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Comparative Effectiveness of Mental Contrasting and Self-regulation Strategies on Enhancing Goal Setting Skills of Secondary School Students in Urban Nigeria

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ABSTRACT

Although there is plethora of studies on goal setting skills, there is paucity of experimental studies on this field. This study examined the comparative effectiveness of Mental Contrasting Therapy (MCT) and Self-Regulation Strategies (SRS) on enhancing goal setting skills of students in urban Nigeria. A group of 120 students (male=52, female=68) with age range of 14-17 years and mean age of ≥ 13.5 years were purposively drawn from secondary schools in urban Nigeria. Each of the intervention groups was exposed to 10 sessions of therapy designed to improve their goal setting skills. The control group served as comparison group. The result revealed a significant main effect of treatments on goal setting skills ($F_{(2,105)}$ =14.958, $p<0.05$) with the intervention groups demonstrating greater ability to utilize the acquired skills than the comparison group as evidenced on the mean score. The effect size reveals that treatment accounted for 22.2% (η^2=0.222) change in the participants' goal setting skills. Participants treated with SRS reported higher mean score at post-test ($\bar{\chi}$ =69.09) when compared with their counterpart in MCT group ($\bar{\chi}$ =66.93). Self-efficacy and gender have significant interactive effect with treatments $F_{(4,105)}$ = 6.375, $p<0.05$, η^2=0.195 and $F_{(2,105)}$ =13.561, $p<0.01$, η^2=0.205 respectively. The researchers concluded that though the two therapies were effective, SRS was more potent in enhancing goal setting skills of the participants.

Key words: Goal Setting Skills, Mental Contrasting Techniques, Self-Regulation Strategies, Nigeria

INTRODUCTION

The low rate at which students succeed in every ramification of their life suggests that they have inadequate goal setting skills. Evidence abound to show that many students go through life without a roadmap, a sense of direction and no focus on where to appropriately channel their energy, time and resources. Henrik-Jan (2017) opined that many students who lack the capacity to set clear, specific, valuable, measurable and challenging goals may end up feeling frustrated when success is not achieved. Thus, goal setting skill is an essential part of cognitive skills for students to be successful in their academic life and indeed in every facet of their lives. Going through life without goals is like travelling through a new city without roadmaps. Goals are roadmaps for a successful and fulfilled life and it provides a sense of meaning and control to life experiences (Fujita & MacGregor, 2012; Kazeem & Yusuff, 2018).

Goal setting involves the development of an action plan designed to motivate and guide a person or group towards a goal (Grant, 2012). Setting goal involves creating the big picture of what one want to do with oneself and breaking them down into smaller and manageable units (short term goals) and the larger picture (long term goal) and developing an action plan to achieving the set goal (Kazeem& Yusuff, 2018). Studies (Idowu, Ilogu & Madueke, 2014; Teo & Low, 2016) show that high achievers report using goal setting skills more frequently and more consistently than low achievers because they are in possession of special abilities such as determination, interest, self-motivation, hard work, persistence and being focused. Regrettably, there is evidence that this essential skill is not naturally a distributed trait amongst individuals including students (Henrik-Jan,2017). Students without the ability to set goal may graduate with minimal achievements, however, both the student and society benefit when psychologists increase this valuable skill of student in therapy.

There is plethora of studies on goal setting skills, For instance, Idowu, Ilogu and Madueke (2014) investigated the effectiveness of goal-setting skills among senior secondary students' performance in English language in Enugu state. The participants of their study consists of male and female students. The findings showed that performance in English language was enhanced among participants exposed to goal-setting intervention compared to those in the control group. Similarly, Asmus, Karl, Mohnen, and Reinhart

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(2015) examined the influence of goal-setting on workers' performance in an industrial setting at Technische Universität München. The results show that even without financial incentives goal-setting skill improved the workers' performance by 12 to 15% compared to the situation where no goals were defined. Further, Teo and Low (2016) examined the impact of goal setting on employee effectiveness using participants from XYZ Singapore to test the three hypotheses. The outcome shows that goal setting has an impact on employee effectiveness and ultimately improves organisation effectiveness. Recently, Kazeem and Yusuff (2018) assessed the academic goals and study plans on pharmacy students' academic performance and perception. The participants consist of College of Clinical Pharmacy, King Faisal University, KSA students. The result reveals that personalized goal setting and study planning significantly improved continuous engagement with learning, focus on academic goals, and academic performance.

