RedFame

Journal of Education and Training Studies
Vol. 5, No. 7; July 2017
ISSN 2324-805X E-ISSN 2324-8068
Published by Redfame Publishing
URL: http://jets.redfame.com

"Empathize with me, Doctor!" Medical Undergraduates Training Project: Development, Application, Six-months Follow-up

Vasileios N Kiosses[1], Athina Tatsioni[1], Ioannis DK Dimoliatis[1], Thomas Hyphantis[1]

[1]Medical Faculty, School of Health Sciences, University of Ioannina, Greece.

Correspondence: Vasileios Kiosses, Medical Education Unit, Department of Hygiene & Epidemiology, Medical Faculty, School of Health Sciences, University of Ioannina, 45110 Ioannina, Greece.

Received: May 12, 2017 Accepted: June 1, 2017 Online Published: June 2, 2017

doi:10.11114/jets.v5i7.2418 URL: https://doi.org/10.11114/jets.v5i7.2418

Abstract

The aim of the study was to assess the effectiveness of specially designed, empathy training for medical undergraduates, based on the principles of Person-Centered Approach.

Within the context of the humanistic person-centered patient care, the experiential, 60-hour "Empathize with me, Doctor!" training program contains theory, personal development and skills development. Role plays, experiential exercises, self-awareness exercises, active listening practice and conduction of a person-centered interview constituted the training.

Forty-two medical undergraduates (66% females; 29% fourth year of study, 40% fifth, 31% sixth) from the University of Ioannina in Greece applied and all of them completed the empathy training. Forty-five medical students comprised a similar according to age and year of studies control group.

The Jefferson Scale of Physician Empathy (JSPE) was used to assess the empathic performance, and Cohen's d to assess the practical importance of any statistical difference.

The JSPE mean score (and standard deviation) before, after and six months follow-up was 109.3(12.7), 121.1(9.0), 121.1(9.5), respectively. The before–after and before–follow-up difference was highly significant (CI95%, $p<0.001$ in both cases), and of great practical importance ($d=1.072$, $d=1.052$, respectively), while no decrease was observed six-months later (CI 95%, $p=0.999$, $d<0.001$). Control group reached a JSPE 108.7(10.5), similar to intervention group before training (CI95%, $p=0.832$), and highly different and important compared to after (CI 95%$p<0.001$; $d=1.268$) and follow-up (CI 95%, $p<0.001$; $d=1.238$) intervention scores.

The "Empathize with me, Doctor!" improved significantly and importantly medical undergraduates' empathic performance, which was maintained intact for at least six months.

Keywords: empathy, medical education, training, medical students

1 Introduction

In modern times, medicine has become over-specialized, in terms of organs and diseases, against patients', their families' and society's needs and concerns. This has led to a lack of attention on other aspects of the disease beyond symptoms. A re-conceptualization of the core mission of medicine became obvious. A disease-centered medicine has been replaced by the person-centered medicine (PCM), introduced by Balint (1969), who emphasized on the physicians' understanding. PCM seeks to promote health as a state of physical, mental, spiritual and social well-being and not only to decrease pain (World Health Organization [WHO], 1946; Sanedal, 2012). It has a significant influence from humanism, where a personalized understanding of the illness is the main context, containing all the psychological and emotional elements of the disease. According to the Institute of Medicine (2001), person-centered care is "*care that is respectful and responsive to individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions*" (p. 49). Person-centered medicine's concept in primary care is oriented at "*people and populations, rather than pre-defined diseases or interventions as stand-alone issues*" (Van Wheel, 2010, p. 337).

Empathy is a crucial component to promote person-centered care. Clinical empathy includes understanding patient's situation, perspective and feelings as well as their attached meanings; and communicating understanding and checking its accuracy (Platt, 1992). It is linked with fewer burnout effects of the healthcare professionals and more accurate

diagnoses (Anfossi & Numico, 2004), creates a safe, pleasant and comfortable environment where the patient is facilitated to speak openly (Suchman, Markaki, Bechman & Frankel, 1997; Fink, Sorensen, Engberg, Holm & Munk-Jorgensen, 1999) and seems to decrease patients' and doctors' stress (Halpern, 2003). Medical empathy is not that different from Carl Rogers' (1951) definition of empathy described in his Person-Centered Approach (PCA): empathy is not a technique but a way of being; empathy is the ability to deeper understand other's frame of reference and involves being able to put yourself in the other's position. In counseling, PCA found wide application in various domains such as psychotherapy (client-centered therapy), education (student-centered learning), organizations, and other group settings.

