KnE Life Sciences
ICO-HELICS
The 1st International Conference on Health, Technology and Life Sciences
Volume 2019

Conference Paper

An Effective Training Model of Applied Basic Transactional Analysis Module to Improve Problem-solving Skill on Parent–Child Relationship in Indonesia

G A Maharatih[1], R I Ismail[2], M Mansyur[3], and A Sudiyanto[1]

[1]Department of Psychiatry Medical Faculty of Universitas Sebelas Maret – Dr Moewardi Hospital, Surakarta
[2]Department of Psychiatry Medical Faculty of University of Indonesia – Cipto Mangunkusumo Hospital, Jakarta Department of Public Health, Medical Faculty of University of Indonesia, Jakarta
[3]Department of Public Health, Medical Faculty of University of Indonesia, Jakarta

Abstract

Knowledge and skills for psychiatrists on applied transactional analysis in Indonesia have not been studied extensively. Our study aimed to obtain an effective training model to improve knowledge and skills on applied basic transactional analysis (BTA) in Indonesia. The study was conducted on 72 psychiatric residents of Universitas Sebelas Maret and University of Indonesia. The subjects were randomized into training and reading groups of BTA module. The BTA knowledge and skills were evaluated with MCQ and OSCE. Cox Regression analysis was performed to evaluate the improvement and its affecting factors. There were significant differences regarding changes in knowledge evaluation and BTA skill before and after treatment with p<0.001; 95%CI: 2.63-6.06 and p<0.001; 95% CI=12.86 to 24.03, respectively. Training model treatment significantly improved BTA knowledge (Hazard ratio 2.54; 95% CI = 1.12 to 5.75; p = 0.026) and BTA skills (Hazard ratio = 4.37; 95% CI = 1.81 to 10.54; p = 0.001). Training model and module have been demonstrated to be able to improve BTA knowledge and skill two to four-fold compared to the reading model. Therefore this technique can be applied by psychiatrists and the curriculum of psychiatry residency education policy maker in Indonesia

Corresponding Author:
G A Maharatih
gek.maharatih66@gmail.com

Received: 23 February 2019
Accepted: 6 March 2019
Published: 25 March 2019

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICO-HELICS Conference Committee.

1. Introduction

Changes in information technology affecting health care system have demanded doctors, particularly psychiatrists to be able to interact with patients and they must have the competency to provide optimal health care services based on principles of openness, responsibility, effectiveness, and efficiency [1]. It may affect the educational system on clinical medicine that has to prepare the students to reach the necessary competency required for their future clients [2, 3]. Such competencies can be reached through

competency-based professional medical education in order to improve the quality of service holistically, including biological, psychological and social factors [4, 5]. To achieve optimal outcomes of competencies for the students, an appropriate and effective teaching and educational strategy is essential.

Problems on the parent-child relationship are often considered as mild or common problems; while the impacts on behavior problems are actually extremely great. The problems may develop behavior disorders, substance abuse depression or even death due to suicides. Various psychotherapy techniques can be used to manage problems on the parent-child relationship, including individual therapy, group therapy, marital therapy or familial therapy. However, results of studies on those therapies have demonstrated that the improvement is temporary and the therapies only focus on specific problems and they cannot change the structure of someone's personality [6-8]. The advantage of transactional analysis (TA) in the management of relationship problems includes that it can change the structure of someone's personality through an approach using daily sentences that can be easily understood and therefore, it is practical to apply them for patient care [3, 9, 10].

The aim of our study was to determine the method or training model, which is more effective to reach competencies on applied BTA knowledge and skills to solve the problems on the parent-child relationship and its various affecting factors. We hypothesized that there were different competencies between subjects in the group receiving training treatment and those with reading treatment.

