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Clinical communication course and other factors affecting patient-centered attitudes among medical students

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Abstract: **Objectives:** Patient-centered care (PCC) is associated with better doctor-patient relationships, resulting in a decrease in symptoms, hospitalizations and health costs. However, studies analyzing factors influencing patient-centered attitudes show ambiguous results. The purpose was to assess the impact of the Clinical Communication Course (CCC) in Jagiellonian University, Cracow and other factors on Patient-Centered Attitudes (PCA) and Attitude toward Clinical Skills Learning (CSLA). **Methods:** We retrospectively compared Polish-speakers (CCC+, n = 160), English-speakers (CCCen+, n = 55) after the CCC and upperclassmen Polish-speakers without it (CCC-, n = 122). Validated questionnaires to measure PCA (Leeds Attitude Toward Concordance II and Patient-Practitioner Orientation Scale (PPOS)) and for CSLA (Communication Skills Attitude Scale with negative subscale (CSAS-N)) were used. The higher the scores, the more PCA, and negative CSLA respectively. Students completed questionnaires and answered questions regarding age, sex, motivation to study (coded as humanitarian — MotHUM, financial — MotFIN, combination — MotMIX) and considered specialization — coded as with more human contact (family medicine, psychiatry, pediatrics — SpecHUM) and others (SpecNHUM). Statistics were prepared in R.

Results: CCC+ scored higher in PPOS (2.91 vs. 2.74; p = 0.003) than CCC- and higher in CSAS-N than CCCen+ (31.22 vs. 28.32; p = 0.004). In CCC+ SpecHUM scored lower than SpecNHUM in PPOS (2.65

vs. 2.94, $p = 0.012$). MotFIN scored higher than MotMIX in PPOS (3.01 vs. 2.7, $p = 0.036$). Correlations were statistically significant.

C o n c l u s i o n: CCC improved PCA in CCC+. They showed more negative CSLA than CCCGen+. Among CCC+, surprisingly, SpecNHUM presented more PCA than SpecHUM as well as MotFIN compared to MotMIX.

Key words: patient-centeredness, patient-centered care, clinical communication, clinical communication course, communication skills training, communication skills.

Introduction

Since being introduced in 1969 by Balint [1], the Patient-Centered Care (PCC) concept has evolved throughout the years, with no clear consensus about its definition. McWhinney tried to conclude the debate by defining the patient-centeredness (PC) approach as one where the “physician tries to enter the patient’s world, to see the illness through the patient’s eyes” [2]. Studies show that PCC is preferred by patients [3] and, among other factors, improves confidence in physicians [4], enhances positive lifestyle changes and lowers symptoms, the need for diagnostic tests, the number of hospitalizations, and costs of treatment [5, 6].

According to the socio-psychological ASE [7, 8] model (see Fig. 1) human behaviors are driven by intentions which are influenced by skills and external barriers. Intentions are based on attitudes, self-efficiency, and social background. Teaching communication skills should, therefore, influence behavior by improving students’ skills as well as by shaping the attitudes during the course. It is only natural that medical universities assume responsibility for teaching students in the spirit of PC by implementing Communication Skills Training (CST) into the curriculum.

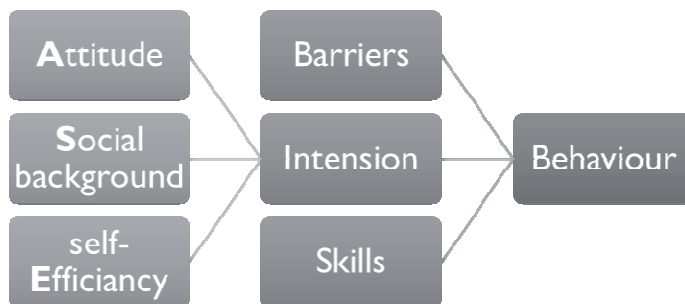


Fig. 1. ASE model. Based on de Vries *et al.* [8].

As demonstrated by several studies, courses based on CST resulted in improvement in students’ attitudes after the course was finished [9], while students who were

deprived of the opportunity to attend any kind of CST, naturally tended to lose PC [10]. Bombeke showed very interesting results that suggested that in longer perspectives the decline can be observed despite exposing students to CST and it could be even more significant than in students who have not attended any CST [11]. There is a lack of data concerning the influence of such course in Poland and Central-Eastern Europe, either right after completing the course or over a longer period of time.

