Croatian medical students see academic dishonesty as an acceptable behaviour: a cross-sectional multicampus study

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ABSTRACT

Aim To provide insights into the students' attitude towards academic integrity and their perspective of academic honesty at Croatian medical schools.

Methods A cross-sectional study using an anonymous questionnaire containing 29 questions on frequency of cheating, perceived seriousness of cheating, perceptions on integrity atmosphere, cheating behaviour of peers and on willingness to report misconduct. Participants were third-year (preclinical) and fifth-year (clinical) students from all four Croatian Schools of Medicine. Outcome measures were descriptive statistical correlates and differences in students' self-reported educational dishonesty, perceptions of cheating behaviour and medical school integrity atmosphere.

Results Of the 1074 students enrolled in the third and fifth year, 662 (62%) completed the questionnaire. A large proportion of the students (97%) admitted using some method of cheating and 78% admitted engaging in at least one form of misconduct. About 50% had a lenient attitude towards six acts of academic dishonesty. Only 2% reported another student for cheating. Risk factors for cheating were strongly correlated with students' perceptions of peer cheating behaviour, peer approval of cheating, low perception of seriousness of cheating and inappropriate severity level of exams and teaching materials.

Conclusions Cheating is prevalent in Croatian medical schools and academic dishonesty is seen as acceptable behaviour among numerous future Croatian doctors.

INTRODUCTION

The media all over the world report cases of corruption in all aspects of life almost every day. Fraud appears to be ubiquitous and academic environment is not excluded. Students are cheating across all educational levels and systems in developed and developing countries.[1 2] Being a post socialist and post war country in transition, Croatia's political, economic and academic life is characterised by corruption. According to Croatia's current president 'corruption has become a way of life'.[3]

There is growing evidence that academic dishonesty is abundant in medical schools worldwide, as well as in Croatia.[4 5] Students' ethics in the classroom may impact their ethics as professionals because those who cheat in medical schools are known to cheat later on in patient care.[6–8]

The findings add to previous research, which revealed that Croatian students come to medical schools ready to cheat.[9] This cross-sectional investigation attempted to ascertain the level of academically dishonest behaviour of Croatian medical students in preclinical (year 3) and clinical settings (year 5).

SUBJECTS AND METHODS

Subjects and data collection

The anonymous 29-item questionnaire based on previous successful surveys was distributed by faculty after regular lectures to third-year and fifth-year students of all Croatian Medical schools.[9 10]

The first part collected demographic information. In the second section, the measure of dishonest peer behaviour consisted of student perceptions of how frequently either plagiarism or test cheating occurred at their medical school.[11] The aggregated peer behaviour score could range from 2 to 10; the higher the score, the higher the frequency of peer cheating behaviour. The aggregated integrity atmosphere score was composed from answers of 5 questions and could range from 5 to 20, where higher scores meant a more positive academic integrity atmosphere. Five questions asked students to rate the relevance of exams and teaching materials. The aggregated score of exam appropriateness could range from 5 to 20, where higher scores indicated higher relevance.

In the third section, students were asked 2 questions about 10 forms of academic dishonesty listed in table 1: how often they had committed it, and how serious they thought it was. The aggregated self-reported dishonesty score could range from 10 to 30, with 10 representing no self-reported academic dishonesty and 30 meaning frequent cheating in all forms of assessed academic misconduct. The aggregated severity level rating score could range from 10 to 40, with 10 meaning that none of the 10 behaviours was rated as cheating and 40 representing serious cheating.

Finally, the aggregated score of willingness to report cheating could range from 4 to 16, where higher scores indicated a higher willingness to deal with cheating.

Statistical analysis

The internal consistency reliability of scales was estimated by Cronbach α test. Categorical variables were compared using the Fisher exact test, Pearson's correlation test and multiple regression where appropriate ($p<0.05$ was considered statistically significant).

RESULTS

Demographic information

Of the 1074 third-year and fifth-year students from all 4 Croatian Medical Schools (Zagreb, Rijeka,

Table 1 Summary statistics of students' self-admitted engagement in dishonest behaviour and perceived seriousness of the behaviour among third-year and fifth-year students

Behaviour	Self-admitted engagement (few times and often)			Perceived as moderate and serious cheating		
	Third year (n=415) %	Fifth year (n=240) %	*p Value	Third year (n=323) %	Fifth year (n=169) %	*p Value
Turning in work done by someone else	12	11	0.705	74	77	0.583
Getting exam questions from someone who already has taken the test	88	89	0.799	24	29	0.192
Helping someone else cheat on a test	69	79	**0.004**	45	46	0.924
Copying from another student during a test or exam without his/her knowledge	31	34	0.486	57	55	0.702
Copying from another student during a test or exam with his/her knowledge	73	82	**0.013**	46	47	0.849
Copying text without appropriate attribution	40	63	**0.001**	47	49	0.776
Using unpermitted crib notes during a test	42	47	0.119	58	60	0.773
Taking a test or a part of a test for someone else	13	18	0.140	80	83	0.335
Allowed someone else to copy from your test	93	93	1.000	42	43	0.924
Using false excuse to obtain extension on due date	27	32	0.125	47	57	0.088

All percentages have been rounded of to the nearest whole number.
*p Values were obtained using the Fisher's exact test; $p<0.05$ was considered statistically significant (bold values).

