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The Profile of Academic Offenders: Features of Students Who Admit to Academic Dishonesty

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Dishonesty in academic settings is a reckless behavior that is unique to students and is associated with cheating and plagiarism of academic tasks. Incidents involving dishonesty in higher education have increased considerably in the past decade, with regard to the extent of these practices, the types of dishonesty employed, and their prevalence. The current study examines the profile of "academic offenders". Which types are more prone to commit academic offenses? To what degree are they "normative" and do they represent the average student with regard to personal traits, personal perceptions, features of their academic studies, risk behaviors, and health risks. The study is based on a structured anonymous questionnaire. The sample consisted of 1,432 students, of whom 899 were female (63%) and 533 male (37%). The research findings indicate a common tendency among more than one quarter of the sample reported cheating on homework and 12.5% reported cheating on tests. Strong associations were found between academic dishonesty and various personal perceptions, the academic study experience, and involvement in other risky and deviant behaviors. Significant predictors of academic dishonesty were found, i.e., self-image, ethics, grades, time devoted to homework, and deviant and daring behaviors.

The research findings might help indicate policies for optimally dealing with dishonesty, maybe even before the offense is committed, by means of cooperation between academic forces.

MeSH Keywords: **Adolescent Behavior • Ethical Analysis • Public Health Administration**

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Background

Disciplinary offenses and the ethical-cultural climate in Israel

Academic dishonesty is a reckless behavior that is unique to students and is associated with cheating on homework and plagiarism of academic assignments [1–3]. A study conducted in Israel by Balik et al. examined the views of nursing students at Tel Aviv University (n=350) towards dishonesty during academic studies [1]. The researchers found that respondents tended to see academic dishonesty as a normative behavior that is not unethical, but emphasized that this does not mean that the students perceive this behavior as appropriate. These research findings are compatible with previous findings concerning students [2,4]. A study conducted in 2009 found that cheating on tests or on homework at least once during the past month was reported by some 25% of students [5]. With regard to gender differences, the research findings are inconsistent. Some studies found that men cheat on tests more than women, while others found no significant gender differences [1,6].

There is wide consensus that lack of integrity in higher education has become considerably worse in the last decade, both in its extent and in the types and prevalence of dishonesty. The “ivory tower” image of academic campuses has been replaced by a completely different image – the campus as a reflection of external society, with its values. This is no surprise, as public personages have been accused and convicted of breach of trust, fraud, and receiving prohibited gifts, as well as submitting assignments that they had not written. Furthermore, cheating occurs in all disciplines, genders, sectors, and levels of religiosity. Moreover, most students see nothing wrong with student deceptions perceived as normative [7]. Already in the process of academic studies, average students perceive the academic degree as a shady business. Sixty-three percent of students read only the abstracts of most articles and 8.6% do not read them at all. Only a minority of 16.5% read most articles in full (ibid.). There is an entire industry of translations and summaries. This reflects a growing conception that it does not matter what grade you receive as long as you pass the course and receive a degree. Thus, institutions of higher education are gradually becoming schools considered by the students to be “degree brokers” rather than “education imparters.” Young people strive for change and the direction is quite clear: a professional degree leading to occupational placement.

The purpose of the current study is to try and characterize students who report academic dishonesty (on tests or homework). Who are those who are prone to committing academic offenses? To what degree are they “normative” and do they represent the average student?

The relationship between the accessibility of higher education and the rise in disciplinary offenses and acts of dishonesty

The twentieth century brought about a revolution in higher education. Up to World War II the main role of this system in most societies was to nurture the elite [8], and it constituted a vehicle for preserving the existing social order [9]. However, from the second half of the twentieth century academia has been acting more and more in the service of society, by making higher education accessible to everyone. The United States led the spread of higher education [10]. In 1940 some 15% of the 18–21 age groups in the United States were enrolled in colleges and universities. By 1970 that rate had reached 45% [11].

The rapid spread of higher education was characteristic of many Western countries in the 1970s, leading to the term “massification of higher education” [12]. Higher education, which until that time could be defined as an opportunity reserved for the privileged few, became the right of everyone, and even a civil duty [13].

In Israel, higher education has gone through a process of expansion and change since the early 1990s. By 2015 Israel had nine universities (including the Open University), 42 academic colleges, 25 colleges for education, and 4 branches of foreign universities recognized by the Council for Higher Education (CHE), for a total of 80 institutions of higher education.

The most important process in this respect was that, as of the 2002/3 school year, there were more undergraduate students studying at colleges than at universities, although in that year the number of university students (76,581) was greater than the number of college students *excluding* CHE recognized branches of foreign universities (68,115) [14]. The total number of students in academic colleges in 2014 was 96,927 [15]. This reflects the increased accessibility of higher education for many students. The colleges encouraged a process that opened the gates of higher education to students previously excluded from academic tertiary education. However even at the time of the decision to increase accessibility, in the 1990s, doubts were raised as to whether the expansion of higher education would have a detrimental or positive effect on its quality [16].