An outstanding feature of all these cited studies is that goal setting skill was used as the predictor variable (independent variable) unlike in the present study which situated it as the criterion variable (a deficit problem to be targeted in therapy). There is therefore, paucity of studies on this field. As a result of these lacunas it became imperative to contribute to existing literature on goal setting skills by investigating the effectiveness of Mental Contrasting Techniques and Self-Regulation Strategies on fostering goal setting skills of students in Ibadan metropolis.

Both therapies have a well reported evidence of effectiveness in diverse population which suggests that it might be potent in enhancing the students' goal setting skills. For instance, mental contrasting has been used across different life domain, for example, health care (Oettingen, Mayer, &Brinkmann, 2010; Gollwitzer, Oettingen, Kirby & Duckworth 2011) and self-care (Adriaanse, de Ridder, & Voorneman, 2013). Similarly, Self-regulation is another therapy which has the likelihood to enhance goal setting skills of this target population. It has been reported to be effective in improving adolescents' self-directed learning (Baumeister, Schmeichel &Vohs, 2007). Managing partner abuse (Heshmati, Khaleghkhah, Jafari, & Marandi, 2016) and treating children and adolescent maladaptive behaviours (Pandey, Hale, Das, Goddings, Blakemore & Viner, 2018). The outcomes of these previous studies suggest that the two therapies will have the likelihood of enhancing goal setting skills.

It is well documented that the level of an individual's goal setting skills is influenced by some environmental, socio-cultural, and psychological factors (Locke &Latham, 2006; Grant, 2012). One psychological variable that may moderate treatment outcome is self-efficacy. Self-efficacy is the belief we have in our own abilities, specifically our ability to meet the challenges ahead of us and complete a task successfully (Ofole & Okopi, 2012). Bandura (1982) defines it as a personal judgment of "how well one can execute courses of action required dealing with prospective situations". There is preliminary evidence to suggest that students with high self-efficacy will have the capacity to accept more challenging tasks, higher abilities to organize their time, increased persistence in the face of obstacles, exhibit lower anxiety levels, show flexibility in the use of learning strategies and have a high ability to adapt with different educational environments unlike their counterpart with low self-efficacy who believes that tasks are harder than they actually are (Doménech-Betoret, Abellán-Roselló, & Gómez-Artiga, 2017; Tiyuri, Saberi, Miri, Shahrestanaki, Bayat & Salehiniya, 2018).

Another factor which has tendency to influence treatment outcome is gender. According to Haig (2004) gender is the range of characteristics pertaining to and differentiating between, masculinity and femininity. Depending on the context, these characteristics may include biological sex (i.e. the state of being male, female, or an inter sex variation), sex-based social structures (i.e. gender roles), or gender identity. There is preliminary evidence to suggest gender differences in components of goal setting skills such as task orientation, ego orientation, and several confidence-source factors (Shane, 2000).

Research Questions

The following three research questions guided the study

1. Will there be a significant main effect of treatments on goal setting skills of secondary school students in Ibadan metropolis?
2. Will there be a significant interactive effect of treatments and gender on goal setting skills of secondary school students in Ibadan metropolis?
3. Will there be a significant interactive effect of treatments and self-efficacy on goal setting skills of secondary school students in Ibadan metropolis?

Statement of Hypotheses

Three null hypotheses were tested at 0.05 level of significance

1. There will be no significant main effect of treatments on goal setting skills of secondary school students in Ibadan metropolis.
2. There will be no significant interactive effect of treatments and self-efficacy on goal setting skills of secondary school students in Ibadan metropolis.
3. There will be no significant interactive effect of treatments and gender on goal setting skills of secondary school students in Ibadan metropolis.

METHODOLOGY

Design

This study adopted a pretest-posttest, control group quasi experimental design with a 3x2x3 factorial matrix. The three rows contain the two treatments groups (Mental Contrasting Techniques and Self-regulation Strategies) as well as the control group while the columns in the matrix represent the moderating variables at two levels gender (male and female) and self-efficacy at three levels (high, moderate and low).