2. Methods

The design of our study was a quasi-experimental study that provided treatments for two groups, i.e. the training group (receiving TA module from Indonesian Collegium of Psychiatry and BTA module to solve problems on parent-child relationship along with 3-days mentoring) and the reading group (receiving treatment of reading TA module from Indonesian Collegium of Psychiatry and BTA module for 3 days). The study was conducted in Surakarta and Jakarta after having approval from Ethics Committee of Faculty of Medicine, University of Indonesia and had received license to conduct the research from Department of Psychiatry, Cipto Mangunkusumo Hospital / Faculty of Medicine, University of Indonesia, Jakarta and Department of Psychiatry at Doctor Moewardi / Faculty of Medicine, Universitas Sebelas Maret (UNS), Surakarta. Selection of eligible subjects was performed by simple randomization that meets the minimal sample size according to sample size calculation, which included anticipation for lost

to follow-up cases, i.e. 36 subjects for each treatment group. The selection of subjects was completed when all residents were included. The participants gave their written consent to be willing to participate in the study by signing informed consent forms.

Previously, an equalization of prior knowledge on basic TA was carried out for both groups by providing AT modules issued by the Indonesian Collegium of Psychiatry and each subject was instructed to read the module. After 3 days, their TA knowledge was evaluated using MCQ test. The results were then analyzed using SPSS version 11.0 computer program software. When there was no equality of prior knowledge, mentoring and group discussions were carried out with a focus to improve the prior knowledge. Mentoring and discussion were provided by the investigators in 2 hours for each session, which was conducted in Jakarta and Solo in a week period following the MCQ test. Moreover, the MCQ test was repeated and reanalyzed until the equality of prior knowledge had been reached. The evaluation on competence was conducted using a category of competency; i.e., the competency was considered ”good” when the value was at or more than 70 (score $\geq$14) and was considered ”poor” when the value was less than 70 (score <14) for the MCQ test. The evaluation on the comparison of basic TA competency skills for solving problems of parent-child relationship was performed using OSCE test and the passing grade was determined using the borderline regression method.

3. Result

There were 36 subjects for each group at the beginning of the study. Based on the evaluation on demography of subject characteristics, we found different proportion based on gender ($p= 0.030$), educational background on TA ($p < 0.001$), age group ($p= 0.023$) and terms of study ($p= 0.012$) in the subjects of group treated with training compared to those treated with reading; while the training history demonstrated equality as shown in Table 1.

Results on the comparison of average basic TA knowledge measured by the score of MCQ test and evaluation on skills measured by the score of OSCE test are presented in Table 2. Results of MCQ evaluation showed that there was no difference of the average pre-test score using MCQ test in the reading group (11.25, SD= 2.05) compared to the training group (11.50, SD= 1.96). The mean difference was 0.25; $p= 0.715$; and 95%CI: 0.698-0.716, which indicates that there was an equality of prior knowledge in our subjects.

Table 1: Subject distribution based on gender, history of TA educational, training and age.

Characteristics	Training (n=36)		Reading (n=36)		*p* (95% CI)
	F	%	f	%	
Gender					
Men	18	50.0	9	25.0	0.030
Women	18	50.0	27	75.0	
Years of residential education					
< 2 years	8	22.2	19	52.8	0.023
≥ 2 years	28	77.8	17	47.2	
Age					
< 35 years	14	38.9	21	58.3	0.012
≥ 35 years	22	61.1	15	41.7	

Table 2: Comparison of mean MCQ and OSCE score in both groups.

Variables	n	Mean (±SD)	Mean difference	*p* (95% CI)
MCQ *Pretest*				
Training	36	11.25 (2.05)	0.25	0.715*(0.70 – 0.72)
Reading	36	11.50 (1.96)		
MCQ *Posttest*				
Training	36	15.94 (2.38)	4.34	<0.001** (2.63 – 6.06)
Reading	20	11.60 (4.04)		
OSCE				
Training	36	64.69 (9.43)	18.44	<0.001** (12.86 – 24.03)
Reading	20	46.25 (10.94)		
*Wilcoxon test; ** Independent sample t-test				

The number of subjects in the training and reading groups at the beginning of the study was equal, i.e. 36 subjects; however, the post-test performed for participants of the reading group who were willing to follow MCQ and OSCE tests demonstrated that there were only 20 subjects. Results on the analysis of the subjects' knowledge and skills after receiving treatment showed that there was a significant difference of changes in average MCQ score ($p < 0.001$; 95% CI: 2.62-6.07); there was also a significant difference in average MCQ score after treatment ($p < 0.001$; 95% CI: 2.63-6.06); and there was a significant difference of OSCE score between the training group and the reading group ($p < 0.001$; 95% CI: 12.86-24.03).