Researchers are of the opinion [17] that one of the outcomes of the massification of higher education is the emergence of disciplinary offenders in academia. Academia in Western countries, including Israel, underwent a process of integrating lower class groups, which drastically changed the system of higher education. This had direct significance for issues of student integrity, discipline, and behavior, both in Israel and elsewhere. Students’ attitude to academic studies became mainly instrumental. Moving the emphasis from education to training also produced significant and diverse disciplinary

problems previously unknown on the campuses. Hence, the current study will attempt to characterize students reporting academic dishonesty (on tests or homework). What types are inclined to commit academic offenses? To what degree are they “normative,” and do they represent the average student?

The relationship between technology in the digital era and the rise in disciplinary offenses and acts of dishonesty

Recently presented research findings [18] indicate that academic fraud has been gathering momentum among students in recent years, with a considerable part of it performed with the assistance of technological means, such as smartphones and social networks [19]. In contrast, another study found that it is precisely students who report greater use of the internet for preparing homework who show the lowest prevalence of dishonest acts [20].

The relationship between deviant and risky behavior norms, as well as recklessness and use of addictive substances, and between the rise in disciplinary offenses and acts of dishonesty

The relationship between various behaviors of deviance and risk, recklessness, health risks, and use of addictive substances is evident from many studies [21–25] and is also explained at length by the problem behavior theory (PBT). This theory assumes that problem behaviors are the product of a combination of risk factors and protective factors contained in the personal and social systems that surround us [24,26]. Risk behaviors, according to this theory, are interrelated and show a clustering effect. Therefore, it may be assumed that dishonesty on tests, which is at the very least a violation of the school’s regulations, will be accompanied by other deviant behaviors and by other student problems within various systems in their environment.

A previous study found that academic dishonesty is a significant predictor of illegal use of cannabis [27]. Furthermore, students who seek thrills, commit driving offenses, and are involved in health risk behaviors are more inclined to use marijuana both initially and regularly than students who have a lower prevalence of these behaviors. The high prevalence of behaviors such as dishonesty on tests, smoking marijuana, and various driving offenses among students indicates that they do not consider them deviant [28].

Material and methods

Research questions

1. What is the current prevalence of academic dishonesty as reported by students?

2. Does cheating on homework differ from cheating on tests and to what degree? To what degree, if at all, are these behaviors performed by the same people?

3. What are the characteristics of the “academic offender” type:

- **Personal characteristics:** gender, age, marital status, and religiosity.
- **Personal perceptions:** self-image, thrill seeking, attention disorders, expectations for the future, ethics and deviance, the security situation, mental health, perceived fitness.
- **Academic studies:** grade average, academic stress, hours of studying or of preparing homework or assignments (beyond school hours), and attitude toward studies.
- **Risk behaviors:** driving violations, driver at fault for accident, deviance, and daring behaviors.
- **Health risks:** misguided nutrition practices (snacks instead of regular meals, energy drinks, and sweetened drinks), smoking, alcohol, cannabis, other drugs, experience with Ritalin and non-prescription Ritalin, and multiple sexual partners.

What weight do these characteristics have when attempting to investigate offending student types?

Research tools

A structured, anonymous self-report questionnaire, based mostly on two main sources: Professor Richard Jessor’s questionnaire on risk and well-being behaviors of college students at the University of Colorado in Boulder [29] and the Israeli Health Behavior in School-aged Children (HBSC) questionnaire [30]. The questionnaire includes questions on various subjects, as follows: various sociodemographic questions; self-perceptions; mental stress; self-image and body image; nutrition, eating habits; physical activity; cigarette smoking habits and withdrawal from cigarettes; smoking a water pipe; drinking alcohol; and drug use. Some of the variables examined were psychosomatic symptoms, social support, social relationships, academic studies, religion and security, and thrill seeking. The questionnaire constructed for the purpose of the current study was comprised mostly of Jessor’s questionnaire and adapted for Israeli students. The questionnaire was distributed among students in class during April and May 2015. The surveyors entered more than 60 classrooms in total within a single university. Each student in the class received a questionnaire. Completion of the questionnaire took 20 minutes on average. The study was conducted according to the rules of the university’s ethics committee and received its approval.

The population and the sample

Of all undergraduate students at the university (the research population), 1442 students participated in the study, constituting 20% of all undergraduate students. The team of surveyors

Table 1. Description of the sample by various sociodemographic variables.

Variable	Variable's values	%	N
Gender	Women	62.8	899
	Men	37.2	533
Age	Younger (than 26 years)	57.5	818
	Older (26 and older)	42.5	604
Marital status	Single	71.9	1016
	Married	26.2	370
	Divorced/widowed	2.0	28
Religiosity	Secular	37.1	526
	Traditional	24.2	343
	Religious	36.5	517
	Other	2.1	30
Faculty/school	Health sciences	32.8	469
	Social sciences and humanities	31.2	447
	Engineering and architecture	24.6	353
	Natural sciences	11.4	163

entered classrooms at the School of Health Sciences, Faculty of Natural Sciences, Faculty of Social Sciences and Humanities, Faculty of Engineering, and School of Architecture. The approximate rate of response to the questionnaire was 89.7%. Ten participants who did not state their gender were omitted. After refining the data, 1432 students were retained in the final sample. The sample included 899 women (62.8%) and 533 men (37.2%). The mean age of the sample was 27 years (SD=6.01 years). Table 1 presents the sample by various sociodemographic variables. It is evident that there is a greater prevalence of women than men (62.8% versus 37.2%, respectively), which was compatible with the distribution of students in the departments sampled. More than 70% of the sample was single, and more than one third of the sample was religious. All the faculties were adequately represented in the sample. The sample represents approximately 80% of the student population in the university.

