COMMITTEE FOR THE ADVANCEMENT OF LEARNING AND TEACHING (CALT)

Final Report on University Teaching Development Grant

Title of Project: The Empathy Project - Did the New Curriculum Change Medical Student Communication of Empathy Skills?

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Snapshot of the Project

This project extends The Empathy Project, a longitudinal study that has collected a dataset of validated empathy and clinical communication skills measures since 2009. The participants have been Wellington medical students both before and after the introduction of an Empathy Teaching Innovation (ETI), and also before and after a major medical curriculum change. The ETI improved empathy and clinical skills for medical students who went through the old medical curriculum (1), but unexpected findings were observed for the new curriculum. To clarify these findings, an RCT randomly exposing half the new curriculum cohorts to the ETI was conducted. Our findings suggest that the ETI did not significantly enhance student self-report on empathic communication in the new curriculum students, but medical students who received the ETI were rated as more empathetic by simulated patients. Statistically significant correlations were found between patients' perception of empathy and consultation performance for the intervention group, but not the control group.

Introduction

Clinical knowledge and technical skills are important elements of medication education; however, interpersonal and empathy skills are increasingly recognised as core clinical skills (2). Clinical empathy has historically been on the "hidden curriculum", even though studies have demonstrated that communication skills of clinicians have considerable influence on patient satisfaction, compliance and health outcomes (3-5). Clinicians who are more empathetic also benefit from higher job satisfaction and less malpractice litigation (6), while a lower level of empathy was associated with a higher rate of self-reported medical errors (7). Alarmingly, there is a growing public perception that clinicians are growing too "detached" to care (8), and this perception has been further reinforced by cross-sectional and longitudinal studies on the decline in communication of empathy among medical students (9, 10). These findings suggest that attempts should be made to improve empathy in clinicians in-training and in practice.

A number of approaches have been implemented to enhance and sustain empathy in medical students, namely interpersonal skills training, exposure to role models, role playing, studying literature and arts, and audio or video recording of students' encounters with patients (11, 12). The Empathy Project has taken place in the context of teaching and learning counselling skills of Motivational Interviewing and Brief Intervention (MI/BI) in addiction medicine. While the ETI was effective in improving empathy skills (1), the increase in empathy scores was not sustainable: A significant decline in medical students' empathy scores was observed from Year 5 to Year 6 medical students (13).

Beginning in 2008, a revised 'Early Leaning in Medicine' curriculum was introduced at the University of Otago. The new curriculum allows medical students to start acquiring

clinical skills in their first year study of medicine and have more frequent patient contacts. Courses that emphasise integrated case-based learning, clinical skills acquisition and community-based exposures are added to the existing modules on various body systems (14). While there is evidence in favour of early practical experience in raising awareness in medical students about the importance of developing skills such as empathic communication (15, 16), unexpected findings suggesting a decline in empathy scores for the new curriculum medical students were observed.

To clarify these findings, a randomise controlled trial was conducted by exposing half of the new curriculum medical cohorts to the ETI to better understand the impact of the new 'Early Leaning in Medicine' curriculum and the ETI on medical students' empathy and clinical skills.

Methods

The Empathy Project has collected longitudinal data from two pre-curriculum-change cohorts (2009 and 2010 Year 5 medical students), one post-curriculum change (2011 Year 5 medical students) with one-year retention of learning data (Year 6 for each year cohort). The dataset currently includes validated measures of empathy [Jefferson Scale of Physical Empathy (JSPE) and Jefferson Scale of Patient Perception of Physician Empathy (JSPPPE)]; clinical communication skills [Behaviour Change Counselling Index (BECCI)]; formative Objective Structured Clinical Examination (OSCE); video footage of simulated consultations; and student self-rated, tutor rated, and peer-rated consultation performance scores. We have informed consent to use the data for research purposes.

The 2013 cluster RCT collected data on JSPE, JSPPPE, BECCI, video footage and consultation performance scores from Year 5 post-curriculum change medical students. The scenarios of consultation included alcohol cessation planning, bipolar disorder, panic disorder, and postnatal depression. Six rotation groups of medical students were randomised to either receive the ETI or not (i.e., three groups received the ETI and three did not) to determine if and how the new curriculum contributed to the changes in empathy and clinical skills. The ETI, introduced in 2010, is a one-hour actor-led empathy tutorial focusing on how to "walk a mile in patients' shoes". Informed consent was sought and group randomisation was decided by the actor who delivered the Empathy Teaching Innovation.

Key Findings

The 2013 participants included 79 consenting medical students. Three medical students (2 males; 1 female) did not consent to taking part in the study. The control group consisted of 40 medical students (20 males; 20 females), and the intervention group included 39 students (15 males; 24 females). Table 1 displays the descriptive statistics of outcome measures separated by groups.