Afterward, the magnitude of improvement on competency assessment was observed with a category of "good" and "poor" competency. Evaluation on the comparison of TA knowledge between the training and the reading group demonstrated that the training group had a greater probability to achieve TA analysis with a good score almost 2.5 fold

Table 3: Comparison of competencies on BTA knowledge and skills.

Variables	Good		Poor		*p*	RR (95% CI) (*crude*)
	n	%	n	%		
Posttest						
Training	32	88.89%	4	11.11%	0.026	2.54 (1.12-5.75)
Reading	7	35%	13	65%		
OSCE						
Training	29	80.55%	7	19.45%	0.001	4.37 (1.81-10.54)
Reading	3	15%	17	85%		

compared to those in the reading group (RR= 2.54; p<0.001; 95% CI: 1.12-5.75). In the OSCE test, the passing grade or good category after the calculation was determined as ≥63. In the OSCE test, the probability of subjects in the training group to achieve a good skill was almost 4 fold compared to those in the reading group (RR= 4.37; p= 0.001; 95% CI: 1.81-10.54). The results are shown in Table 3.

Table 4: The Correlation between some factors and the level of BTA knowledge.

Factors	Knowledge		*p*	HR (95% CI)
	Good (%)	Poor (%)		(*Adjusted*)
Intervention				
Training	32 (88.9)	4 (11.1)	0.026	2.54 (1.12-5.75)
Reading	7 (35)	13 (65)	Ref	
Gender				
Women	21 (61.7)	13 (38)	0.859	1.06 (0.55-2.03)
Men	18 (81.8)	4 (18.2)	Ref	
AT education				
Yes	37 (75.5)	12 (24.5)	0.759	0.76 (0.14-4.28)
No	2 (28.5)	5 (71.5)	Ref	
Age				
≥ 35 years	22 (68.8)	10 (31.2)	0.846	1.07 (0.53-2.17)
< 35 years	17 (70.8)	7 (29.2)	Ref	
Years of residential				
≥ 2 years	28 (73.7)	10 (26.3)	0.900	1.05 (0.48-2.29)
< 2 years	11 (61.1)	7 (38.9)	Ref	
Note: Adjustment was performed among variables included in multivariate analysis.				

Subsequently, the Cox Regression analysis was performed to identify various factors affecting the improvement of BTA knowledge (which had a good category) in both groups as well as to confirm whether the improvement was actually caused by different treatment for both groups. The results are shown in table 4. Our evaluation showed that the treatment of training was a significant factor that affected the improvement of

competency in BTA knowledge. The other factors including gender, age, educational background of TA and the terms of the study of psychiatry residency did not affect the students' ability to achieve the competency of BTA knowledge.

An analysis of various factors affecting the improvement of BTA skills using Cox Regression, which indicates that the treatment of training was a significant factor affecting the improvement of competency for BTA skills is shown in Table 5. Other factors, which were gender, age, educational background on TA and the term of the study did not affect the ability of students in achieving the competency of BTA skills.

Table 5: The correlation between some factors and the level of BTA competency.

Factors	Competency		*p*	*HR (95% CI)
	Good	Poor		*(Adjusted)*
Intervention				
Training	29 (80.6)	7 (19.4)	0.001	4.37 (1.81-10.54)
Reading	3 (15)	17 (85)	Ref	
Gender				
Women	18 (52.9)	16 (47.1)	0.443	0.68 (0.25-1.83)
Men	14 (63.6)	8 (36.4)	Ref	
AT education				
Yes	30 (61.2)	19 (38.8)	0.393	1.69 (0.51-5.62)
No	2 (28.6)	5(71.4)	Ref	
Age				
≥ 35 years	18 (56.3)	14 (43.7)	0.301	1.69 (0.63-4.56)
< 35 years	14 (58.3)	10 (41.7)	Ref	
Years of residential education				
≥ 2 years	24 (63.2)	14 (36.8)	0.786	0.88 (0.35-2.21)
< 2 years	8 (44.4)	10 (55.6)	Ref	

Note: Adjustment was performed among variables included in multivariate analysis.