The Schematic representation of enhancement of goal setting skills among senior secondary school students (Table 1);

Table 1. Schematic representation of treatment conditions

0_1	XA_1	0_4
0_2	XA_2	0_5
0_3		0_6

Where;

0_1, 0_2 and 0_3 are pre-tests

XA_1 = Treatment with mental Contrasting Techniques

XA_2 = Treatment with self-regulation therapy

0_4, 0_5 and 0_6 are post-tests.

Sample and Sampling Technique

The demographic characteristics of the respondents show that out of the 120 respondents, 56.7% of them were female while 43.3% were male. This implies that there were more females in this study. Out of the 120 respondents, 46.7% of them were within the age range of 14-16 years, 27.5% of the respondents were less than 14 yrs, while 25.8% were above 17 yrs. This implies that majority of the respondents were within the ages of 14-16 yrs.The mean age of the intervention group was 15.3 years and the control group was 15.0 years.

The target population for the study was all the senior secondary school students in the three randomly selected public secondary schools located in Ibadan North Local Government Area of Oyo State. As at the time of conducting this study, there were approximately a total of 1460 students in the three participating schools out of which one hundred and twenty (120) students who met the inclusion criteria were drawn. A simple random sampling technique (SRS) was adopted to select (40) students from each of the three participating secondary schools. The inclusion criteria include; (1) the student must be senior secondary school one (SS1), (2) must bring parental consent form duly signed by parents,(3), must be willing to participate in all the sessions and (4) most importantly, must score between 15-25 in the researcher developed screening instrument. Scores of 15 to 25 was considered as an evidence of deficit goal setting skills.

Instrumentation

Students with deficit goal setting skills was identified through the use of researchers developed instrument entitled' *identifying abilities to set goals'* The researchers generated a 15 item self- report questions after a thorough literature review on the concept of goal setting skills. The items were positively worded and anchored on five point Likert type of strongly agree (5) to strongly disagree (1). The higher the score the higher the likelihood of the respondent having satisfactory goal setting skills. The highest obtainable score was 75 while the minimum obtainable score was 15. A score of 50 to 75 were regarded as high goal setting skills, from 26-50 is moderate goal setting skills while from 25 to 01 is regarded low goal setting skills. Only respondents in the last category were eligible to participants in the study as their score suggests a deficit goal setting skills. Test and measurements experts in the Department of Guidance and counseling trimmed the original 22 items to 15 and thereafter certified it suitable to measure the concept under consideration. In order to test for its stability over time, test retest was conducted using the same instrument within a week interval and the reliability coefficient of r= 0. 87 was obtained.

Generalized self-efficacy scale developed by Schwarzer and Jerusalem (1995) was used to categorise the participants into two types of self-efficacy. It is a self-report measure used to assess the way in which the student perceives their ability to perform novel or difficult tasks, and to cope with hardship. It was a ten item questionnaire anchored on evaluation test that is ranging from (1) Not all true, (2) hardly true, (3), moderately true, (4) exactly true. Sample items include; "*I can always manage to solve difficult problems if I try hard enough'. 'It is easy for me to stick to my aims and accomplish my goals, I can usually handle whatever comes my way"*, The revalidated items have internal consistency of 0.77 as reported by the authors. The instrument has been used by a Nigerian researcher who certified it valid (Ofole, 2016)

The criterion variable (outcome) was measured with Gaumer, Erickson, and Noonan (2018) goal setting questionnaire. The instrument was originally developed by Research Collaboration in 2015 to measure the students' proficiency in three essential components of goal setting skills. The questionnaire consist19 items based on a 5-point, Likert-type scale ranging from 1 (Not very like me) to 5 (very like me). Sample items include; *"I set goals to help me be more successful in school, I set short-term goals for myself (like finishing all my homework or exercising for an hour)".* It is anchored on 100-point scale where the scores can be interpreted similar to grades (e.g., 70-79 is a C). The questionnaire showed a stability using Cronbach's coefficient alpha of 0.78 with 3,486 4th grades. A pilot study was used to revalidated the instrument using other non-participating local government areas after with a reliability coefficient of r=0.71 was obtained.