Table 1.
Means and standard deviations of outcome measures by groups

	Control (n=40)		Intervention (n=39)	
	M	*SD*	*M*	*SD*
Tutor-rated OSCE:				
Content	8.80	1.14	9.10	1.10
Clinical skills	4.05	.61	4.33	.74
Patient likelihood to return	1.54	.52	1.65	.50
Process	5.76	.68	6.01	1.00
Overall	5.05	.82	5.26	.88
Student-rated OSCE:				
Content	8.66	1.50	9.22	1.66
Clinical skills	4.14	.69	3.87	.79
Patient likelihood to return	1.25	.23	1.25	.36
Process	5.22	.21	5.29	.77
Overall	4.80	.52	4.75	1.02
Baseline JSPE	113.22	12.30	113.85	8.05
Post-Intervention JSPE	114.00	10.31	113.36	6.09
Patient Perception of Physician Empathy (JSPPPE)	25.56	2.65	28.14	4.43

Self-report Empathy Scores as Indicated by JSPE Scores
No statistically significant difference was observed, $t(77)=-.27$, $p=.79$, suggesting that the assignment of student rotation in groups resulted in an unbiased sampling with regard to baseline empathy scores. Similarly, no statistically significant difference was observed between the control and intervention groups for post-intervention empathy scores, $t(77)=.34$, $p=.74$, suggesting that the ETI did not have a statistically significant impact on new curriculum medical students' self-report empathy.

Patients' Perception of Physician Empathy as Indicated by JSPPPE Scores
Medical students' communication of empathy, as rated by simulated patients, showed that medical students who received the ETI were perceived as significantly more empathetic, as compared to medical students in the control group, $t(61.82)=-3.13$, $p=.003$.

Correlations between Patients' Perception of Physician Empathy and Consultation Performance
For the control group, no significant correlations were observed among the patients' perception of physician empathy, tutor-rated and student self-rated consultation performance (all *p*s>.05). For the intervention group, patients' perception of physician empathy was significantly correlated with tutor-rated patients' likelihood to return, $r(39)=.43$, $p=.006$, process, $r(39)=.36$, $p=.03$, and overall OSCE performance, $r(39)=.36$, $p=.03$. Additionally, patients' perception of physician empathy was related to student-rated OSCE content, $r(39)=.47$, $p=.002$, clinical skills, $r(39)=.51$, $p=.001$, and overall OSCE performance, $r(39)=.56$, $p<.001$.

Correlations between Patients' Perception of Physician Empathy and Medical Students' Self-Report Empathy
No statistically significant correlations was observed for patients' perception of physical empathy with baseline and post-intervention self-report empathy scores for medical students in the control group (all *p*s >.05). For the intervention group, patient perceptions of physician empathy was significantly correlated with the baseline self-report empathy scores, $r(39)=.41$, $p=.01$, but not with the post-intervention empathy scores.

Discussion and Implications

It was anticipated that the new curriculum medical students might self-report higher level of clinical empathy, given the emphasis of the new curriculum on earlier introduction of clinical skills and earlier patient contacts. However no statistically significant difference was observed for baseline self-report empathy scores between old and new curriculum medical students. Furthermore, in contrast to the old curriculum medical students (1), the intervention (ETI) did not enhance self-report empathy skills in medical students who went through the new curriculum. However, in the cohort of new curriculum students, those who received the ETI intervention were rated as more empathetic by the simulated patient and the simulated patients' perception of empathy was related to the medical students' self-rated and tutor-rated consultation performance.

The current study raises interesting questions for medical educationalists regarding the impact of integrating early practical experience in the medical curriculum. While there is evidence supporting the benefits of early practical experience in raising awareness in medical students about the importance of developing empathic communication skills (15, 16), the changes that the 'Early Learning in Medicine' curriculum bring call for further investigation. The finding that medical students in the intervention group did not self-report an increase in their clinical empathy, but were rated as more empathetic by the simulated patients needs further explanation. One possible explanation is that in the new curriculum the earlier emphasis on clinical risk and clinical boundaries might undermine natural empathic traits of students. As a result, the medical students' own conceptualisation of clinical empathy may be different to that of simulated patients. This unexpected finding was discussed with Prof. M Hojat, the designed of both the JSPE and JSPPPE tool. It is consistent with his own (unpublished) observations that the JSPE and JSPPPE may be measuring different aspect of empathy. One important conclusion from this study is that both the JSPE and JSPPPE may be useful empathy assessment tools to examine the development of clinical empathy for medical students.

Summary of Spending

The financial report to 28th March is available. There is a further $4,839 in salary due to be paid out from the remaining balance in the next pay period.

Other Output

The Empathy Project has a track record of dissemination success and it is anticipated that the topics addressed by this study, namely curriculum change, early practical learning, empathy, and patients' perception of physician empathy, will be of particular interest to peer review journals. Two papers are currently being prepared for publication in international peer reviewed journals. We will also actively pursue conference presentations. Targeted health conferences include: Australia and New Zealand Association of Health Professional Educators, the NZ GP College and College of Psychiatrists (RANZCP), and selected conferences on socio-linguistics.

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