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Correlation between Implementation of Inter Professional Education (IPE) and Evidence Based Practice (EBP) among Medical Student of Muhammadiyah Malang University

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Abstract—Inter professional teamwork in healthcare is needed to improve patient outcome treatments. It's introduced in medical education curriculum with Inter Professional Education (IPE) methods. Patient's health care needs Evidence Based Medicine (EBM) that's can be find in literature and reference such as scientific journal and it contains Evidence Based Practice (EBP). To know the correlation and rate of influence between implementation of Inter Professional Education (IPE) and Evidence Based Practice (EBP). Research method was observational with cross sectional study. Samples were taken by simple random sampling and get 277 respondents that divided into two groups: IPE and not IPE. Data were analyzed bivariate analysis independent sample t-tests and multivariate using linier regression. Result: Mean EBP score of IPE =138.13 and not IPE=133.1 CI 95% 5.03 (1.97 – 8.09). Result of independent sample t tests got sig=0.001 (p<0.05) it means there is meaningful score difference between groups IPE and not IPE. It test with linier regression and got equation Y= 133.102 + 5.036 (X) that means there was EBP score increase as much 5.036 in IPE and got R square 0.033 that means IPE has influence EBP score as much 3.3%. The highest mean score was future use in group IPE and not IPE. Linier regression test got R square 0.69 showed the fourth characteristics have influence rate as much 69% to EBP score. There was correlation and influence between implementation of Inter Professional Education (IPE) and Evidence Based Practice (EBP) at medical student of Muhammadiyah Malang University.

Keywords—IPE, EBP

I. INTRODUCTION

Patient's necessity as biopsychososiocultural human increasingly complex that required more than one discipline sciences related their health status [1]. Increase of population and shifting treatment from acute to chronic need attention of several different personal healthcare to help patient's treatment more effective [2]. The ability to work together in interprofessional teamwork did not emerge suddenly, but must be found and trained start from lecture so students have knowledge and experience on how to cooperate or work as a team with other health profession in good team before they work in actually health world. [3]. Patient's planning therapy or patient care is one component of Inter Professional Education (IPE) that correlate with health status and patient's prosperity needed valid and and update literature [4]. Scientific journal as literature and supporting learning references student presents information and knowledge that always update and according the medic development according evidence based.

Medical faculty at Muhammadiyah Malang University is medical school that implementing inter professional learning as Inter Professional Education (IPE) curricula. Medical student class of 2013 and 2014 is two preclinical student at medical faculty Muhammadiyah Malang University in 2017 that have pursued evidence based learning in research and method curricula. Therefore the aim of this study is to know influence implementing Inter Professional Education (IPE) to Evidence Based Practice (EBP) medical students at medical faculty Muhammadiyah Malang University.

The general aim of this study is to know influence implementing Inter Professional Education (IPE) to Evidence Based Practice (EBP) medical students at medical faculty Muhammadiyah Malang University. The specific aims of this study are to know medical student's mean Evidence Based Practice (EBP) score in IPE's group and not IPE's group; and second, to know the rate influence implementation of Inter Professional Education (IPE) to Evidence Based Practice (EBP) of medical student at Muhammadiyah Malang University. The benefit of this study is to give information about influence implementation of Inter Professional Education (IPE) and Evidence Based Practice (EBP) at medical student of Muhammadiyah Malang University.

II. METHODS

Analytic observational design used in this study with cross sectional method. Data collected at May 2017 in medical faculty of Muhammadiyah Malang University. Population was all medical students at medical faculty of Muhammadiyah Malang University. Samples were students of medical faculty Muhammadiyah Malang University that include inclusion criteria. Minimal sample got 258 samples with Slovin's formula. It was divided into two groups: IPE and not IPE. Samples were collected by simple random sampling technique.

Analysis data used comparative numeric independent sample t test to know the influence IPE implementation to Evidenced Based Practice (EBP). Meaningful statistic's test if p value less than 0.05. Rate of influence counted with regression linier test.

III. RESULT AND DISCUSSION

Participants in this study got 277 participants in details: 130 samples of IPE group (46.93%) and 147 samples of not IPE group (53.07%). Data result was personal EBP's score and group EBP's mean score. Participant's score got from summary 35 questions in the questionnaire.