Procedures

A formal approval letter was obtained from the three Principals of the participating schools namely; Mount Olivet Grammar School Bodija, Bishop Onabanjo Grammar School Ashi Bodija, and Ijokodo High school Sango, Ibadan). In each school, the students were assembled at the school halls and the researchers were introduced and given the opportunity to discuss the purpose of the study, the modalities, the need to obtain parental consent by signing of the form etc. Intact classes were used to avoid interruption in the school curriculum. The school principals thereafter, emphasized the need for volunteering participation by requesting those that were not interested to *opt out* of the study. The goal setting skills questionnaire was thereafter administered to identify participants to be targeted

for treatments. Those who met the inclusion criteria were randomly assigned to treatment conditions (Mental Contrasting Technique, Self-Regulation Strategies and control group). Those in the treatment groups were exposed to ten sessions of therapy which lasted for an hour per session. Each session has specific objectives which was SMART (specific, measurable, realistic and time bound). The researchers adhered strictly to the therapy. The summary of the intervention is presented below.

Experimental Group One: Mental Contrasting Technique (MCT)

Mental contrasting therapy was aimed at changing (contrasting) the negative cognition, emotion and behaviours that the students have about their academic activities (Oettingen, Mayer, Sevincer, Stephens, Pak, & Hagenah, 2009) and replacing it with a more rational and objective perspectives. The therapy was designed in such a way as to assist students develop specific, positive expectations as well as focus on the obstacles between them and those expectations. It is a comprehensive Intervention that uses WOOP (Wish, Outcome, Obstacle, Plan) to support students in effectively mastering their everyday life and long-term goals, across domains such as career achievement, health, and interpersonal domains. Mental contrasting will encourage students to think positively and set realistic, short and long term goals. The therapy also has potency to enable them identify hurdles and obstacles to be expected and the necessary plans to put in place in order to achieve their goals. For instance "*I want to raise my score in Mathematics from 40 to 60, "I want to concentrate more on my book instead of watching TV*." The facilitators adopted participatory methodologies (brainstorming, drama and role play, etc.) and not traditional didactic methods to facilitate the sessions outlined below;

Summary of Sessions

Session One: Introduction, general orientation and collection of baseline data

Session Two: Discussion of the meaning of mental contrasting and its techniques

Session Three: Identification of students short and long term goals

Session Four: Direct teaching on importance of having a goal and importance of completing goals

Session Five: Evaluation of how the participants think and how this impacts their cognition, emotion, and goal getting behaviours

Session Six: Visualization technique using WOOP (Wish, Outcome, Obstacle, Plan)

Session Seven: Group work on development of actions plans to overcome obstacles to goal realization.

Session Eight: Short video on how to apply mental contrasting techniques

Session Nine: Experience sharing of gains from exposure to the therapy

Session Ten: Summary of all the sessions, post-test administration and termination of therapy.

Experimental Group Two: Self-regulation Strategies (SAT)

Self-regulation is based on social cognitive theory and it is premised on the fact that "humans are able to control their behaviour through a process known as self-regulation by altering their responses" (Baumeister et al., 2007).The researchers used self-regulation to empower the students with competencies such as capacity for controlling their emotions, the ability to have positive interactions with others, the skill of avoiding inappropriate or aggressive actions, as well as the potential to carry out self-directed learning (Baumeister et al., 2007). Through the implementation of the comprehensive self-regulation module designed by the researchers, it was expected that the participants would learn how to self-regulate their behaviours and monitor their actions. The therapy also has the capacity assist the students to understand why it was important to regulate their choices and have strategic plans in place to make the right choice. Students would also learn to consciously manage and control what they think, say and do in becoming the person they want to be in both short- and long-term situations.

Summary of Sessions

Session One: Self-introduction, general orientation and collection of pre-treatment data

Session Two: Discussion of the meaning of goal and its importance in life

Session Three: Assessment of participant's impulsive responses to life opportunities using cards

Session Four: Group work on self-observation and judgment,

Session Five: Role plays on how to practice self-control and self-responses

Session Six: Demonstrations of how to direct thoughts, feelings, and actions, toward the attainment of one's goals

Session Six: Modeling of how to set SMART goals

Session Seven: Film on self-reinforcement: rewards and punishments.

Session Eight: Brainstorming on how to set short and long term goals.

Session Nine: Building participants self-efficacy beliefs through self-statements.

Session Ten: Summary of sessions, post- test administration and termination of therapy.