The term "medical empathy" vindicates significant part in the medical curricula. In the "Learning Outcomes/ Competences for Undergraduate Medical Education in Europe: The Tuning Project (Medicine)", developed by the MEDINE Thematic Network of about 100 European medical schools, empathy is highlighted as a main professional attribute, incorporated in the outcomes for medical professionalism (Cumming & Ross, 2008). Training programs have been developed in order to educate healthcare professionals in empathy through communication skills trainings with a variety in teaching methods, duration and curriculum (McKinstry, Aschcroff, Car, Freeman & Sheikh, 2006; Moore, Wilkinson & Mercado, 2004). A systematic review of the literature revealed that educational programs could enhance empathic performance among medical students with a statistical significant increase (Bat- Rawden, Chilsom, Anton & Flickinger, 2013) but with a relatively low mean effect size (0.23), while the heterogeneity in the design of the studies included was an inhibiting factor in extracting safe conclusions. The efficacy of communication skills training courses in oncology was assessed by another systematic review which revealed a moderate effect of the training on communication performance (Barth & Lannen, 2011). In the current research, we combined the framework of the Person-Centered Approach (PCA) within medical education, in order to develop and design experiential empathy training for medical undergraduates. The *"Empathize with me, Doctor!"* project (EwMD) was developed and applied. Is EwMD successfully applied within medical school to enhance medical undergraduates' empathic performance? Does the effect of a PCA-based empathy training maintain?

2 Method

2.1 Participants

Medical undergraduates at the University of Ioannina, Ioannina, Greece, were voluntarily participated in the *"Empathize with me, Doctor!"* project for training in empathy. None of them had ever participated in any empathy training before. The "Empathize with me, Doctor!" training was offered during the elective course "Empathy during doctor-patient relationship" in the Medical School, University of Ioannina, Ioannina, Greece. Trainees had to participate at least in the 90% of the total training (52 of the 60 hours) to be qualified and to be a part of the study. Only students in the 4th year of their studies and beyond could apply, since at this year they visit university hospital clinics and hence they interact with patients.

In order to avoid contamination from the intervention group, a control group of undergraduate volunteers of the same year of study from two different medical schools (Aristotle University of Thessaloniki, Thessaloniki, Greece; Democritus University of Thrace, Alexandroupolis, Greece) was asked to answer the same questionnaire. They received no empathy training at all by us or anybody else.

The study was conducted as a part of the elective course "Empathy during doctor-patient relationship" approved by the Studies' Committee, from the Medical School, University of Ioannina, Ioannina, hence an ethical approval was not required.

2.2 The "Empathize with me, Doctor!" (EwMD) Training Project: Development and Application

The EwMD project was a small group experiential training, lasted 60 hours distributed in three 20-hour workshops four weeks apart from each other, including theory, personal development, and skills development. Due to the experiential nature of the training, theory and practice were interwoven and not separated during the training process.

The theoretical part of the training included introduction to communication skills (non-verbal communication, verbal communication, therapeutic guidelines, appropriate use of touch), introduction to the Person-Centered Approach combined with the basic principles of the Person Centered medicine, and medical history taking in a person-centered way, emphasizing on how to ask for symptoms and how to use open and close questions. Furthermore the clarification of what empathy is in terms of counseling constituted a large part of the training. Also, medical undergraduates were introduced to theory of bereavement in a medical context, and how to break bad news empathetically.

Since it is very important, when someone is trying to be empathic, to be congruent and aware of his/her own needs and boundaries during encounters with patients, a personal development section, including experiential exercises and encounter groups, was added. Creative arts were used as tools to facilitate medical undergraduates to introspect and hear

their inner needs. Encounter groups were used to emphasize verbal interaction.