Our objectives were to discuss the aforementioned results and to answer the question — does course based on CST influence PC in medical students in Jagiellonian University Medical College (JUMC) and is it changing attitudes toward teaching communication skills? To determine this we have designed a retrospective comparative cohort study to measure patient-centered attitudes and attitudes towards teaching communication skills among JUMC's medical students.

Materials and Methods

In 2013, a mandatory Clinical Communication Course (CCC) was implemented into the curriculum of JUMC by the Department of Medical Education (DME). Prior to this, there were only elements of clinical communication presented in psychology classes. The course was designed based on the Calgary-Cambridge model [12] and it was divided into 3 parts for three years of education (from the 3rd to 5th year of a 6-year medical program, consisting of 20 hours every year). The first year covered basic communication skills, which were practiced by having students role-play scenes with each other. During the second part of CCC students encountered difficult communication issues (such as patients' expectations, patients' aggression, sexual health issues, breaking bad news); role-play was continued but with the use of simulated patients. Thus far Clinical Communication Course (CCC) was in the form of Communication Skills Training (CST). Finally, in their fifth year of study and the last year with CCC, use of clinical communication was implemented into high-fidelity patient simulation classes. Assessment was based on attendance criteria (one absence was permitted in each part) and students additionally had to prepare essays on personal experiences in difficult communication situations in clinical settings following the first part of CCC, and record a video of themselves as a doctor conducting a consultation with a fellow student as a patient following the second part. Both essays and videos were assessed qualitatively by the groups' teachers. The modified curriculum with CCC was accepted by the JUMC's Dean and Faculty Council.

Therefore, we have retrospectively compared students who participated in the first edition of the CCC into Polish-speaking (CCC+, $n = 160$), English-speaking (CCCen+, $n = 55$) and Polish-speaking students from the year above who did not have the CCC in their curriculum (CCC-, $n = 122$) in the case of Patient-Centered Attitudes (PCA) and Attitudes towards Communication Skills Learning (CSLA).

For comparison we used three validated questionnaires — Patient-Practitioner Orientation Scale (PPOS) [13] and Leeds Attitude Towards Concordance II Scale (LATCon II) [14] were used to assess PCA and Communication Skills Attitude Scale (CSAS) [15] was used to assess CSLA. PPOS beside the total result is divided into two subscales — sharing (PPOS-S) and caring (PPOS-C). The students with higher scores in PPOS, PPOS-S and PPOS-C and LATCon II presented better PCA. CSAS is divided into two subscales — positive attitudes (CSAS-P) and negative (CSAS-N). The higher scores in these subscales were connected with more positive or negative CSLA respectively. The characteristic of all scales can be found in Table 1.

Table 1. Characteristics of questionnaires [13–15].

Questionnaire	Measured attitude	Number of items	Scoring	Score range	Example of item
LATCon II	Attitude toward concordance	20	4-point Likert scale: strongly agree to strongly disagree	0–36 — sum	Prescribing should take account of patients expectations of treatment
PPOS-S	Attitude toward sharing information and decision-making process with the patient	9	6-point Likert scale: strongly disagree to strongly agree	1–6 — mean	The doctor is the one who should decide what gets talked about during a visit.
PPOS-C	Attitude toward enhancing the doctor-patient relationship and toward knowing the patient's psychosocial background	9		1–6 — mean	Although health care is less personal these days, this is a small price to pay for medical advances.
PPOS	Combination of PPOS-S and PPOS-C	18		1–6 — mean	
CSAS-P	Positive attitudes toward communication skills learning	13	5-point Likert scale — strongly disagree to strongly agree	13–65 — sum	In order to be a good doctor, I must have good communication skills
CSAS-N	Negative attitudes toward communication skills learning	13	5-point Likert scale — strongly disagree to strongly agree	13–65 — sum	I can't see the point in learning communication skills

We obtained the authors' permissions to use and translate the scales into Polish, which we have done partially according to WHO's guidelines for the process of translation and adaptation of instruments which consists of forward translation, expert panel back-translation, pre-testing and cognitive interviewing and preparing the final version. Forward-translation was performed by an external company and expert panel, and back-translation was performed by Department of Medical Education's (DME's) teachers and students from the university. There was no pre-testing and cognitive interviewing.