TABLE I. EBP CHARACTERISTIC'S MEAN SCORE.

Group	Characteristic Questionnaire			
	Knowledge	***Attitude***	***Future Use***	***Application***
IPE	23.96	13.60	31.06	20.46
Not IPE	22.63	13.68	29.61	20.37
Mean difference	1.33	-(0.08)	1.45	0.09

Data result in form mean score used to know correlation between implementation of Inter Professional Education (IPE) and Evidence Based Practice (EBP). Data were analyzed normality test with Kolmogorov-Smirnov than analyzed bivariate analysis used independent sample t test. Normality test of EBP mean score got Sig=0.200 so it's a normal distribution data. Next independent sample t test to know there was difference mean score in groups or not.

TABLE II. IPE TO EBP INDEPENDENT SAMPLE T TEST

Group	Mean score	Standard deviation	Sig.	Mean difference (IC 95%)
IPE	138.13	12.94	0.001	5.03 (1.97 – 8.09)
Not IPE	13.1	12.88		

According independent sample t test that showed in Tab. II, four parameters got significance of 0.001 ($p<0.05$). These values showed that statistically, there were meaningful difference EBP's mean score between IPE group and not IPE group.

Mean score for the fourth characteristics of operation med questionnaire (knowledge, attitude, future use and application) were normality tested with Kolmogorov-Smirnov and got sig=0.000 for all characteristics so there was abnormal distribution. Therefore testing toward difference mean EBP score based on the characteristic used unpaired numeric comparative test more than two groups. It tested with Kruskal-Wallis.

TABLE III. KRUSKAL-WALLIS RESULT'S OF EBP CHARACTERISTICS

	Category	N	*Mean Rank*	Asymp. Sig
Score	Knowledge	277	616.94	0.000
	Attitude	277	184.12	
	Future Use	277	926.69	
	Application	277	490.25	
	Total	1108		

Kruskal-Wallis test got p=0.000 ($p<0.05$) so there was EBP mean score difference toward fourth characteristics. Result of highest mean rank was future use characteristic and lowest characteristic was attitude. To find out which paired characteristic that different, it continued Mann-Whitney test.

TABLE IV. RESULT OF MANN-WHITNEY TEST TOWARD EBP CHARACTERISTICS

	Knowledge	Attitude	Future use	Application
Knowledge		0.000	0.000	0.000
Attitude			0.000	0.000
Future use				0.000
Application				

Result of Mann-Whitney test got p=0.000 ($p<0.05$) so it can be concluded there was EBP difference significantly between that four characteristic.

Multivariate analysis used simple linier regression to find out influence rate IPE toward EBP.

TABLE V. RESULT OF LINIER REGRESSION IPE TOWARD EBP'S SCORE

Independent Variables	B	t	Sig	Adj R^2
Constant	133.102			
IPE group	5.036	3.239	0.001	0.033

Based on Tab. V, so the equation:

$$Y = 133.102 + 5.036 (X) \quad (1)$$

Description: Y: EBP score, X: IPE group

Based on the equation there was EBP score increase as much 5.036 to IPE group. Result of linier regression got Sig=0.001 which less than 0.05 so there was significantly variable influence. The value of R square as much 0.033, it means Inter Professional Education (IPE) has influence Evidence Based Practice (EBP) as much 3.3%.

Attitude characteristic has the lowest score therefore it become comparison in this linier regression of characteristic's score toward EBP score.

TABLE VI. RESULT OF LINIER REGRESSION EBP CHARACTERISTIC'S SCORE

		B	t	Asym. Sig	Adj R^2
1	(*Constant*)	13.650	56.736	0.000	0.690
	Knowledge	9.606	28.235	0.000	
	Future use	16.643	48.915	0.000	
	Application	6.765	19.884	0.000	

Based on Tab. VI, the regression equation below:

$$Y = 13.650 + 9.606 * \text{knowledge} + 16.643 * \text{future use} + 6.765 * \text{application} \quad (2)$$

Description: Y = EBP score

Result of linier regression got significance p=0.000 ($p<0.05$) for all dummy variable and R square 0.690 (69%) it means knowledge, attitude, future use and application characteristics has influence toward EBP score and rate influence as much 69% while the rest (31%) were influenced by other variables that were not pursuing. The most influenced characteristic was future use because differences toward attitude was the most large (B=16.643) compared to differences knowledge and application to attitude.