The skills development section contained active listening exercises, role plays, non-verbal communication games, case studies, conduction of a person-centered interview and practical implications of empathy.

This training had a clear aim, to give the chance to the members of the group to be empathic in relation with the other members and then try to be empathic during encounters with patients. For this interaction an experiential approach to learning was necessary. Trainees were not introduced to specific techniques. This would be in opposition to the theory of the PCA. Trainees were introduced on how to be congruent, genuine and respectful during their encounters with the patients.

Two instructors, trained in Person-Centered Approach, facilitated the training. Trainers tried to create a space of acceptance, genuineness and empathy without judgment, in order to help trainees to try new ways of interacting and relating.

2.3 Assessment

In order to measure differences in students' empathic performance before and after training, we used the Jefferson Scale of Physician Empathy (JSPE), a validated and reliable (Cronbach alpha = 0.78) questionnaire, comprising 20 items such as "*I try to imagine myself in my patients' shoes when providing care to them"*, "*Empathy is a therapeutic skill without which my success as a health care provider would be limited"* (Hojat et al., 2001). The questionnaire can be answered in a 1-to-7 point Likert scale from strongly disagree to strongly agree. Scores are ranged from 20 (worst) to 140 (best), with higher scores indicating better empathy performance. We used the translated in Greek and validated version (Ouzouni & Nakakis, 2012).

We need to highlight the fact that the midpoint of the Likert scale is neutral (neither agree- nor disagree), as developed by the original JSPE. In order to avoid the risk of a single line of midpoint responses, we will exclude from the results all the questionnaires including more than ¾ of midpoint answers.

All trainees had a seven-day deadline before the first and after the last day of the training, to complete anonymously the JSPE and assess their empathy competence. Six months after the completion of the training, there was a follow up measurement. In order to compare results in an individual basis (paired tests) without violating anonymity, each trainee created a personal code known exclusively to them, used in every completion of the questionnaire.

JSPE mean score and standard deviation (*SD*) were calculated for the control and before, after, and six months later for the intervention group. One sample paired t-test was used to assess the difference within group, and two samples unpaired t-test to assess difference between intervention and control groups. Effect size was calculated to judge the practical importance of the findings, using *Cohen's d*

$$d = \frac{2t}{\sqrt{(df)}}, \quad (1)$$

where t = t-test and df = degrees of freedom. *Cohen's d* is interpreted as a small effect size if $d<0.2$, medium effect size if $0.2 \leq d \leq 0.5$, and large effect size if $d>0.5$ (Cohen, 1988). The SPSS (v.18) software was used.

3. Results

3.1 Participants

During three consecutive semesters, spring 2014, winter 2014 and spring 2015, forty-two medical undergraduates successfully completed the full (no absence) empathy training as designed.

Table 1. Participants in the study. Control and intervention groups and their comparison according to year of study, gender, and age

	Control group	**Intervention group**	**Test *p*-value**
TOTAL	45	42	
SEMESTER			
Spring 2014		12	
Winter 2014		14	
Spring 2015	45	16	
YEAR OF STUDY			
4th	10	12	X^2= 1.690
5th	15	17	p= 0.430
6th +	20	13	
GENDER			
Male	15	15	X^2= 0.024
Female	30	28	p = 0.878
AGE			
Range (min – max)	21 – 25	21 – 28	t=3.972
Mean (SD)	22.2 (0.97)	23.3 (1.49)	p = 0.000 149

During the spring 2015 semester, 45 undergraduates participated in the control group, with no difference compared to intervention group according to gender (p=0.878) and year of study (p=0.43), while the mean age of the control group was one year smaller than that of the intervention group, 22.2 versus 23.3 (p<0.001).