Participation was voluntary and students were fully informed about the study and that their refusal would bear no consequence on their future education. The JUMC Committee of Bioethics had granted formal permission to conduct the study and all the ethical guidelines were strictly followed. We asked CCC+ and CCCen+ for participating in the study during the 5th year of medical education and CCC- during the 6th year. Every student that participated in the study signed informed consent forms. If they agreed to participate, students were asked to complete a form containing all questionnaires as well as questions regarding age, sex, motivation to study medicine and choice of future specialization.

We divided students into groups based on motivations; humanitarian factors (MotHUM), financial agenda (MotFIN) and a combination of both (MotMIX). In the case of choice of specialization, we divided students into those who considered surgical fields (General Surgery, Thoracic Surgery, Colon and Rectal Surgery, Obstetrics and Gynecology, Gynecologic Oncology, Neurological Surgery, Ophthalmic Surgery, Oral and Maxillofacial Surgery, Orthopaedic Surgery, Otolaryngology, Pediatric Surgery, Plastic and Maxillofacial Surgery, Urology and Vascular Surgery), as recognized by the American College of Surgeons (SpecSUR) and non-surgical fields (SpecINT). Moreover, we also divided participants based on future career plans into those who are considering specializations with more human contact (such as family medicine, psychiatry, and pediatrics) (SpecHUM) and with less of these interactions (SpecNHUM). This last division was based on Bombeck's paper [11].

Statistical analysis was prepared in R, v.3.4.2 with the use of chi-square test, Mann-Whitney' test and Kruskal-Wallis with post-hoc analysis by Dunn's test when necessary. Normality of distribution of the variables was checked with Shapiro-Wilk's test. A p-value below 0.005 was considered statistically significant.

Results

Beside group characteristics, we divided the results into two parts — comparison between groups based on participating in Clinical Communication Course and internal analysis of all three groups based on specialization choice and motivation to study medicine.

Group characteristics (see Table 2)

In CCC+ and CCC– there were significantly more women than in CCCen+ (60.26% vs. 73.63% vs. 37.74%, respectively; $p < 0.001$). CCC+ were significantly younger than CCC– and CCCen+ (23.49 v 24.82 v 25.2 y.o. respectively; $p < 0.001$). In the case of having doctors in the family, specialization preferences and motivation to study medicine, there were no differences between the groups.

Table 2. Characteristics of participants.

Parameter		CCC+		CCC–		CCCen+		p*
		n	%	n	%	n	%	
Sex	Male	62	39.74%	31	26.27%	33	62.26%	<0.001
	Female	94	60.26%	87	73.73%	20	37.74%	
Doctors in family	Yes	60	37.74%	44	36.07%	15	27.27%	0.37
	No	99	62.26%	78	63.93%	40	72.73%	
Specialization focused on doctor-patient contact	Yes	25	19.84%	31	31.96%	9	21.95%	0.104
	No	101	80.16%	66	68.04%	32	78.05%	
Specialization choice	Surgical	39	28.89%	27	28.12%	11	26.83%	0.966
	Non-surgical	96	71.11%	69	71.88%	30	73.17%	
Humanic reasons to study medicine	Yes	29	21.80%	17	17.00%	9	19.15%	0.803
	No	67	50.38%	49	49.00%	22	46.81%	
	Both	37	27.82%	34	34.00%	16	34.04%	
Cognitive motivation	Values-based	31	23.31%	24	24.24%	7	14.89%	0.602
	Cognitive	33	24.81%	24	24.24%	16	34.04%	
	Both	69	51.88%	51	51.52%	24	51.06%	
Parameter	CCC+		CCC–		CCCen+		p**	
	Average (SD)	Median (quartiles)	Average (SD)	Median (quartiles)	Average (SD)	Median (quartiles)		
Age	23.49 (1.08)	23 (23–24)	24.82 (0.85)	25 (24–25)	25.2 (2.03)	25 (24–26)	<0.001	

* chi-square test

** Kruskal-Wallis' test + post-hoc analysis (Dunn's test)

Comparison Based on Participating in CCC

1. CCC+ vs CCC– (see Table 3)

There was a statistically significant difference in PPOS-C — CCC+ reached a higher score (2.75 v 2.52; $p < 0.001$) as well as for PPOS (2.91 v 2.74; $p = 0.003$).