The control group was not exposed to therapy; they were however compensated with a lecture entitled *useful hints on internet usage*. The participants were entertained on daily basis with snacks and drinks. On the last session, there appreciated for being active throughout the sessions and post intervention data was thereafter collected. The summary for control group is presented thus;

Summary of Session for Control Group

Session One: Self-introduction, general orientation and collection of baseline data

Session Two: Useful hints on internet usage

Session Three: collection of post data and termination of therapy.

METHOD OF DATA ANALYSIS

Results

The Statistical Package for the Social Sciences (SPSS) version 6 was used for statistical analysis. ANCOVA and Bonferonni Pair-wise comparison were adopted as the statistical tools. ANCOVA tested the main and interaction effects of treatments while Bonferonni pair-wise comparison was used as post hoc analysis to determine the source of the significant difference in the groups.

Hypothesis one

There will be no significant main effect of treatments on goal setting skills of secondary school students in Ibadan metropolis. The result of this hypothesis is presented in Table 2.

Table 2 reveals that there was significant main effect of treatments on goal setting skills of participants; $F_{(2,105)}$= 14.958, p< 0.05, η^2=0.222. Hence the null hypothesis was rejected. Therefore, treatment had significant effect on goal setting skills. Size of effect reveals that treatment accounted for 22.2% (η^2=0.222) change in adolescents goal setting skills. That is, variation in treatment score had large effect on adolescent goal setting skills. For further justification on the margin of difference between the treatment groups and the control groups, the pair-wise comparison using Bonferonni adjustment was computed and the result is shown in Table 3.

Table 3 reveals that after controlling for the effect of pre-goal setting skills, experimental group II (self-regulation) ($\bar{\chi}$ = 69.09) displayed the highest goal setting skills, followed by experimental group I (mental contrasting) ($\bar{\chi}$ =66.93) and control group ($\bar{\chi}$ =55.40). This suggests that self-regulation was more potent in improving goal setting skills than mental contrasting therapy. The coefficient of determination (Adjusted R-squared =.753) overall indicates that the differences that exist in the group account for 75.3% in the variation of adolescents goal setting skills.

Hypothesis Two

There will be no significant interactive effect of treatments and self-efficacy on goal setting skills of secondary school students in Ibadan metropolis.

The result presented on Table 2 further shows that there was a significant interactive effect of treatments and self-efficacy on adolescents goal setting skills; $F_{(4,105)}$= 6.375, p<0.05, η^2= 0.195. Hence the null hypothesis was rejected. This implies that self-efficacy significantly moderated the effect of treatment on goal setting skills. The table further

Table 2. Summary of 3×2 × 3 Analysis of Variance (ANCOVA) showing the main effect of treatments on goal setting skills of participants

Source	Type 111 Sum of Squares	DF	Mean square	F	Sig	Partial Eta Squared
Corrected Model	3099.647[a]	14	221.403	26.921	0.000	0.782
Intercept	1208.964	1	1208.964	146.999	0.000	0.583
Pretest Goal setting skills	176.967	1	176.967	21.518	0.000	0.170
Treatment	246.034	2	123.017	14.958	0.000	0.222
Gender	0.931	1	0.931	0.113	0.737	0.001
Self-efficacy	236.736	2	118.368	14.392	0.000	0.215
Treatment * gender	223.056	2	111.528	13.561	0.000	0.205
Treatment * self-efficacy	209.712	4	52.428	6.375	0.000	0.195
Gender * self-efficacy	24.560	1	24.560	2.986	0.087	0.028
Treatment * gender * self-efficacy	0.509	1	0.509	0.062	0.804	0.001
Error	863.553	105	8.224			
Total	484790.000	120				
Corrected Total	3963.200	119				

R Squared=0.782 (Adjusted R Squared=0.753)

Table 3. Bonferonni Pair-wise comparison showing the significant differences among various treatment groups and control group

(I) treatment	(J) treatment	Mean difference (I-J)	Std. error	Sig.[d]
Control group ($\bar{\chi}$ = 53.693)	Self-regulation group	-15.400*	3.317	0.000
	Mental-contrasting group	-13.239*	3.439	0.001
Self-regulation group ($\bar{\chi}$ = 69.093)	Control group	15.400*	3.317	0.000
	Mental-contrasting group	2.161*	0.811	0.027
Mental-contrasting group ($\bar{\chi}$ =66.932)	Control group	13.239*	3.439	0.001
	Self-regulation group	-2.161*	0.811	0.027

reveals that the effect of self-efficacy on treatment accounted for 19.5% change in participants' goal setting skills; that is the interaction of treatments and self-efficacy had moderate effect in the variation of participants' goal setting skills score. To further clarify where the difference lies, a pair-wise comparison using Bonferonni adjustment was computed. The result is shown in Table 4.