3.2 Comparisons within and between Groups

All forty-two medical undergraduates of the intervention group completed the JSPE before and after the training and six months later. Furthermore, all answers were included in the statistical analysis. Only one participant completed 7/20 midpoint answers and the rest of them had fewer midpoint answers during all assessments. Hence, none of the participants met the exclusion criteria. The mean score (and standard deviation) before, after, and six months later was 109.3 (12.7), 121.1 (9.0), and 121.1 (9.5) respectively. The before and after difference was highly significant (p<0.001), as well as the before and six months later (p<0.001), with no any mean score decrease between after and six-month follow-up (p=0.999). The effect size was very large for the before–after and before–follow-up assessment (Cohen's d 1.072 and 1.052, respectively), while extremely low effect size between after and follow-up was observed (d<0.01).

Table 2. Comparisons between control and intervention groups and between before, after and follow-up within the intervention group; two tailed t-test (t)[1] with CI 95% and corresponding exact p-value (p), and Cohen's d

		Before	After	Follow-up
	t	0.258	5.882	5.761
Control	*p*	0.797	$8x10^{-7}$	$13x10^{-6}$
	d	0.051	1.268	1.238
	t		6.521	6.730
Before	*p*		$1x10^{-7}$	$2x10^{-8}$
	d		1.072	1.052
	t			0.000
After	*p*			0.999
	d			0.000

The mean score for the control group was 108.7 (10.5). There was no difference with the intervention group before training (p=0.797), but very high difference after (p<0.001) and six-month follow-up (p<0.001). Accordingly, there was very low effect size for the control group versus the intervention group before the training (Cohen's d=0.051), while large effect size observed for the controls versus after (d=1.268) and follow-up (d=1.238).

4. Discussion

Forty two medical undergraduates completed successfully the *Empathize with me, Doctor!* (EwMD) training, a specially designed program to train students in empathy and sensitize them to promote person-centered care. The assessment was held through the 20-item JSPE and the before-after highly significant and practically very important difference remained unchanged 6-months later.

Most training programs include empathy as a part of communication skills training. The difference between communication skills training and the EwMD project is that the second aims specifically on empathy and how it can be promoted. Communication skills were only an introductory part of the EwMD training. EwMD effect size was over five times the effect size of an updated systematic review and meta-analysis of interventions promoting empathy to medical students (Batt- Rawden, Chilsom, Anton & Flickinger, 2013) including 18 articles of which only 1 was empathy-focused (1.268/0.23 = 5.5). The overall mean effect size of the trainings included was 0.23, low, considering weak practical importance of the interventions In addition the effect size of the only empathy-focused intervention was d=0.45, which indicates moderate practical importance. To avoid diminution of the empathy during time, it is important that medical undergraduates and physicians continue to practice. According to a systematic review of the literature (Neumann et al., 2011) empathy declines during medical school years. In contrast, the impact of the EwMD project remained unchanged six months after the completion of the training, both statistically and practically. The strong statistically significant impact of this EwMD project may be correlated with the experiential nature of the training, containing role plays, feedback and small group discussions which are the best strategies within such intervention programs (Berkhoff, van Rijssen, Schellart, Anema & van der Beek, 2010). The EwMD project is learner-centered including practicing skills, which is shown to be the most effective teaching approach in improving communication skills (Berkhoff, van Rijssen, Schellart, Anema & van der Beek, 2010).

Other medical and health care schools have included educational interventions to maintain and enhance empathy in undergraduate students or health care professionals (Bayne, 2011; Bunn & Terpstra, 2009; Dikici, Yaris & Cubukcu, 2009; Dow, Leong, Anderson & Wenzel, 2007; Fine & Therrien, 1977; Ghetti, Chang & Gosman, 2009; Kushner, Zeiss,

[1]Unpaired *t*-tests with 85 degrees of freedom in all comparisons with the control group; paired *t*-tests with 41 degrees of freedom otherwise.