Research procedure

For the purpose of conducting this study, questionnaires were administered in all undergraduate classrooms of the School of Health Sciences, Faculty of Natural Sciences, and some departments of the Faculty of Social Sciences, and Faculty of Engineering, as well as the School of Architecture. All the students who were in class received a questionnaire. Visits to the classrooms were coordinated by the administrative staff to optimally suit the lecturers, students, and research team. The primary researcher held a preliminary telephone conversation with the lecturers and provided an explanation of the study.

All visits to the classes were coordinated in advance with the lecturers. Significant cooperation of the lecturers and students was obtained for purposes of the study. The team of surveyors received adequate training in order to administer the survey in class. The students were told that they are not obliged to participate and that they are not obliged to answer all the questions if they do not wish to.

Description of the variables

Explained variables are "Cheating on tests during the last month" and "Cheating on assignments or homework during the last month" (1 – never... 5 – up to 5 times or more). A dichotomous variable consists of "Cheating in academy" (0 – not cheated, 1 – cheated).

Description of scales

The "religion" scale had four items (Cronbach's alpha=0.95), e.g., "Be able to rely on the teachings of religion when you have a problem?" and "Believe in God or a higher power or creator?" Combined values dichotomously divided by the median (0 – high religious score, 1 – low religion score). The "self-image" scale had five items (Cronbach's alpha=0.66), e.g., "Ability to make decisions in life" and "Ability to work school success." Combined values dichotomously divided by the median (0 – higher self-esteem, 1 – low self-esteem). The "sensation-seeking" scale had five items (Cronbach's alpha=0.69), e.g., "Likes to do things just for the thrill of that" and "Sometimes doing 'crazy' things just for fun." Combined values dichotomously

Table 2A. Prevalence and probability of academic dishonesty based on sociodemographic variables.

Measure	Value	Reported academic dishonesty	Reported not cheating	Odds ratio (OR)	Significance (CI)
Gender**	Men	35.9%	64.1%	1.12	1.01, 1.24
	Women	28.9%	71.1%		
Age ^{NS}	Younger (than 26 years)	31.0%	69.0%	1.02	1.35, 0.78
	Older (26 and older)	31.6%	68.4%		
Marital status**	Single, divorced	33.8%	66.2%	1.52	2.07, 1.12
	Married	24.7%	75.3%		
Religiosity – 4 items ($\alpha=0.95$)*	Low religiosity	32.3%	67.7%	1.34	1.79, 1.01
	High religiosity	30.8%	69.2%		
Sexual identity*	Not heterosexual	44.0%	56.0%	1.74	3.10, 0.98
	Heterosexual	31.0%	69.0%		

* $p < 0.05$; ** $p < 0.01$; NS – non-significant.

divided by the median (0 – low sensation-seeking, 1- high sensation seeking). The “Primary ADHD symptoms” scale had six items (Cronbach’s $\alpha=0.71$), e.g., “I find it hard to complete the details of a project, after finishing the challenging parts.” Combined values dichotomously divided by the median (0 – less frequent symptoms, 1 – often symptoms). The “future expectations” scale had six items (Cronbach’s $\alpha=0.80$), e.g., “College graduation” and “Success at work I do.” The “moral” scale had seven items (Cronbach’s $\alpha=0.74$), e.g., “It’s OK to cheat on tests or homework” and “It’s okay to steal.” Combined values dichotomously divided by the median (0 – I think it’s wrong, 1 – I think it’s OK). The “security situation” scale had five items (Cronbach’s $\alpha=0.63$), e.g., “Feel my life is in danger after the security incident” and “I made changes in my life after the attacks.” Combined values dichotomously divided by the median (0 – slightly afraid, 1 – very afraid). The “mental health” scale had five items (Cronbach’s $\alpha=0.65$), e.g., “Bad mood” and “Anger.” Variables dichotomously divided by the median (0 – good mental health, 1 – poor mental health). The “fitness concepts” scale had four items (Cronbach’s $\alpha=0.86$), e.g., “It is important to me to feel that I am in good shape” and “I have a lot of energy.” Combined values dichotomously divided by the median (0 – high fitness concepts, 1 – low fitness concepts). The “Study” scale had eight items (Cronbach’s $\alpha=0.72$), e.g., “It is important to me to get good enough grades to reach a master’s degree” and “Courses which I take now are interesting.” Combined values dichotomously divided by the median (0 – important for me, 1 – not important for me). The “driving violations” scale had seven items (Cronbach’s $\alpha=0.68$), e.g., “I went through a stop sign without stopping full stop” and “I drove too close to the car in front