*Hazard ratio

4. Discussion

4.1. Subject characteristics

There were significant differences of subject characteristics at the beginning of the study, which included the age group, gender, educational background on TA and the duration of study at the psychiatry residency. The initial test also found that there was different prior knowledge on basic TA. Therefore, some efforts were carried out to reach

the equality in TA knowledge by providing mentoring and discussion for both groups, which were aimed to arrange the subjects to have an equal basic TA knowledge.

The number of subjects on the post-test evaluation after receiving treatment was only 20 subjects, which indicates 62.5% participation rate of the minimal sample size calculation; i.e., 32 subjects. The causes of participants' absence were joining other courses of psychotherapy, having a night duty at the hospital and having other urgent activities. A study conducted by McQuaid revealed that the reason for training participants who did not complete the activities was due to heavy workload, less enthusiasm, poor life script, financial problems, and less support [11]. The drop-out rate, which was more than 10% had been an issue for the power of our study. The calculation of the power of the study (adjustment on post-drop-out evaluation) in the training group demonstrated that when the $Z\beta = 1.24$ then the power was 80-90%; while in the reading group when the $Z\beta = 0.18$ then the power = 50-60%. Moreover, for the average combination of the training and reading group, which had $Z\beta = 0.9$, then the power was 80-90%, which indicates that the overall power of our study was good.

4.2. Results of intervention

After the intervention was performed, there was a significant improvement in BTA knowledge and skills in the training group compared to the reading group. The training group had a greater probability of achieving competency of good BTA knowledge of almost 2.5 fold and achieving good BTA skills of almost 4 fold compared to subjects in the reading group. Therefore, the treatment using training model along with mentoring has been demonstrated to bring significantly improved skills for candidate psychiatrists to perform BTA to solve problems on parent-child relationship compared to the training model only by reading the BTA training module. In order to achieve optimal results, the subjects in TA training actually had to be introduced to TA materials and having mentorship about the material including the concept, technique and procedure and TA theory to explore the personal and interpersonal behavior, to have the opportunity to get training experience and being supervised in supported environment and therefore it can facilitate and enhance the competence of the subjects [12, 13].

The training of TA itself can develop the ability of subjects in the therapeutic process [14, 15]. In the educational sector, TA was found to be more effective compared to the traditional education method, which can develop autonomy, motivation and active role for the students [16]. The TA knowledge also offers advantages for students to discover and explore their potency and creativity [17]. The ego state evaluation is necessary to

assist the students to develop communicative skills with the patients [18] and to improve the friendly working atmosphere for the patients [19]. Medical education can utilize TA as one of the beneficial materials to improve awareness and therefore, it may provide development of changes to a better future [20].

4.3. Evaluating subjects skill

In our study, the evaluation of BTA skills on problems of parent-child relationship was performed in both treatment groups using OSCE. In the Miller Pyramid, the evaluation is on the ”show how” level. Evaluation using OSCE method for candidate psychiatrists is still rarely performed for psychotherapy in Indonesia; whereas, such evaluation is actually a valid evaluation tool since it can provide good control on the materials, which are aimed to be tested. However, there are many challenges in executing OSCE including the high cost, great resources and relatively long preparation time. As an alternative, a method called Direct Observation of Procedural Skills (DOPS) can be performed, which is on the ”does” level in Miller Pyramid [5]. By achieving basic TA competency in solving problems of parent-child relationship, it is expected that a psychiatrist can develop himself and increase his skills to advanced TA skills to manage other psychiatric problems.

4.4. Selecting subjects

Ideally, as an experimental study, a random allocation should be performed on subjects to determine individuals in treatment groups. However, in our study, it could only be performed at the level of the selected educational institution. Random allocation at the subject level was not possibly performed to avoid information bias considering that interpersonal communication could easily occur including exchanging the obtained materials among individuals of each treatment group. The selected subjects for the group treated with training were psychiatry residents who studied at the Department of Psychiatry in Faculty of Medicine, Universitas Sebelas Maret, Surakarta; while for the group receiving treatment of reading were psychiatry residents at the Department of Psychiatry in Faculty of Medicine, University of Indonesia.