Feinglass & Yelen, 2014; Neumann et al., 2009). However, to the best of our knowledge, only the EwMD project included a personal development section, and perhaps this explains the strong effect size. Through experiential exercises, the training facilitated self-awareness in relation with a whole new perspective in relating and hence the experiential nature of the training became stronger. Another component which makes the EwMD project powerful is the person-centeredness of the training and the fact that the training embraces the three core conditions of the Person-Centered Approach (empathy, unconditional positive regard, and congruence). Through the EwMD training the physician facilitates the patient to express and experience the emotional context that coexists with the suffering. The difference between the EwMD and other empathy trainings is that, in the EwMD, empathy is not standing alone. In the context of the EwMD, empathy, unconditional positive regard, and congruence are inseparable and there is an interrelationship between them. As stated by Wilkins (2000) within the Person-Centered Approach "*empathy and congruence provide a framework in which unconditional positive regard is believable, but it is also because it is impossible to be truly accepting of another without being open to one's own inner experience and being in a personal state of harmony*." Even though specific interventions were developed in order to enhance physicians' and medical students' empathic performance, the term empathy is lacking a widely accepted definition. In the current study, authors adopt the PCA and embrace the definition of empathy within this frame.

It is worth noting that the high scores during the first measurement, before any training, impressed the authors of this paper. Between controls and before measurement versus after and follow up measurement there is a difference of 11.9 Jefferson units (after = follow-up = 121.1 minus before = 109.3) in the JSPE scale from 20 to 140. After controlling for the 1-to-L bias (Dimoliatis & Gelastopulu, 2013), these scores become: control = 73.9%, before = 74.4%, after = follow up = 84.25% in the standard 0-100 scale. Accordingly, the 11.9 JSPE units, become 84.25% minus 74.4% = 9.85%, approximately 10% in the standard 0-100 scale. The impressive thing was not this "only 10%" empathy improvement, but the without any empathy training so high JSPE score 74.4%, three over four. Due to no previous empathy training in the school and students' ignorance of what empathy actually is and how it can be promoted, lower scores in the before self-assessment were expected. Authors suppose that this high rating before the training occurred either because of a possible weakness of the JSPE to measure the exact empathy level or because of the possible inability of the trainees to assess themselves accurately (or both). Authors are currently working on a method to clarify this problem. Furthermore, although trainees scored high in the before measurement, they were hesitating to rate themselves much higher in the after measurement. During the after (and follow up) scoring, perhaps undergraduates were more aware about the difficulty in performing empathetically; thus, possibly their scores were more accurate, if not hesitant. It is also noteworthy that most of the trainees who completed the EwMD were female. The current literature interprets this finding stating that women tend to develop more caregiving attitudes (Hojat et al., 2002) and research has shown that female physicians contribute to a better empathic relationship with their patients (Eisenberg & Lennon, 1983). However, more women also comprised our control group as well (no difference, p=0.878). Thus, the EwMD effectiveness is not related to gender.

Small group teaching is EwMD's prerequisite, in order for the members to interact sufficiently. "*The assumption in these groups is similar to that of person-centered therapy: the individual will grow in a positive way by resisting social restrictions and by interacting with others honestly and openly*" (Yalom, 2005, p. 608). One could argue that the relatively small sample would render a limitation of the study if we take into consideration that potentially participants were sensitized in enhancing their interaction with their patients, and this would be a significant reason of their high JSPE scores before training and empathic improvement after the training. However, the control group was equally sensitized (no difference with the intervention group before any training) and, even if participants were more sensitized comparing to non-participants, the EwMD training succeeded to increase significantly and importantly their empathy. Furthermore, the intervention group was in average one year older than the control group (23.3 vs. 22.2), due to that some older students participated in the first group. Though the difference is statistically significant, we do not think it is that important, especially since there was no difference according to year of study and gender. Although this point needs further clarification, we continue believing that our conclusions would remain the same. Furthermore, the fact that the control groups is drawn from different medical schools, there is no way to know how similar or not the students' experiences are in the various places, although we need to highlight that medical curricula among are not differ significantly.

Additionally, the JSPE measures self-perceptions of medical undergraduates about their empathic performance, not the performance itself. Possibly a measurement tool that assesses objectively the empathic performance would be more accurate. Using the only available tool for all measurements (controls, before, after, 6-months), is a good indicate that EwMD is an effective training procedure, increasing real empathy performance, not simply trainee perceptions.

