

Changing students' moral reasoning ability – is it at all possible?

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Background. Ethics training at tertiary level is important to facilitate an understanding of patient dignity and respect. Traditionally, ethics has been taught in the form of didactic lectures; however, the authors are of the opinion that practical applications are more useful.

Objective. To measure students' moral reasoning frameworks before and after an intensive course in medical ethics.

Methods. The study cohort was given a pre- and post-test of the moral behaviour scale (MBS). The *t*-test for matched scores was performed to determine the presence of significant differences between the mean pre- and post-test scores for the 5 scales of the MBS.

Results. The study showed that there was a change in the students' moral behaviour when a specific course structure was evaluated.

Conclusion. A combination of didactic and Socratic methodology of training had some effect on the moral reasoning ability of healthcare students.

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An assumption that higher moral reasoning is a desirable quality for healthcare providers is supported by research that shows a correlation between moral reasoning ability and good clinical performance.^[1] However, moral reasoning (ability to distinguish between right and wrong and good and bad) can only begin, as a cognitive process, once a problem has been identified.^[2] This is disconcerting, as a considerable body of evidence indicates that people have little, if any, insight into what constitutes a moral problem and the processes underlying their judgements (mainly evaluations or estimates) and decisions (an intention to pursue a particular course of action), causing their moral behaviour to be based essentially on rationalisation.^[3,4] According to Kohlberg's cognitive moral development theory, an individual must first become aware of an ethical issue before ethical judgement processes are likely to be triggered.^[5] Kohlberg and Blatt worked on a theory^[6] in which they argue that individuals can only move to higher levels of moral reasoning by reorganising their thinking after they have had the opportunity to grapple independently and actively with moral issues or dilemmas one stage above their current moral development.

Traditionally, ethics has been taught in the form of didactic lectures in which much information has been given to students, who had to reproduce the facts. The author concurs with Rest^[7] that this kind of methodology is counter-productive in isolation as a singular teaching technique where only summative assessment is done. Rest^[7] argues that Socratic classroom discussions (small-group discussions (usually 5 - 15 participants) about universal questions) held over several months can produce changes (understanding issues as having a moral base) which, although small, are significantly greater than those found in control groups that have not had this experience. The aim of this study was therefore to conduct a pilot study in a South African (SA) study to test the assertions of Rest^[7] and investigate whether a combination of didactic and Socratic teaching approaches could influence a group of students' moral reasoning abilities. The aim is furthermore to use the knowledge gained from this study and to conceptualise a next study where suggestions could be tested, such as the integration of moral frameworks and reasoning activities into the general curriculum rather than it being a separate module.

A 1-week course was presented to include Beauchamp and Childress' four basic principles (autonomy, beneficence, non-maleficence and justice) as

well as assisting participants' growing awareness of one another's viewpoints on values and also their consciousness of their own personal values. In addition to this information about the legal requirements, the formation of psychological structure in moral reasoning and the implication of one's actions were also provided to give the students a holistic picture of the effect of decision-making. Applying the acquired knowledge and skills through a final *grand finale* group case study presentation, the students were challenged to overcome their own prejudices and give their objective analysis of a case within their field of study by following the steps of an ethical reasoning.

The duration of the intensive course was 1 week, with 8 hours contact per day with a facilitator. The format of the course was both didactic (moral instruction) and Socratic (answering questions with questions, where participants were challenged to form their own insights and solutions). The formal tuition (as described above) was supported by multimedia presentations (video-clips and podcasts) of influential case studies, ethical dilemmas and opinion analysis found in the ethical literature. Group work, with an average of 5 - 6 members per group, focused on Socratic dialogue and developed students' reasoning abilities. Each group had individual contact time with the facilitator during the day, when everyone had to give his/her opinion about an ethical dilemma to challenge ideas and internalise new constructs. The objective of the research was therefore to measure students' moral reasoning frameworks before and after the intensive course in medical ethics to address the research question.

Methods

Participants and instruments

The authors wanted to ascertain whether a 40-hour, week-long course of basic ethics training would influence the moral behaviour, reasoning and judgement of a group of final-year dietetic university students, regardless of whether the influence was only temporary. The aim was to prove that it is possible, and to suggest incorporation over a longer period of time (curriculum integration). To test the research question, 38 fourth-year dietetics students at a tertiary institution in SA were asked to participate voluntarily in the study. The course was part of their degree programme. No student was coerced into completing the questionnaires and all 38 students participated in completing the survey anonymously. Ethical clearance

was obtained from the Ethics Committee of the University of the Free State, Bloemfontein (ECUFS No. 139/2011) to conduct the study.

The students were asked to complete a biographical questionnaire. Table 1 indicates their gender.

Although females usually score higher than males in moral behaviour and judgement tests^[8] (possibly because of their gender-specific socialisation processes^[9]), this variable was not included in the study as the majority of the group was female and only 3 were male.