of me.” Combined values dichotomously divided by the median (0 – fewer violations, 1 – multiple violations). The “deviation and daring” scale had five items (Cronbach’s $\alpha=0.83$), e.g., “Shoplifting” and “Damage or marking public or private property on purpose.” Combined values dichotomously divided by the median (0 – low frequency, 1 – high frequency). The “smoking” scale had four items (Cronbach’s $\alpha=0.62$), e.g., “Cigarette smoking experience” and “Average number of cigarettes per day.” Combined values dichotomously divided by the median (0 – low, 1 – high). The “alcohol and its complications” scale had 13 items (Cronbach’s $\alpha=0.73$), e.g., “Experience getting drunk” and “I got in trouble with my parents due to alcohol.” Combined values dichotomously divided by the median (0 – less, 1 – more). The “cannabis” scale had five items (Cronbach’s $\alpha=0.74$), e.g., “Experience of cannabis (hashish/marijuana)” and “Frequency of use.” Combined values dichotomously divided by the median (0 – less, 1 – more). The “other drugs” scale had four items (Cronbach’s $\alpha = 0.82$), e.g., “Cocaine (coke) or crack cocaine” and “Ecstasy (MDMA, X).” Combined values dichotomously divided by the median (0 – narcotics low frequency, 1 – narcotics high frequency).

Data analysis

In order to examine the data and in order to perform various analyses in this study, the IBM SPSS Statistics 21 program was used. Table 1 presents descriptive statistics of the distribution of frequencies through a frequency command. Table 2A–2E present the cross-tabulation frequency, examining significance by chi-square to explore variable independence and differences between groups. Table 3 includes multiple variables from

Table 2B. Prevalence and probability of academic dishonesty based on variables related to personal perceptions.

Measure	Value	Reported academic dishonesty	Reported not cheating	Odds ratio (OR)	Significance (CI)
Self-image – 5 items ($\alpha=0.66$ ***)	Low self-image	36.3%	63.7%	1.60	2.08, 1.23
	High self-image	26.2%	73.8%		
Thrill seeking – 5 items ($\alpha=0.69$ **)	High thrill seeking	35.1%	64.9%	1.39	1.81, 1.07
	Low thrill seeking	27.9%	72.1%		
Initial symptoms of attention disorders – 6 items ($\alpha=0.71$ ***)	High symptoms frequency	36.3%	63.7%	1.57	2.04, 1.21
	Low symptoms frequency	26.6%	73.4%		
Expectations for the future – 6 items ($\alpha=0.80$ *)	Low expectations of future	33.5%	66.5%	1.28	1.67, 0.98
	High expectations of future	28.2%	71.8%		
Ethics and tolerance of deviance – 7 items ($\alpha=0.74$ ***)	I think it's okay	46.8%	53.2%	2.90	3.81, 2.20
	I think it's not okay	23.3%	76.7%		
Concern about security situation – 5 items ($\alpha=0.63$ *)	High	34.5%	63.5%	1.35	1.76, 1.04
	Low	28.0%	72.0%		
Mental health – 5 items ($\alpha=0.65$ **)	Poor mental health	36.4%	63.6%	1.47	1.91, 1.13
	Good mental health	28.0%	72.0%		
Perceived fitness – 4 items ($\alpha=0.86$ *)	Low perceived fitness	33.6%	66.4%	1.26	1.64, 0.97
	High perceived fitness	28.6%	71.4%		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.0001$.

Table 2C. Prevalence and probability of academic dishonesty based on variables related to academic studies.

Measure	Value	Reported academic dishonesty	Reported not cheating	Odds ratio (OR)	Significance (CI)
Grade average***	Low average (84 or less)	38.4%	61.6%	1.79	2.33, 1.38
	High average (above 84)	25.8%	74.2%		
Academic stress **	Quite a lot of stress or more	33.5%	66.5%	1.45	1.98, 1.09
	Only a little or not at all	25.5%	74.5%		
Hours of studies or preparing homework or assignments in free time	Six or more hours a week	34.5%	65.5%	1.41	1.82, 1.08
	No more than five hours a week	27.2%	72.8%		
Attitude toward studies – 8 items ($\alpha=0.72$ ***)	Not important/do not agree	38.2%	61.8%	1.64	2.13, 1.26
	Important/agree	27.4%	72.6%		

** $p < 0.01$; *** $p < 0.0001$.

19 different domains used to predict academic dishonesty. In order to reduce the variable load, scales were constructed by subject using factor analysis, after examining the reliability between items by Cronbach's alpha and any changes resulting from the addition or omission of items. This table presents the values of cross-frequencies by cross-tabulation frequency, chi-square analysis of differences between groups, and a risk measure for determining the risk ratio for academic

dishonesty. Variables with a low Cronbach's alpha are presented separately. All the variables were dichotomized to examine the risk ratio by the median value of each variable. The analysis was based on a stepwise hierarchical regression to locate the most influential variables on the predicted variable of academic dishonesty.

Table 2D. Prevalence and probability of academic dishonesty based on variables related to risk behaviors.