Table 4 reveals that after controlling for the effect of pretest goal setting skills, experimental group II (self-regulation) was moderated more by self-efficacy than experimental group I (mental contrasting therapy) and control group. Participants in experimental group II displayed varying level of goal setting skills based on their self-efficacy level. Self-regulation intervention was more effective in improving goal setting skills among participants with high self-efficacy ($\bar{\chi}$ =80.61) than those with moderate ($\bar{\chi}$ =67.45) and low self-efficacy ($\bar{\chi}$ =60.85). While mental contrasting therapy intervention was moderately effective in improving the goal setting skills of participants with high self-efficacy ($\bar{\chi}$ =68.84), moderate self-efficacy ($\bar{\chi}$ = 67.45), low self-efficacy ($\bar{\chi}$ = 62.06). This interaction is depicted on figure 1.

Table 4. Bonferonni pair-wise comparison showing interactive effect of treatment and self-efficacy on goal setting skills

Treatment	Self-efficacy	Mean	Std. error
Control group	High self-efficacy	55.796[a]	2.275
	Moderate self-efficacy	51.003[a]	2.968
	Low self-efficacy	54.866[a,b]	1.910
Self-regulation group	High self-efficacy	80.608[a,b]	1.789
	Moderate self-efficacy	67.459[a]	0.912
	Low self-efficacy	60.847[a,b]	1.613
Mental contrasting group	High self-efficacy	68.841[a]	1.905
	Moderate self-efficacy	67.455[a]	1.199
	Low self-efficacy	62.066[a,b]	1.735

Hypothesis Three

There will be no significant interactive effect of treatments and gender on goal setting skills of secondary school students in Ibadan metropolis.

Table 2 further shows that there was a significant interaction effect of treatment and gender on adolescents goal setting skills; $F_{(2,105)} = 13.561$, $p<0.01$, $\eta^2= 0.205$. Hence the null hypothesis was rejected. This implies that gender significantly moderated the effect of treatment on goal setting skills. The table further reveals that the effect of gender on treatment accounted for 20.5% change in participants' goal setting skills; that is the interaction of treatment and gender had large effect in the variation of participants' goal setting skills score. To further clarify where the difference lies, a pair-wise comparison using Bonferonni adjustment was computed. The result is shown in Table 5.

Table 5 reveals that after controlling for the effect of pretest goal setting skills, experimental group II (self-regulation) was more moderated by gender than experimental group I (mental contrasting therapy) and control group. Participants in experimental group II displayed varying level of goal setting skills based on the gender. Self-regulation intervention was more effective in improving goal setting skills among female participants ($\bar{\chi}$ =75.65) than their male counterparts ($\bar{\chi}$ =62.53). While mental contrasting therapy intervention was also effective in improving the goal setting