Split and Osijek), 662 (62%) completed the questionnaire. The sample consisted of 420 (63%) third years, 242 (37%) fifth years, 472 (71%) women and 190 (29%) men with a median age of 22 years (range 19–39 years).

Prevalence of self-reported dishonest behaviour

Out of 655 students who replied to all 10 items on self-admitted dishonest behaviours, 97% reported participating in at least 1 of the surveyed cheating behaviours. Over 78% admitted to regularly committing at least one form of assessed academic misconduct. Compared to their younger peers, fifth-year students reported significantly greater engagement in three types of dishonest behaviour: helping someone else cheat on a test ($p=0.004$), copying from another student during a test or exam with his/her knowledge ($p=0.013$) and copying text without appropriate attribution ($p=0.001$) (table 1).

Students' self-reported dishonest behaviour was unrelated to individual demographic difference factors (table 2). Dishonest peer behaviour ($r=0.202$; $p<0.0001$), perceived severity level of cheating ($r=-0.281$; $p<0.0001$), integrity atmosphere ($r=-0.157$; $p<0.05$) and appropriateness of exams ($r=0.180$; $p<0.0001$) were correlated with the self-reported academic dishonesty (table 2). However, when all predictors were included in the regression equation, only the perception of peers' behaviour ($b=-0.265$; $p<0.0001$) and appropriateness of exams ($b=-0.162$; $p<0.05$) remained as significant contributors.

Perceived seriousness of cheating

No significant difference was found among third-year and fifth-year students' perceptions of seriousness of cheating of the 10 different forms of academic dishonesty (table 1). A substantial number of students (roughly 50% or more) did not view six of these forms as dishonest, or viewed them as trivial forms of cheating.

Students who cheated more frequently viewed the seriousness of cheating more leniently than their peers who cheated less ($r=-0.281$; $p<0.0001$). Likewise, students who perceived cheating more leniently were less willing to report cheating ($r=0.096$; $p<0.05$) (table 2).

However, the regression analysis model revealed that students' average grade point had the greatest influence on their perception of the severity of cheating ($b=8.385$; $p<0.0001$).

Perceived institutional academic integrity atmosphere

Dishonest peer behaviour ($r=-0.338$; $p<0.0001$), self-reported academic dishonesty ($r=-0.157$; $p<0.05$), perceived severity level of cheating ($r=-0.134$; $p<0.05$) and appropriateness of exams ($r=0.297$; $p<0.0001$) were about equally correlated with the perceived institutional academic integrity atmosphere (table 2). However, when all predictors were included in the regression equation, only the perception of peers' behaviour ($b=0.186$; $p<0.001$) and appropriateness of exams ($b=0.203$; $p<0.0001$) remained as significant contributors. Besides, some 85% of students agreed and strongly agreed with the assertion that peers who cheated were not embarrassed to tell their friends they had done so.

Students in preclinical settings perceived the academic integrity atmosphere to be more positive ($r=-0.246$; $p<0.0001$) and exams/teaching materials to be more appropriate ($r=-0.245$; $p<0.0001$) in comparison to their peers in clinical settings (table 2).

The reporting of academic misconduct

Out of 656 respondents only 13 (2%) students stated that they had informed faculty of dishonest behaviour on the part of their peers. Just 14 (2%) respondents expressed future willingness to report cheating of their peers. In comparison to their peers in clinical settings, students in preclinical settings showed more willingness to report misconduct ($r=-0.137$; $p<0.05$).

DISCUSSION

Cheating on tests and exams is prevalent in Croatian medical schools since a large proportion of the student body (97%) used some method of cheating, and more than three-quarters of those who reported some form of dishonesty indicated they cheated often in at least one form of assessed academic misconduct. These findings are in contrast to the behaviour of medical students in developed Western countries.[12–14] Relatively

Table 2 Correlations among main aggregated study variables and demographic variables