Measure	Value	Reported academic dishonesty	Reported not cheating	Odds ratio (OR)	Significance (CI)
Driving violations – 7 items ($\alpha=0.68$)***	Multiple violations	44.7%	55.3%	1.94	2.67, 1.40
	Few violations	29.4%	70.6%		
As a driver, I was at fault for a traffic accident*	The accident was my fault	40.8%	59.2%	1.55	2.35, 1.02
	The accident was not my fault	30.8%	69.2%		
Deviance and daring – 5 items ($\alpha=0.83$)***	High prevalence	61.4%	38.6%	4.20	6.29, 2.81
	Low prevalence	27.4%	72.6%		

** p<0.01; ***p<0.0001.

Table 2E. Prevalence and probability of academic dishonesty based on variables related to health risks.

Measure	Value	Reported academic dishonesty	Reported not cheating	Odds ratio (OR)	Significance (CI)
Nutrition – snacking instead of regular meals**	Some or most of the time	33.6%	66.4%	1.49	1.99, 1.11
	Nearly not	25.4%	74.6%		
Nutrition – drinking energy drinks (such as Red Bull or XL or Shos)**	Not regularly to always	37.4%	62.6%	1.45	1.94, 1.09
	Never	29.1%	70.9%		
Nutrition – drinking sweetened drinks (not diet)***	Rarely to always	35.3%	64.7%	1.58	2.06, 1.20
	Never	25.7%	74.3%		
Smoking – 4 items ($\alpha=0.62$)*	High smoking measure	41.8%	58.2%	1.69	2.59, 1.10
	Low smoking measure	29.8%	70.2%		
Alcohol and its complications – 13 items ($\alpha=0.73$)***	High degree of alcohol and its complications	39.6%	60.4%	2.11	2.83, 1.57
	Low degree of alcohol and its complications	23.6%	76.4%		
Cannabis – 5 items ($\alpha=0.74$)***	High use of cannabis	38.2%	61.8%	1.67	2.28, 1.23
	Low use of cannabis	26.9%	73.1%		
Other drugs – 4 items ($\alpha=0.82$)***	High use of drugs	51.4%	48.6%	2.47	4.21, 1.45
	Low use of drugs	30.2%	69.8%		
Experience with Ritalin***	Ever used	39.5%	60.5%	1.65	2.20, 1.24
	Never	28.3%	71.7%		
Use of non-prescription Ritalin*	Nonprescription Ritalin	45.1%	54.9%	1.85	3.26, 1.05
	Prescribed Ritalin or no Ritalin	30.7%	69.3%		
Sexual partners throughout lifeNS	More than two	34.0%	66.0%	1.23	1.66, 0.91
	Up to two partners	29.4%	70.6%		
Sexual partners in the last month*	More than one sex partner	43.5%	56.5%	1.67	2.75, 1.01
	One sex partner at the most	31.5%	68.5%		

* p<0.05; ** p<0.01; *** p<0.001; NS – non-significant.

Table 3. Stepwise logistic hierarchical regression for predicting academic dishonesty (OR).

Area	Variables	Step 9 (OR)
Sociodemographic variables	Gender Marital status Religion Sexual identity	
Personal perceptions	Self-image	1.480*
	Thrill seeking	
	Attention disorders	
	Future expectations	
	Ethics	2.338***
	Security	
	Mental health	
Academic studies	Grades	1.984***
	Academic stress	
	Time for homework	2.075***
	Study experience	
Risk behaviors	Driving violations	1.441
	Accident fault	
	Deviance and daring	2.687***
Health risk	Nutrition 1	1.344
	Nutrition 2	
	Nutrition 3	
	Smoking	
	Alcohol	
	Cannabis	
	Other drugs	1.289
	Ritalin experience	
	Non-prescribed Ritalin	
	Partners in lifetime	
Partners in month		
Adjusted R ²		18.7%
N		487

* p<0.05; *** p<0.001.

Results

The first research question deals with the prevalence of academic dishonesty reported by students. Based on the findings received from more than 1100 students, dishonesty is not a marginal event evident among a small proportion of students; rather, it was displayed by more than one quarter of the sample. Of all students examined, 27.1% reported cheating on assignments or homework at least once in the last month. Cheating on tests was less common, and 12.5% reported having done so at least once in the last month. The highest prevalence (three times or more) was evident among a larger proportion for cheating on assignments or homework than for cheating on tests (5.3% versus 1.3%, respectively).

The second research question deals with the difference between the prevalence of cheating on homework and cheating on tests. The question is to what degree are these two phenomena related, i.e., are they performed by the same people? Do those who cheat on tests also cheat on homework, and vice versa?

The findings indicate, significantly (p<0.001), that 64.5% of the students who reported cheating on tests also reported cheating on assignments and homework, versus 35.5% who cheated on tests but did not cheat on assignments or homework. Similarly, of the students who reported cheating on assignments or homework, nearly 30% also reported cheating on tests. Hence, the behavior of cheating on tests is less prevalent, and indeed many more students reported cheating on assignments or homework but not on tests (about 70%) compared

with the opposite situation where students reported cheating on tests but not on assignments or homework (about 6%).

The third research question deals with typical characteristics of the “academic offender”:

- **Personal characteristics** (gender, age, marital status, and religiosity): Table 2A.
- **Personal perceptions** (self-image, thrill seeking, attention disorders, expectations for the future, ethics and deviance, security situation, mental health, perceived fitness): Table 2B.
- **Academic studies** (grade average, academic stress, hours devoted to studies or preparing homework or assignments (beyond class time), and attitude to studies: Table 2C.
- **Risk behaviors** (driving violations, driver at fault for accident, deviance and daring): Table 2D.
- **Health risks** (nutrition, smoking, alcohol, cannabis, other drugs, experience with Ritalin and nonprescription Ritalin, and sexual partners): Table 2E.