Medical students and health care professionals in general would benefit by long term support in empathy and relevant skills. This could be part of their clinical supervision as understood by counseling. It would be of interest for future

research to assess the effect of a long term support and supervision. The effect of the EwMD remained immutable six months after the completion of the training. We believe that this is a good indication that EwMD's impact will remain high 12 or 24 months later; this is a future project. It would also be interesting for future search to overcome the limitation of the lack of participants' randomization.

5. Conclusion

The *"Empathize with me, Doctor!"* project significantly, statistically and especially practically (clinically), enhanced medical undergraduates' empathic performance, which six months later remained unchanged, according to trainees' perceptions. The combination of the experiential learning with the personal development section, during the training, creates a forceful empathic enhancement. The effects of the training are of highly practical importance as well. Empathy is cornerstone in the PCA and EwMD, based on PCA approach, embraces the three core conditions of the PCA (empathy, unconditional positive regard, and congruence) and reveals that the application of PCA in the medical context is linked with strong results. The lack of randomization in both intervention and control group would render a limitation of the study, as well as the fact that the effect of the EwMD training was assessed only through self-assessed questionnaire and authors did not assess the impact on patients' outcomes. The EwMD project is, to our knowledge, the first training containing trainees' personal development section and meets the criteria of the Person-Centered Care.

Acknowledgements

We thank Dr Evangelia Ntzani, Assistant Professor in the University of Ioannina, Department of Hygiene and Epidemiology, Medical School for discussing on the statistical analyses. We also thank Mrs Konstantina Symeonidou and Mrs Carolina Alexiou, Counseling Unit, University of Strathclyde on co-facilitating the training program.

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Jefferson Scale Physician Empathy (JSPE) score for each student of the both groups before, after, and in 6 months follow-up. Score means and standard deviations (last line)[2].

Control group		Intervention group			
Student	JSPE score	Student	JSPE score		
			Before	After	Follow-up
c1	87	**i1**	77	121	122
c2	89	**i2**	87	95	91
c3	92	**i3**	91	106	106
c4	94	**i4**	91	109	115
c5	97	**i5**	93	122	121
c6	98	**i6**	93	123	124
c7	98	**i7**	96	120	118
c8	99	**i8**	96	125	124
c9	99	**i9**	99	102	109
c10	100	**i10**	100	115	113
c11	101	**i11**	100	132	111
c12	102	**i12**	101	112	115
c13	103	**i13**	101	115	118
c14	104	**i14**	102	107	109
c15	104	**i15**	103	128	116
c16	104	**i16**	104	124	130
c17	106	**i17**	106	110	109
c18	107	**i18**	106	121	115
c19	107	**i19**	107	117	117
c20	107	**i20**	107	125	122
c21	108	**i21**	109	112	121
c22	108	**i22**	111	119	114
c23	108	**i23**	114	116	126
c24	108	**i24**	114	120	131
c25	108	**i25**	115	128	126
c26	110	**i26**	115	132	127
c27	110	**i27**	117	118	117
c28	111	**i28**	117	123	121
c29	111	**i29**	118	127	122
c30	113	**i30**	119	120	117
c31	113	**i31**	119	122	121
c32	114	**i32**	119	132	138
c33	114	**i33**	120	129	121
c34	114	**i34**	122	125	134
c35	114	**i35**	123	124	134
c36	115	**i36**	124	125	123
c37	116	**i37**	124	125	125
c38	117	**i38**	125	130	131
c39	118	**i39**	125	131	128
c40	120	**i40**	125	139	138
c41	122	**i41**	128	131	139
c42	123	**i42**	129	129	127
c43	130				
c44	133				
c45	135				
Mean	108.7	**Mean**	109.3	121.1	121.1
(*SD*)	(10.5)	**(*SD*)**	(12.7)	(9.0)	(9.5)

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[2]Jefferson Scale Physician Empathy (JSPE) score for each student of the control group (c1 to c45, sorted from smallest to largest) and for each student of the intervention group before, after, and in 6 months follow-up (i1 to i42, sorted from smallest to largest by before, then by after, then by follow-up). Score means and standard deviations (last line).