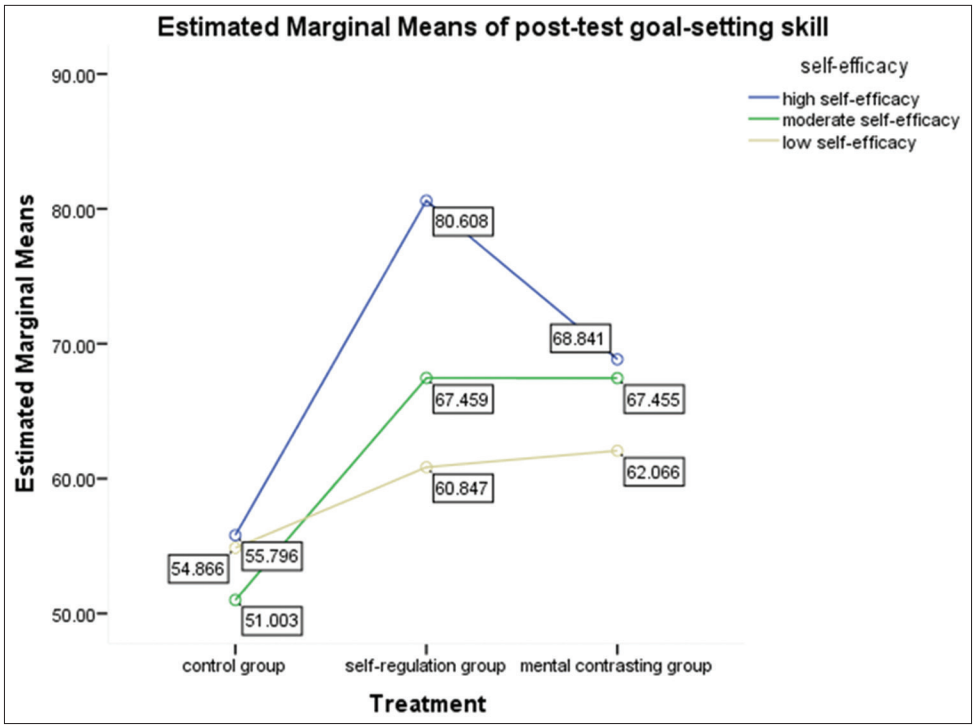

Figure 1. Line-graph showing the interactive effect treatment and self-efficacy

skills of female participants ($\bar{\chi}$ =70.37) than male participants ($\bar{\chi}$ = 64.64).

DISCUSSION

The findings from this study show that there was a significant difference after treatments among the three groups; mental contrasting, self-regulation and the control group. It therefore, suggests that participants in the experimental groups benefited from the treatment package unlike their counterpart in the control group. This outcome corroborates the findings of previous studies (Kolovelonis, Goudas, Dermitzaki, & Kitsantas, 2013; Duckworth, Kibby, Gollwitzer, & Oesttingen 2013; Velasquez & Sheehy 2015; Gholam-Reza & Anahid, 2014) who found mental contrasting and self-regulation therapy to be effective therapy in diverse settings. One of the reasons for the effect of the programme may be the duration and intensity of the intervention which enabled the participants to internalize the treatment gains. Other interventions with shorter duration appear to have less effect on goal setting skills. Another possible reason could be due to the comprehensiveness of the intervention as well as the participatory methodologies adopted by the researchers for its delivery. The positive outcome of this study also suggest that the theoretical basis for the intervention was appropriate for fostering goal setting skills among students.

Table 5. Bonferonni Pair-wise comparison showing interactive effect of treatment and gender on goal setting skills.

Treatment	Gender	Mean	Std. error
Control group	Male participant	56.244[a]	2.410
	Female participant	49.866[a,b]	2.428
Self-regulation group	Male participant	62.532[a,b]	1.314
	Female participant	75.654[a,b]	1.107
Mental contrasting group	Male participant	64.639[a]	1.428
	Female participant	70.370[a,b]	1.299

The result also revealed an unequal contribution treatment effects. Results in Table 4 showed that experimental group II (self-regulation therapy) has a higher mean score than experimental group I (and control group. This implies that self-regulation was more potent in enhancing participants' goal setting skills than mental contrasting technique. This outcome could be partly because self-regulation has several sub process and clear principles that an individual required to cope with life challenges. Secondly, it could be as a result of the effective skills utilised by the facilitators which assisted participants to think and visualize the possible outcome of their goals while recognizing the obstacles that could prevent them from achieving their set goals. This is in tandem with outcome of previous studies (Baumeister et al., 2007; Heshmatiet al., 2016; Pandeyet al., 2018) who gave credence to effectiveness of self-regulation therapy.

There was a significant interactive effect of treatments and self-efficacy on adolescent's goal setting skills. Hence, the null hypothesis was rejected. This implies that self-efficacy significantly moderated the effect of treatments on goal setting skills. This corroborated the findings of several studies (Doménech-Betoret, et al., 2017; Tiyuri et al. 2018) that found that self-efficacious learner tends to anticipate successful results and engage in difficult tasks to maintain their commitment to learning. This finding is plausible given that self-efficacy is documented to have a major role in self-regulatory behaviours of individuals. It enabled participants to tackle challenges believing in their abilities to handle situations. Bandura (1982) justified this outcome with his theoretical positions that an individual's attitude, abilities and cognitive skills comprised his self-system belief in their capabilities to successfully control actions or events in their lives. A person's sense of self-efficacy can play a major