Variable		Correlations (r)						
	Aggregated scores	α‡	**1 n=432**	**2 n=588**	**3 n=462**	**4 n=391**	**5 n=524**	**6 n=629**
1	Dishonest peer behaviour (never, 1; very seldom, 2; seldom, 3; often, 4; very often, 5)	0.71	–					
2	Self-reported academic dishonesty (never, 1; a few times, 2; often, 3)	0.74	**0.202**†	–				
3	Perceived severity level of cheating (not cheating, 1; trivial cheating, 2; moderate cheating, 3; serious cheating, 4)	0.85	0.057	**−0.281**†	–			
4	Integrity atmosphere in medical schools (higher score means better integrity atmosphere)	0.60	**−0.338**†	**−0.157***	**−0.134***	–		
5	Appropriateness of exams and teaching materials (higher score means better appropriateness)	0.69	**−0.226**†	**−0.180**†	0.023	**0.297**†	–	
6	Willingness to report peer cheating (very unlikely, 1; unlikely, 2; likely, 3; very likely, 4)	0.52	0.057	−0.050	**0.096***	0.035	0.008	–
	Demographic		**n=432**	**n=588**	**n=462**	**n=391**	**n=524**	**n=629**
7	Study year (indicator variable: fifth year)	–	0.008	0.053	0.025	**−0.246**†	**−0.245**†	**−0.137***
8	Average grade (scale 1–5)	–	**0.095***	−0.054	**0.103***	−0.029	**0.096***	−0.035
9	Gender (indicator variable: male)	–	−0.019	0.043	**0.217**†	−0.056	0.076	0.018
10	Place of growing up (village, 1; small town, 2; big town, 3)	–	−0.011	0.067	0.003	0.059	−0.007	−0.056
11	Religious (indicator variable: non-religious)	–	0.003	−0.043	0.013	−0.006	−0.041	0.014
12	Parents educational attainment (elementary, 1; high school, 2; university, 3; MS/PhD, 4)	–	0.027	−0.025	**0.092***	0.076	0.027	−0.045
13	Membership in student organizations (indicator variable: non-member)	–	0.005	−0.066	−0.075	−0.017	0.031	−0.029
14	Extracurricular activities (indicator variable: lack of extracurricular activities)	–	**−0.163***	−0.076	0.006	−0.022	−0.046	0.014

*Correlations significant at p=0.05 (bold values).
†Correlations significant at p=0.0001 (bold values).
‡Cronbach α internal consistency reliability.

speaking, the prevalence of most surveyed dishonest behaviours perceived by third-year and fifth-year medical students was lower compared to the prevalence of the same dishonest acts occurring in Croatian high schools.[9] A similar trend was documented among Canadian students, although the prevalence of cheating among them is notably lower.[15] However, the decreasing trend was not sustained throughout the medical school since fifth-year students reported significantly greater engagement on at least three different forms of misconduct compared to their preclinical peers. Although the general state of academic integrity at Croatian medical schools seems to be better than in Croatian high schools, absolute numbers are still high (table 1). Thus, growing evidence suggests a negative trend in the progress of ethical skills during medical training, which indicates that the medical students' education experience somehow inhibits the development of their moral reasoning.[16]

The perception of peers' behaviour and inappropriate severity level of exams and teaching materials have the greatest influence on students' academic dishonesty suggesting the strong role the perception of peers plays in understanding students' decision concerning cheating. It has been reported that students who perceive that their peers cheat without penalty cheat more.[17]

Future Croatian doctors see academic dishonesty as an acceptable behaviour since roughly half of the respondents perceived many acts of academic dishonesty as 'not cheating' or as 'trivial cheating'. A recent study revealed that two-thirds of Croatian pharmacy and medical biochemistry students do not perceive plagiarism to be a serious offence.[18] Conversely, US students consider such types of academic dishonesty to be 'serious cheating'.[19] In addition, 85% of our respondents were of the opinion that students who cheated were not embarrassed to tell their friends they have done so. Moreover, they even bragged about it.

Croatian medical students show similar reluctance to report academic misconduct by peers as their counterparts in developed Western countries.[20 21] This problem is present in medical profession all over the world although 'physicians shall strive to expose those physicians deficient in character or competence who engage in fraud or deception' as recommended in an international code of medical ethics.[22]

The information obtained in the present study may have some bias as the questionnaire was designed as a self-report format, which may be subject to social desirability response bias. The actual amount of misconduct could be higher than reported as students might not want to implicate themselves. However, given the high levels of reported misbehaviour, we feel that this type of bias probably did not have much effect since our students were a lot more willing to report misconduct than one would have expected. Therefore, the bias could have occurred but the nature of results suggests it did not have much of an effect. Furthermore, a cross-sectional study restricts any inference of causality among the relationships examined.

High prevalence of academic misconduct among Croatian medical students may be a consequence of individual and institutional factors as well as factors beyond the medical school.[9] Croatia is a corrupt country in transition, emerging from war, where the perception of corruption is high.[23] Students in corrupt countries are more likely than their counterparts in

less corrupt countries to have attitudes that reflect lower ethical standards.[4 24 25] More needs to be done to combat the culture of acceptance of academic dishonesty. We suggest that university administrators devote increased resources to this issue and develop mechanisms for managing and curtailing the level of academic misconduct. A failure to do so may result in the production of doctors whose ethical values are not congruent with expectations of the healthcare profession worldwide.

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