4.5. The importance of transactional analysis knowledge and skills

According to McKimm, to develop a new program or to modify the existing program, there are certain stages that should be passed through, particularly the approval by an

educational or professional institution [21]. In this context, it includes the place where the program will be developed or applied consistently with the needs of the students according to the professional requirements. Our educational system of psychiatry in Indonesia now has not included evaluation or test on TA knowledge and skills as a standard for evaluating basic competence to the curriculum of psychiatry residency. Therefore, some subjects might assume that evaluation on TA skills may not be necessary. The assumption was based on the fact that TA has not been included as the basic competence for the graduates and has not brought any influences on their grades at the psychiatry study center. It may also affect the high drop-out rate found in the reading group; whereas TA psychotherapy is very useful as a treatment and it may improve self-capacity to build interaction with the community and the patients.

The benefit of TA has been demonstrated in a study conducted by Bossenmayer reporting that the participants of training had experienced reduced egostate as critical parents significantly [22]. TA knowledge may help the students discover and explore their self-potency to be more creative and particularly, it was recommended as an approach in the educational system for the students [17]. Training on TA may also help the students to increase individual quality, enhance the quality of their motivation to participate in the training program and to improve the quality of the relationship between the trainer and peer-groups [11, 14]. Moreover, TA can also be used as a theoretical and methodological guideline in establishing a diagnosis and understanding social interaction, which can be helpful for understanding communication problems found in social interaction [23].

Applied TA has been extensively studied and the studies have demonstrated the effectiveness of psychotherapy in the management of psychiatric disorders [24]. A meta-analysis conducted by Bledsoe has shown that group TA is more effective compared to interpersonal therapy for specific cases [25]. TA psychotherapy is effective to overcome anxiety and depression. A study of short-term (24 sessions) and long-term applied TA (52 sessions) in war veterans has demonstrated an effective result in reducing symptoms of post-traumatic stress disorders [26]. Another study involving TA experts from Italia and United Kingdom demonstrated that TA is effective for depression and depression with anxiety comorbidity [27]. TA psychotherapy is also cost-effective to be applied for patients with personality disorders [28]. The Psychodrama method and TA with school-age children in Rusia have also shown to be more effective in developing learner autonomy, motivation, and activity [16].

Moreover, TA is also effective to improve the negative parent-child relationship in the alcoholic family [29]. Group TA therapy is not only effective increasing self-esteem of

soldier prison guards in Iran, but it also can improve their behavior and interpersonal relationship [30]. A case report on applied TA for multiplex alopecia areata has demonstrated improved clinical condition in patients characterized by hair growth after 6 months and the bald patch disappeared after 2 years [31]. A case-series study conducted by McLeod reported that TA approach can improve the long-term medical condition [32].

5. Conclusion and Suggestion

The motivation of subjects to complete the activities in the training model without mentoring (the reading group) was lower than those who had received training and mentoring (the training group). Based on the post-drop-out calculation on the power of the study, the combined average results demonstrated that the result of calculation was relatively good with 80-90% power. Results on improved BTA knowledge and skills showed that there was 2 to 4 fold improvement in the training model with mentoring compared to those without mentoring. In conclusion, the training model along with mentoring is more effective to achieve competency on BTA knowledge and skills. Other factors including demographic characteristic and educational background on receiving knowledge about TA did not significantly affect the achievement of basic TA knowledge and skills in solving problems on the parent-child relationship. As an implication, the module training along with mentoring can be applied since the early phase of psychiatry residency and it can be developed continuously according to the policy of each educational center.