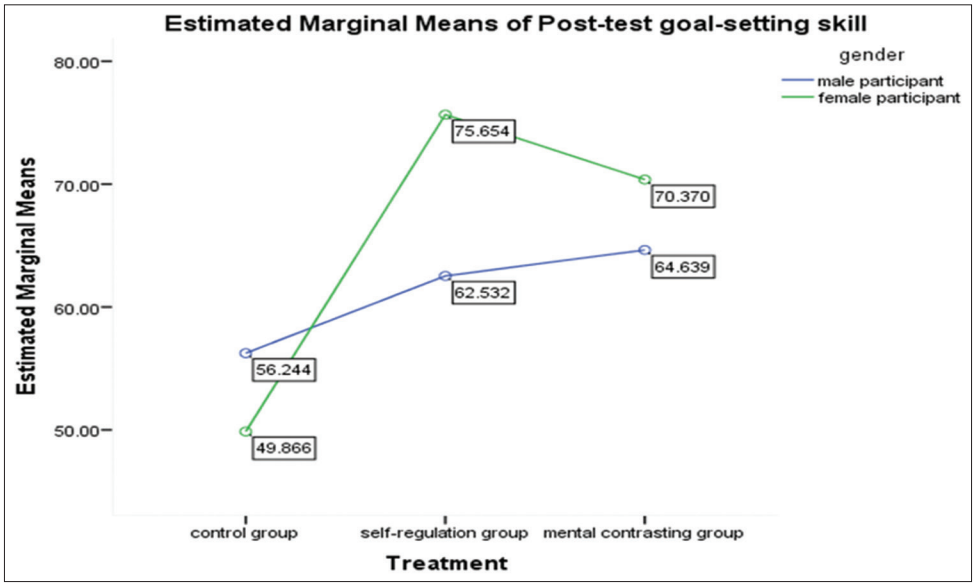

Figure 2. Line-graph showing the interactive effect treatment and gender

role in how he or she approaches goals, tasks, and challenges (Ofole & Okopi, 2012; Ofole, 2016). Oesttingen (2009) reported that people with high self-efficacy are energized to fulfill their set goals and perceived obstacles often stimulate such high self-efficacy people to greater efforts, whereas someone with low self-efficacy will tend towards discouragement and would eventually give up.

There was also a significant interactive effect of treatments and gender on adolescent's goal setting skills. Hence the null hypothesis was rejected. This implies that gender significantly moderated the effect of treatments on goal setting skills. This finding agrees with previous researches (Brabban, Tai & Turkington, 2009; Felmingham & Bryant, 2012) who reported significant differences between men and women response to treatment. Felmingham and Bryant (2012); Brabban, Tai and Turkington (2009) found that females benefitted more in their studies. Similarly, Meece and Painter (2008) reported gender difference in self-regulatory processes in elementary and secondary students' use of self-regulated learning strategies across a number of different academic domains, including mathematics and science, in which boys have outperformed girls. This finding is not surprising given that Nauert (2015) reported four critical differences in how male and female set their goals have been reported. The possible reason for this finding could be found in the fact that women are reported to be more emotional than men (Chaplin & Aldao, 2013) and emotion is regarded as one giant part in goal setting skills. They argue that if one is not emotionally connected to his or her goals it is not likely that it will be achieved (Caballo et al., 2014).

CONCLUSION

The outcome of the study provided empirical evidence to suggest that mental contrasting and self-regulation strategies were suitable for enhancing goal setting skills. However, the result shows unequal treatment effect. Groups in self-regulation treatment gained more in therapy than those in mental contrasting group. In addition, self–efficacy and gender satisfactorily moderated treatment outcomes. This means that there was a gender difference in goal setting skills after treatments which were traceable to gender differences. The female were found to benefit more in therapy than their male counterpart. It also shows that participants in the experimental groups displayed varying level of goal setting skills based on their self-efficacy level with participants with high self-efficacy showing superior treatment gains.

This study has both theoretical and practical implications for counselling practices. It behooves counselling psychologists to apply the two therapies in modifying deficit goal setting skills among in school adolescents. This study has contributed significantly in expanding knowledge in the field of mental contrasting and self-regulation therapies. Towards this end, counselling psychologists, parents and other helping professionals are implored to encourage and support students in setting valuable, specific, measurable and relatively challenging goal in all sphere of life using different fora such as workshops, seminars and trainings.

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