The findings presented in Table 2A show a positive and significant association between dishonesty and being male (35.9%), single or divorced (33.8%), less religious (32.3%), and students who define their sexual identity as not heterosexual (44.0%). No significant association was found in the distribution of academic dishonesty by age. Of these variables, the highest odds ratio (OR=1.74) was found among those who define their sexual identity as not heterosexual (homosexual and bisexual or other than heterosexual). The odds of academic dishonesty were found to be 1.52 times higher among single and divorced students than among married students.

Table 2B presents the prevalence and probability of academic dishonesty based on variables related to personal perceptions: self-image, thrill seeking, attention disorders, expectations of the future, ethics and deviance, security situation, mental health, and perceived fitness.

The findings presented in Table 2B show a positive and significant association between academic dishonesty and each of the variable scales. The prevalence of cheating on tests was found to be higher among students who ranked their self-image as low (36.3%) than among those who ranked their self-image as high (26.2%), and among those seeking a thrill (35.1%) than among those less thrill seeking (27.9%). Students with higher scores for symptoms of attention disorders also showed a higher prevalence of cheating (36.3%) than students with a low score for symptoms of attention disorders that cheat in their studies (26.6%). Students with lower expectations for the future reported a higher prevalence of academic dishonesty (33.5%) than students with high expectations of the future (28.2%). Students who think that it is okay to display deviant behaviors and show poor ethics also displayed more academic dishonesty (46.8%) than students who do not think it is okay

(23.3%). Moreover, students who have high concerns about the security situation (34.5%), show poor mental health measures (36.4%), and have low perceived fitness (33.6%) had a higher prevalence of academic dishonesty than students who are less concerned about the security situation (28.0%), and have good mental health (28.0%) and high perceived fitness (28.6%). Of the various measures of these variables, the highest odds ratio (OR=2.90) was found among those with a low measure of ethics and high tolerance for deviant behaviors. Moreover, students with a low self-image had a 1.60 chance of cheating in their studies compared with students with a high self-image. The odds ratio is also higher for academic dishonesty in the case of students with symptoms of attention disorders (OR=1.57).

Table 2C presents the prevalence and probability of academic dishonesty based on variables related to academic studies: grade average, academic stress, hours devoted to studies or to homework and assignment preparation (beyond school hours), and attitude about studies.

Table 2C also indicates positive and significant associations between academic dishonesty and various variables relevant for academic studies. The prevalence of cheating on tests was found to be higher among students with a lower grade average (38.4%) than among students with higher grades (25.8%), among those who report high academic stress (33.5%) than among those who report lower stress (25.5%), among those who devote more of their free time to their studies (34.5%) than among those who spend less time (27.2%), and among those who perceive their attitude toward their studies as less positive (38.2%) than among those who perceive their studies more positively (27.4%). Of the various scales of these variables, a higher odds ratio for academic dishonesty was found among those who received low grades (OR=1.79) and whose study experience was less positive (OR=1.64).

Table 2D presents the prevalence and probability of academic dishonesty based on variables related to risk behaviors: driving violations, driver at fault for accident, deviance, and daring.

Table 2D as well indicates strong and significant positive associations between academic dishonesty and variables related to risk behaviors. The prevalence of cheating on tests was found to be higher among students with many driving violations (44.7%) than among those with few driving violations (29.4%), among those who had caused an accident (40.8%) than among those who were involved in an accident not of their own fault (30.8%), and among those who reported more behaviors of deviance and daring (61.4%) than among those who showed a low prevalence of deviance and daring (27.4%). Of the variables in the table, the highest odds ratio for academic dishonesty (OR=4.20) was found among those

showing a higher prevalence of deviance and daring behaviors. Students with traffic violations had a 1.94 times higher chance of cheating on tests.

Table 2E presents the prevalence and probability of academic dishonesty based on variables related to health risks: unhealthy nutrition practices, smoking, alcohol, cannabis, other drugs, experience with Ritalin and non-prescribed Ritalin, and sexual behavior.

Similar to the previous tables, Table 2E shows that academic dishonesty has strong and significant positive associations with health risk behaviors. The prevalence of cheating on tests was found to be higher among students who devote less attention to healthy nutrition, who show various complications related to excessive alcohol consumption (39.6%), and who use cannabis (38.2%), other drugs (51.4%), and non-prescription Ritalin (45.1%), versus those who pay more attention to healthy nutrition, show fewer alcohol-related complications (23.6%), and have not used cannabis (26.9%) or other drugs (30.2%) or prescription Ritalin (30.7%). It also appears that students who had multiple sex partners during their lifetime (34.0%) and in the last month (43.5%) reported a higher prevalence of academic dishonesty than those who had few sexual partners in life (29.4%) or in the last month (31.5%). Of the variables in the table, the highest odds ratios for academic dishonesty were found among those who used drugs (OR=2.47), who reported various complications following unrestricted drinking of alcohol (OR=2.11), and who used non-prescription Ritalin (OR=1.85).

