
3	Group 1 Group 2	Group 2 Group 1	5.063	<0.001

1: Pretest 2: One month after intervention 3: Six months after intervention
*Significant difference at P<0.05

Table 4.11 showed that the two groups were comparable at the point of time 1 (pretest) with the P value of 0.358. At one month and six months after intervention (time 2 and 3), the two groups were significantly different each other with the P value of 0.001 and < 0.001, respectively. At one month and six months after intervention, the mean of beliefs scores in group 1 were significantly higher than group 2, with the mean differences of 2.601 and 5.063, respectively.

Based on table 4.12, for the group 1, belief scores was continuous increased significantly at every measurement period. Belief was significantly increased from the pretest (time 1) to the one month after intervention (time 2) with the P value < 0.001. The same condition for the time 1 to time 3 and time 2 to time 3, belief was significantly increased with the same P value (< 0.001). On the other hand in the group 2, belief was not significantly different between one month and six months after intervention, with the extreme P value of 1.000. However, there was a significant increased in belief scores from pretest to one month after intervention (time 1 to 2) with the P value < 0.001.

Table 4.12. Pairwise comparison of beliefs scores within group at baseline (1), one month after intervention (2), and six months after intervention (3)

Group	Time	Time	MeanDifference	P Value
Group 1	1	2	-10.234	<0.001
		3	-12.484	< 0.001
	2	1	10.234	< 0.001
		3	-2.250	0.001
	3	1	12.484	< 0.001
		2	2.250	0.001
Group 2	1	2	-8.386	< 0.001
		3	-8.174	< 0.001
	2	1	8.386	< 0.001
		3	0.212	1.000
	3	1	8.174	< 0.001
		2	- 0.212	1.000

*Significant difference at P<0.05

4.11 Between and Within Group Comparison of Practice Using Two-way Repeated Measures ANOVA

Effects of intervention on participants' practice of drug abuse prevention was also analyzed using the Two-way ANOVA test with repeated measures. This test was applied to identify and to analyze the differences in change within and between study groups and controlling for baseline sociodemographic factors. The plots of practices mean change between factors was shown in figure 4.3.

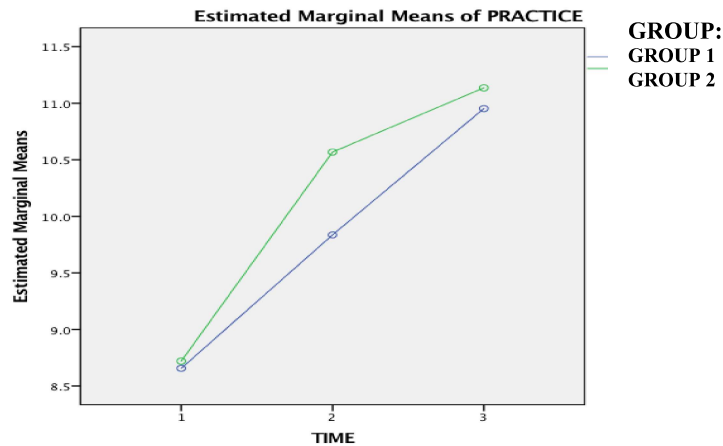


Figure 4.4: Plots of teachers' practice over three times of measurement

According to the plots of mean of practices scores for both study groups on three times of measurement as seen in figure 4.3, the interpretation of the test output was focused on the simple effects (Meyers et al., 2013). The simple effects test comparing study group for each time of practices measurement and the simple effects test comparing three times of practices measurement as shown in the table 4.13 and table 4.14.

Table 4.13. Pairwise comparison of mean scores of practice between study groups for each time of measurement

Time	Group	Group	Mean Difference	P value
1	Group 1	Group 2	-0.063	0.745
	Group 2	Group 1		
2	Group 1	Group 2	-0.732	<0.001
	Group 2	Group 1		
3	Group 1	Group 2	-0.183	0.056
	Group 2	Group 1		

1: Pretest 2: One month after intervention 3: Six months after intervention

*Significant difference at P<0.05

Table 4.13 showed that there was no statistically significant different in practice of drug abuse prevention between study groups at the point of pretest with the P value of 0.745. The relatively same with pretest condition, there were no significant different between study groups at the period of six months after intervention, with the P value of 0.056. The different condition was described at one month after intervention (time 2), there was a statistically significant different in practice of drug abuse prevention between study groups, with the P value < 0.001.

Table 4.14 compared three times of measurement of practice scores for each study group. Both in the group 1 and group 2, practice scores were increased significantly in every period of measurement, from pretest to one month and six months after intervention, and from one month to six months after intervention. All of the significance level was the same, P value < 0.001.

Table 4.14. Pairwise comparison of practices scores within group at baseline (1), one month after intervention (2), and six months after intervention (3)

Group	Time	Time	MeanDifference	P Value
Group 1	1	2	-1.180	<0.001
		3	-2.297	<0.001
	2	1	1.180	<0.001
		3	-1.117	<0.001
	3	1	2.297	<0.001
		2	1.117	<0.001
Group 2	1	2	-1.848	<0.001
		3	-2.417	<0.001
	2	1	1.848	<0.001
		3	-0.568	<0.001
	3	1	2.417	<0.001
		2	0.568	<0.001

1: Pretest 2:one month after intervention 3: Six months after intervention
 *Significant difference at P<0.05