The students were also asked to complete Crissman's moral behaviour scale (MBS) (adapted by Rettig and Pasamanickas^[10]) before class time, and after completion of the course (outside class time). The scale consists of examples of different behaviours, grouped into 5 categories as clustered, and described by Gorsuch and Smith.^[8] The students were asked to judge all 50 items as either moral or immoral. The categories are:

1. Misrepresentation, e.g. a student who has been allowed to grade his own paper and reports higher marks than achieved.
2. Irreligious hedonism, e.g. falsifying a child's age to secure a reduced fare.
3. Sexual misbehaviour, e.g. a man deserting a girl whom he impregnated without taking responsibility.
4. Non-philanthropic behaviour, e.g. not giving to charity when able to.
5. Non-conservative marriage pattern, e.g. seeking divorce because of incompatibility when both parties agree to separate.

Table 1. Distribution of total group with regard to gender

Variable	Distribution, %
Female	92
Male	8

The scale values range between 1 ('I strongly agree') and 10 ('I strongly disagree'). Therefore, a higher average score would indicate that the person disagreed more with the specific action/subscale, i.e. a higher score on the misrepresentation subscale would indicate that it is less acceptable. Averages per category were calculated and converted to a score out of 100 to simplify statistical analysis.

Analysis of data

To determine the presence of significant differences between the mean pre- and post-test scores for the 5 scales of the MBS, the *t*-test for matched scores^[11] was performed. This test does not determine whether there is a significant difference in the means of two groups, but rather investigates whether the mean difference equals 0. Consequently, the mean scores (\bar{x}), standard deviations (*s*), mean difference scores (*D*) and standard error of the mean (*SG*) for the different dependent variables are reported. To determine the difference scores, the post-scores were subtracted from the prescores.

Results

The descriptive statistics (averages and standard deviations) for the total research group affecting the 5 subscales of the MBS are given in Table 2.

As shown in Table 2, only 2 of the 5 subscales have significant *t*-values (misrepresentation and sexual misbehaviour), which means that these are the only 2 subscales where a change in the moral reasoning of the total group has taken place. The average post-score for misrepresentation is significantly higher than its average prescore, while sexual misbehaviour is the opposite, i.e. the average post-score is significantly less than the average prescore. The last column indicates, by means of the Cohen *d*-value, that these differences have medium effect sizes, where effect size means the relation the average participant in

the study has to the average control group (those not included in the study). This is an indication that the results are of practical significance and should be noted as areas where change has taken place.

Discussion

The study did show that there was a change in the students' moral behaviour and that the training had some effect. The students started to view the different scenarios in a less rule-orientated fashion (which is synonymous with religiosity) and started to move from Kohlberg's stage 4 (conventional level) to a more principled stage 5, where the individual determines what is right and wrong more autonomously by looking to universally held principles of justice and rights. Thereby, the students became aware of and started to identify moral issues. Applying an analytical framework (four-quadrant analysis of ethical problems), the students were forced to think more widely than their basic assumptions and incorporate more detail into their moral judgement-making. This stimulated more right-hemisphere thinking, which explains the downward pattern in all the post-test scores of the MBS values.

Although the changes in the average scores of the post-test are not as large as anticipated, the fact that the course was run over a single week must be taken into consideration. A limitation of the 40-hour programme is that moral development does not take place or change necessarily over a period of a week. However, the aim of the study was not to indicate total moral reasoning change, but rather to illustrate that in the SA student population such training can influence students' moral reasoning abilities and that this needs to be explored and extrapolated into a greater part of the curricula. Therefore, a programme in ethical training should be structured over a longer period, where the students have more time to engage in a Socratic dialogue, be challenged to move to a

Table 2. Mean scores (\bar{x}), standard deviations (*s*), mean difference scores (*D*) and standard error of the mean (*SG*) for the matched difference scores

Dependent variable	Prescore		Post-score		Difference score		<i>t</i> -value	Two-sided <i>p</i> -value	<i>d</i>
	\bar{x}	<i>s</i>	\bar{x}	<i>s</i>	<i>D</i>	<i>SG</i>			
Misrepresentation	60.20	8.22	62.88	8.25	-2.68	1.10	-2.434*	0.023	0.48
Irreligious hedonism	13.80	4.83	15.00	5.13	1.20	1.13	1.062	0.299	-
Sexual misbehaviour	25.88	4.39	23.56	5.13	2.32	1.05	2.216*	0.036	0.44
Non-philanthropic behaviour	17.28	5.21	16.40	6.52	0.88	1.40	0.627	0.537	
Non-conservative marriage pattern	4.24	3.33	4.16	2.85	0.08	0.78	0.103	0.919	

**p* ≤ 0.05

cognitive moral stage higher than the present, and have a chance to internalise these opinions and changes.

It would be beneficial to the discipline of ethics training to use the data gathered in this pilot study and do a similar study on a course which runs over an entire degree programme (these currently do not exist in SA) to extrapolate the benefit, and then to follow the graduates in a longitudinal study to see whether they genuinely internalised the principles and were able to apply them in specific situations in their professional conduct.

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