Based on the findings presented in Table 2A–2E, in confirmation of our hypotheses, it is clearly evident that students show a higher prevalence of academic dishonesty when they have more negative personal perceptions; a more negative attitude toward their studies; are more involved in risk behaviors of deviance, daring behaviors, and driving violations; and engage in substance use.

The fourth research question deals with the weight of each of the features mentioned (personal characteristics, personal perceptions, academic studies, risk and health risk behaviors) in predicting academic dishonesty. In order to explore this question, a stepwise logistic regression analysis was performed to predict academic dishonesty through the different variables. Table 3 presents the findings of this analysis. The dependent variable “academic dishonesty” is comprised of a combination of the variables of cheating on tests and cheating on assignments or homework. The hierarchical logistic regression included nine stages as follows:

- Stage 1: Sociodemographic variables
- Stage 2: Personal perceptions

- Stage 3: Sociodemographic variables + personal perceptions (significant variables only)
- Stage 4: Academic studies
- Stage 5: Sociodemographic variables + personal perceptions + academic studies (significant variables only)
- Stage 6: Risk behaviors
- Stage 7: Sociodemographic variables + personal perceptions + academic studies + risk behaviors (significant variables only)
- Stage 8: Health risk
- Stage 9: The final model: sociodemographic variables + personal perceptions + academic studies + risk behaviors + health risk (significant variables only).

In Table 3, the ninth and final step of the analysis included all the variables found significant for predicting the dependent variable of academic dishonesty in the previous stages. Of all the variables examined in the study, the most significant predictors of academic dishonesty were self-image (OR=1.480), ethics (OR=2.338), grades (OR=1.984), homework time (OR=2.075), and deviance and daring behaviors (OR=2.687). These variables explained 18.7% of the variance. In conclusion, the table indicates that students with a low self-image, poor ethics, low grades, who devote many hours to their studies, and who are involved in deviance and other daring behaviors have higher odds of being involved in academic dishonesty than students with a high self-image, high grades, not particularly many hours devoted to studies, and who are less involved in risky and daring behaviors. In the bottom line, these were the most significant predictors of academic dishonesty.

Discussion

This study examined the characteristics of students who report academic dishonesty (on tests or homework) and attempted to characterize the types prone to committing academic offenses and to discover to what degree they are “normative” or representative of the average student. The research population included a sample of undergraduate university students. The participants consisted of 1432 students, constituting 20% of all undergraduate students, in a variety of disciplines: health sciences, natural sciences, social sciences and humanities, engineering, and architecture. The estimated response rate was about 90%, and of all respondents 899 were women (63%) and 533 were men (37%). The mean age of the sample was 27 years.

The first research question dealt with the prevalence of academic dishonesty as reported by students. The prevalence of academic dishonesty was found to comprise more than one quarter of the sample: 27% of the students reported cheating on assignments or homework at least once a month, and

12.5% reported cheating on tests at least once a month. Not only was cheating on home assignments or homework more common than cheating on tests, but also the highest frequency of doing so (three times or more) was evident among a larger proportion (5.3% versus 1.3%, respectively). Hence, this is not a marginal occurrence among students; rather, it shows considerable presence as a characteristic of a large minority that constitutes a not inconsiderable part of the student mainstream. This raises the question of whether there is any point in requiring students to perform assignments or homework if the process is not controlled and not under the direct supervision of the lecturers, particularly in the current generation when knowledge can be easily obtained and distributed. Namely, lecturers who require assignments and homework for courses but do not supervise the student's work process may be encouraging dishonesty and missing out on their goal. Practicing at home is obviously important for many subjects and contents, and lecturers find it hard to forego this technique considering the existing class load throughout the semester, but they must also supervise the process, for example, by encouraging thinking through oral questions in class in order to find out to what degree the students processed the material at home on their own or simply copied it.

The second research question dealt with the difference between the prevalence of cheating on homework and cheating on tests, with the purpose of examining to what degree these two practices are related, i.e., do those who cheat on tests also cheat on homework and vice versa? To what degree are these practices performed by the same people? A significant finding was that 64.5% of students who reported cheating on tests also reported cheating on assignments and homework, versus 35% who reported cheating on tests but did not cheat on assignments or homework. Similarly, of the students who reported cheating on assignments or homework, nearly 30% also reported cheating on tests. Thus, the behavior of cheating on tests is less prevalent and may require more daring than cheating on assignments and homework, which is more common. Furthermore, many more students reported cheating on assignments or homework but not on tests (70%) than the opposite situation of students who reported cheating on tests but not on assignments or homework (6%). As the PBT suggested, these behaviors are connected [24,26].

This finding also emphasizes the issue of homework as an assessment tool, but the finding requires examination of the relationship between the learning outputs aimed for, in order to advance the students, the manners of assessment, and the ways of teaching and assessment [31]. It is possible that in the digital era, when everyone is connected and everyone has access to the internet, individual homework is a challenge that students are not up to. It is contrary to their networked environment that is typical of a considerable part of their life.