The data result was EBP score tested statistically used independent sample t test got significance p=0.001 ($p<0.05$) that showed there was meaningful difference EBP mean score between both of group.

This study showed that IPE group has EBP mean score higher than not IPE group. IPE group got learning about evidence based and practicing and implimenting Evidence Based Practice (EBP) in discussion peer group in Inter Professional Education (IPE) curriculum. Participants in IPE group applied searching evidence based medicine that appropriate patient's case in discussion scenario. Therefore IPE's group respondents have knowledge and application better than not IPE's group. Inter Professional Education learning raised interaction between different healthcare professionals. It increased student's clinical analysis ability.

It was appropriate with studies medical students at UNAM Mexico in different class year (student in the 4th year, 5th year, 6th year) has different EBP score whereas the 4th year students got evidence based learning has higher score in knowledge, attitude and critical appraisal toward Evidence Based Medicine (EBM) [5], while they have studied biostatistics and research method. It was in line with this study that showed knowledge in IPE group higher than not IPE group.

Implementation of Inter Professional Education by student of class 2013 gave to them an experience and more motivation about team work in patient service (patient in discussion cases). It was appropriate a review's that showed four of six studies indicated that IPE produced positive outcomes in the following areas: patient satisfaction and collaborative team behavior [2].

The researcher suspected that implementation of Inter Professional Education with problem based learning method raised medical student supporting and motivation roles in clinical decision making which make impact in their learning and discussion materials. The decision making based on their finding evidence based medicine. It was appropriate with statement that applying Problem Base Learning (PBL) in learning EBM was effective educational method in terms of improving students' skills, knowledge and attitude toward EBM [6]. Incorporating hands on experience, PBLs will become an impetus for developing EBM skills and critical appraisal of research evidence alongside routine clinical practice.

Multivariate analysis in this study used linier regression test to know rate of influence IPE variable toward EBP. This test got value of R square as much 0.33 that means implementation of Inter Professional Education influenced Evidence Based Practice as much 3.3%. It was because of application inter profession education learning still covered patient's cases in scenario while inter professional education can be really applied in collaborative healthcare in professional work with the real patients. Two of some variable that influenced IPE toward EBP (96.7%) were experience and motivation. Experience met real patient become motivation practiced searching evidence based medicine to better patient's service. There was study expressed IPE curriculum cannot separated from inter professional collaboration. Inter Professional Education improved professional healthcare's competences. This competences include knowledge, skill, attitude and behavior in inter professional. It will give priority of patient treatment care for professional healthcare in teamwork [7].

Analysis toward EBP characteristics (knowledge, attitude, future use and application) with linier regression test got EBP characteristic has influence EBP score as much 69% while 31% were influenced by others variable which not include in this study. Two of those variables were behavior and motivation.

Future use characteristic has the most influence because difference score future use toward attitude characteristic higher than difference score knowledge and application toward attitude. The researcher has estimate because of participant's perception toward evidence based medicine was good so they have assumption that evidence based medicine will useful in practice patient healthcare service in real professional work and real clinical environment.

This study has limitation because there were not data about EBP score in nurse and pharmacy student which implementing IPE in the same group of our participant (medical student at Muhammadiyah Malang University).

IV. CONCLUSION

The conclusion of this study were reporting: (1) implementation of Inter Professional Education (IPE) influence Evidence Based Practice (EBP) medical student at Muhammadiyah Malang University by increased EBP score in IPE group, (2) Mean EBP score in IPE group= 138.13 and mean EBP score in not IPE group= 133.1 therefore IPE group has better score, (3) Inter Professional Education (IPE) has positive influence as much 3.3% toward Evidence Based Practice (EBP) score at medical students Muhammadiyah Malang University.

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