There were no statistically significant differences in the case of PPOS-S, LATCon II, CSAS-N, and CSAS-P.

Table 3. CCC+ vs CCC- comparison.

Questionnaire	Group	N	Average	SD	Median	Min	Max	p*
PPOS-S	CCC+	160	3.06	0.63	3.11	1.44	5.11	0.11
	CCC-	122	2.95	0.62	2.94	1.22	4.67	
PPOS-C	CCC+	160	2.75	0.51	2.78	1.11	4.11	<0.001
	CCC-	122	2.52	0.48	2.5	1.33	3.67	
PPOS	CCC+	160	2.91	0.5	2.92	1.44	4.44	0.003
	CCC-	122	2.74	0.47	2.72	1.39	3.94	
LatCON II	CCC+	160	41.35	5.02	42	28	50	0.452
	CCC-	122	40.62	6.02	41	25	50	
CSAS-P	CCC+	160	46.96	8.4	48	19	63	0.313
	CCC-	122	46.04	8.69	47	15	64	
CSAS-N	CCC+	160	31.22	6.62	30.5	18	57	0.625
	CCC-	122	31.59	6	31	18	49.83	

* Mann-Whitney's test

2. CCC+ vs CCCen+ (see Table 4)

There were no statistically significant differences between these groups in PPOS-S, PPOS-C, PPOS, LATCon II and CSAS-P scales. CCC+ students reached statistically significant higher score in CSAS-N than CCCen+ students (31.22 v 28.32; $p = 0.004$).

Table 4. CCC+ vs CCCen+ comparison.

Questionnaire	Group	N	Average	SD	Median	Min	Max	p*
PPOS-S	CCC+	160	3.06	0.63	3.11	1.44	5.11	0.6
	CCCen+	55	3.12	0.57	3	1.78	4.67	
PPOS-C	CCC+	160	2.75	0.51	2.78	1.11	4.11	0.214
	CCCen+	55	2.69	0.46	2.67	1.67	4.22	
PPOS	CCC+	160	2.91	0.5	2.92	1.44	4.44	0.821
	CCCen+	55	2.91	0.45	2.89	2	4.44	

Table 4. Cont.

Questionnaire	Group	N	Average	SD	Median	Min	Max	p*
LatCON II	CCC+	160	41.35	5.02	42	28	50	0.642
	CCCen+	26	42.16	5.3	41.5	33	53	
CSAS-P	CCC+	160	46.96	8.4	48	19	63	0.984
	CCCen+	55	47.42	7.94	48	30	65	
CSAS-N	CCC+	160	31.22	6.62	30.5	18	57	0.004
	CCCen+	55	28.32	4.94	28	18	40	

* Mann-Whitney's test

Internal Analysis

1. CCC+

Specialization choice

Students who are considering specializations based on human contact (SpecHUM) have reached statistically significantly lower scores than those with different choices (SpecNHUM) in PPOS-S (2.79 v 3.09, $p = 0.038$), PPOS-C (2.52 v 2.79, $p = 0.018$) and PPOS (2.65 v 2.94, $p = 0.012$). Statistically significant differences in LATCon II, CSAS-N and CSAS-P were not observed.

There were no statistically significant differences in any scale according to consideration of surgical or non-surgical fields.

Motivation to study medicine

Students who have motivation based on finances (MotFIN) reached higher scores than their colleagues who were motivated not only by that but also by humanitarian reasons (MotMIX) in PPOS-C (2.86 v 2.56, $p = 0.014$) and in PPOS (3.01 v 2.7, $p = 0.036$). There were no differences between these groups in case of PPOS-S, LATCon II, CSAS-P and CSAS-N nor between MotFIN and MotHUM and MotHUM and MotMIX in any scale at all.

2. CCC- ANALYSIS

There were no differences within this subgroup in the case of specialization choices or motivation to study medicine in any of the used scales.

3. CCCen+ ANALYSIS

We have not observed any statistically significant differences when we divided the CCCen+ into subgroups based on specialization choices or motivation to study medicine.