References

[1] Carracacio C, Wohlsthal SD, Englander R, Ferenz K and Martin C 2002 *Acad Med*. **77(5)** 361-7

[2] Amin Z and Khoo HE 2003 *Basics in medical education* (Singapore: World Scientific Publishing)

[3] Konsil Kedokteran Indonesia 2006 *Standar Kompetensi Dokter* (Jakarta: Konsil Kedokteran Indonesia)

[4] Amin Z, Chong YS and Khoo HE 2006 *Practical guide to medical student assessment* (Singapore: World Scientific Publishing)

[5] Epstein RM 2007 *N Engl J Med.* **356** 387-96

[6] Sadock B J and Sadock VA 2005 *Kaplan and Sadock's Comprehensive Textbook of Psychiatry* 8^{th} *ed* (USA: Lippincott Williams & Wilkins): 2241-5

[7] Sadock BJ and Sadock VA 2007 *Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry, 10th ed* (USA: Lippincott Williams & Wilkins) 871-4

[8] Schlozman S and Beresin E 2009 *Kaplan & Sadock's comprehensive textbook of psychiatry 9th ed*. (USA: Lippincott Williams & Wilkins): 3778-82

[9] Hukom AJ 1990 *Analisis transaksional* (Jakarta: Balai Penerbit FKUI) 2-164

[10] James M and Jongeward D 1973 *Born to win: Transactional analysis with Gestalt experiments* (London: Addison-Wesley Publishing): 16-262

[11] McQuaid C 2015 *International J. Transactional Analysis Research.***6(1)** 28-53

[12] Temple S 2002 Functional fluency for educational transactional analysis *Transactional Analysis Journal* **29**(3) 164-74

[13] Theron MJ 2008 A manual for basic relational skills training in Psychotherapy [Dissertation]. University of South Africa.

[14] Lawrence L 2007 *Am. J. Pharm. Educ.* **71(81)** 1-5

[15] Rijn VB, Wild C, Fowlie H, Sills C and van BS 2011 *International J. Transactional Analysis Research.* **2(1)** 16-24

[16] Sokovnina MS and Aleshin VN 2015 *International J. Transactional Analysis Research.* **6(1)** 15-27

[17] Yang M 2010 *International J. Transactional Analysis Research* **1(1)** 40-4

[18] Hur Y and Cho AR *Korean. J. Med. Educ.* **26(1)** 59-62

[19] Hunter BLW 2014 *J. Adv. Med. Educ.* **2(4)** 138-45

[20] Rajan M and Chacko T 2012 *Research.* **1(24)** 1-8

[21] McKimm J 2009 Curriculum and course design. *BJHM*. **70(12)**: 714-7

[22] Bossenmayer T 2011 *International J. Transactional Analysis Research*. **2(2)** 44-51

[23] Kovacevic I, Panic B, Vujosevic M and Kuzmanovic M. *Amfiteatru Economic.***15(33)** 211-23

[24] Ohlsson T 2010 *International J. Transactional Analysis Research.* **1(1)** 12-23

[25] Bledsoe SE 2006 *Research on Social Work Practice.***16(2)** 109-20

[26] Widdowson M 2016 The process and outcome of transactional analysis psychotherapy for the treatment of depression: an adjudicated case series [Dissertation]. University of Leicester.

[27] Widdowson M 2014 *International. J. Transactional. Analysis. Research.* 5: 2

[28] Horn EK, Verheul R, Thunnissen M, Delimon J, Soons M, Anke M, Meerman MA, Ziegler UM, Rossum BV, Stijnen T, Emmelkamp PMG and Busschbach JJV. 2014. Cost-effectiveness of short-term inpatient psychotherapy based on transactional analysis

in patients with personality disorders. Halsteren: Viersprong Institute for Studies on Personality Disorders (VISPD).

[29] Eiden RD, Leonard KE, Hoyle RH and Chavez F. A 2004 *Psychol. Addict. Behav.* **18(4)** 350-61

[30] Ebrahimisani E, Hashemian and Devkanha F 2012 *Iranian J. Military Medicine*. **14(3)** 219-28

[31] Yamakita T, Shimizua Y, Arima M, Ashihara M and Matsunaga K 2014 *Case. Rep. Dermatol.* **6** 248-52

[32] McLeod J 2012 *Counseling and Psychotherapy Research.* 1-12