Discussion

In our study, Clinical Communication Course (CCC) improves the Patient Centeredness (PC) among medical students immediately after the course, which we have proven for the first time in Poland and Central-Eastern Europe. Such findings are contrary to the results of the study by Bombeke *et al.*, which showed a significant decline in Patient-Centered Attitudes (PCA) after CCC. It is not perfectly clear to us what are the reasons for such a difference. Bombeke hypothesized, that CCC created a too idealistic view on the doctor-patient relationship, and then it was confronted with more complex and non-ideal hospital reality during the clerkship. As our students were investigated before clinical internship, they could have been protected from such attitude decline resulting from non-ideal real-life experiences. Other possible explanations are cultural differences, which particularly in the area of communication and attitudes may play a vital role. Additionally, composition and way of implementation of CCC can make the difference — however, both courses were based on Calgary-Cambridge model principles.

Among students who attended the course, the Polish group showed more negative Attitudes toward Clinical Skills Learning (CSLA), which could be explained by the fact that Polish students rarely see senior doctors using these communication skills during their clerkships and summer rotations, as clinical communication is still in the process being implemented into curricula of Polish medical universities. Therefore, they may see the use of these skills as artificial. This is in contrast to Norway, the US and the UK where most English-speaking students underwent their summer rotations, as doctors practicing in these countries have been experiencing Clinical Skills Training (CST) for decades. Integrating clinical communication with clinical clerkships would be the next logical step and it would be interesting to see if CSLA results would change as a result, especially given the evidence that students report dissonance between such courses and clinical practice even when doctors have attended CST [16].

The results of the analysis of the Polish-speaking students who attended the course (CCC+) were surprising and challenging to interpret. With regards to motivation, students motivated financially (MotFIN) were, in fact, more patient-centered than the group who had also humanitarian reasons (MotMIX). We additionally found that students who were considering specializations based on human contact (SpecHUM = pediatrics, family medicine, psychiatry) reported less Patient-Centered Attitudes than their colleagues with different choices (SpecNHUM). There were no similar findings in the group without CCC (CCC-) and among the English-speaking students who attended the course (CCCen+), who were less negative toward the majority of the course from the outset. Thus, it seems that students who we would have suspected of being less patient-centered at the very beginning reacted better to the CCC. We

suspect that MotFIN students could see the clear connection between PC and better health care which could provide them better income in private healthcare which is considered as better regarding doctor-patient communication than the public one. In case of SpecNHUM, it is possible that this group is more prone to CCC at the beginning, while SpecHUM students may see a lot of content discussed as obvious and redundant which could weaken their perceptions of the course.

We believe the strength of this study lies in the fact that this comparison is possible only once, as from now every medical student at Jagiellonian University Medical College (JUMC) will attend Clinical Communication Course (CCC), which they complete in the 5th year of study, thus there will be no more students who will not have this course in their education. There were no major changes in any other parts of the curriculum which would have affected only one of the groups. The data obtained from the first completed CCC is valuable as it can be used as a reference to observe how the changes in the course (e.g. implementing the simulated patient) impacts Patient-Centered Attitudes (PCA) among the students compared to previous years in future studies. There are notable limitations of this study to take into account. The CCC- students were older and further along in their education which could have impacted their beliefs at the time; however, CCC+ and CCC- were consistent on all other parameters and content of the rest of the curriculum was comparable. Unfortunately, we do not have any baseline data, so we do not know if the groups differed with regards to PC at the very beginning. CCCen+ were using the original versions of the questionnaires while the rest of the students were using translated versions which could also have influenced results, especially since validation of the instruments in Polish was not performed.

In conclusion, Clinical Communication Course (CCC) conducted at Jagiellonian University Medical College (JUMC) improved patient-centeredness among Polish-speaking medical students, who also showed more negative attitudes toward communication skills learning than English-speaking groups.

Among Polish-speaking students who attended the course, those who are considering a specialization with less patient contact were more patient-centered. Additionally, students within this group whose motivation focused only on financial reasons were more patient-centered than students with a combination of humanistic and financial reasons to study medicine.

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Contributions

Michał Pers, Stanisław Górski, Agata Stalmach-Przygoda — designing of study, data analysis.

Łukasz Balcerzak, Aleksandra Karabinowska, Jolanta Świerszcz, Ian Perera — data analysis.

Ian Perera — data analysis, proof reading.

Magdalena Szopa, Grzegorz Cebula — designing of study, mentorship.

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Conflict of interest

None declared.

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