Perhaps instead of turning them into criminals, it would be better to adapt the assignments to the language they use.

The third research question branched out into several areas and dealt with the characteristics of the "academic offender" type. With regard to **personal characteristics**, a significant association was found between academic dishonesty and gender (more prevalent among men [36%] versus women [29%]), marital status (more prevalent among singles and divorced [34%] versus married students [25%]), religiosity (more prevalent among the more secular [32%] versus the more religious [30%]), and sexual identity (more prevalent among homosexuals and bisexuals [44%] versus heterosexuals [31%]). This study found no association between academic dishonesty and students' age, calculated by the median value in the sample.

With regard to **personal perceptions**, the findings indicate a positive significant association between academic dishonesty and personal perceptions: self-image, thrill seeking, attention disorders, expectations for the future, ethics and deviance, security situation, and mental health.

Odds ratios nearly 3 times higher were found among those with a low ethics scale and higher tolerance of deviant behaviors. Furthermore, those with a low self-image have a 1.60 chance of academic dishonesty versus those with a high self-image. The odds ratio for academic dishonesty was also higher for those with symptoms of attention disorders (OR=1.57).

With regard to variables related to **academic studies**, positive and significant associations were found between academic dishonesty and various variables relevant for academic studies: grade average, academic stress, time devoted to studies or to preparation of homework or assignments, and attitude toward studies. Of the various scales for these variables, a higher odds ratio for academic dishonesty (1.79) was found among those who receive low grades and whose study experience is less positive (1.64).

With regard to risk behaviors, strong significant and positive associations were found between academic dishonesty and various variables related to risk behaviors. (1) There was more dishonesty among students with many driving violations (45%) than among those with few driving violations (29%). (2) There was more dishonesty among students who caused an accident (41%) than among those who were involved in an accident that was not their fault (31%). (3) Academic dishonesty was reported more by students with more behaviors of deviance and daring (61%) than among those who showed a low prevalence of deviance and daring (27%). Of the different variables in Table 2d, the highest odds ratio for academic dishonesty (4.20) was found among those who displayed a higher prevalence of deviant and daring behaviors. Traffic offenders had a 1.94 times higher chance of cheating on tests.

With regard to **health risk** variables, academic dishonesty was found to have strong and significant positive associations with health risk behaviors: unhealthy nutrition practices, smoking, alcohol, cannabis, other drugs, experience with Ritalin and non-prescription Ritalin, and sexual behavior. The prevalence of cheating on tests was found to be higher among students who pay less attention to healthy nutrition, who display various complications related to excessive alcohol consumption (40%), and who use cannabis (38%), other drugs (51%), and non-prescription Ritalin (45%) than among those who pay attention to healthy nutrition, show fewer alcohol-related complications (24%), and have no experience with cannabis (27%), other drugs (30%), or prescribed Ritalin (31%). Furthermore, it appears that those who have had multiple sexual partners throughout their lifetime (34%) and in the last month (43.5%) reported a higher prevalence of academic dishonesty than those who had few sexual partners throughout their life (29%) and in the last month (31.5%). Of the different variables in Table 2E, the highest odds ratio for academic dishonesty was found among those who use drugs (OR=2.47), report various complications as a result of excessive alcohol consumption (OR=2.11), and use non-prescription Ritalin (OR=1.85).

The fourth research question deals with the weight of each of the features stated (personal characteristics, personal perceptions, academic studies, risk behaviors, and health risks) in predicting academic dishonesty. A stepwise logistic regression analysis for predicting academic dishonesty according to the different variables showed that in the final model, the most significant variables for predicting academic dishonesty are self-image (OR=1.480), ethics (OR=2.338), grades (OR=1.984), time devoted to homework (OR=2.075), and deviant and daring behaviors (OR=2.687). These variables explain 18.7% of the variance. In conclusion, students with a low self-image, poor ethics, low grades, who devote many hours to their studies, and are involved in deviant and daring behaviors have the highest chance of being involved in academic dishonesty. Ultimately, these were the predictors found most significant for academic dishonesty from among dozens of variables in different areas of life. These findings add significantly to the research literature, by linking academic dishonesty to various behaviors in different spheres.

Academia is under a great deal of criticism for its admission terms and because of the claim that the exams students must pass in order to be accepted (usually psychometric and matriculation) often do not reflect their degree of academic success. The current study adds an important aspect that should perhaps be considered before admitting students, and this is the ethics and involvement of candidates in risky and daring behaviors. This matter should be translated into monitoring, supervision, and support within the institution. It should not necessarily be added to the admission terms; however, if

candidates are found to have clear characteristics predisposing them to dishonesty, an appropriate setting for their needs should be designated. This setting should take their tendencies into consideration, together with close and supervised support that will help change the problematic behavior and reduce further academic dishonesty.

Accordingly, this study voices two essential recommendations: One is to examine the ethics of candidates and their involvement in risky and reckless behaviors before admitting them to studies in the department. The second is to form an academic environment that nurtures ethics and monitors immorality. For example, by increasing the number of supervisors during tests and by photocopying and promptly addressing disciplinary and cheating offenses, lecturers would be given the tools to handle cheating and immediate and long-term sanctions would be established as an institutional surveillance system.

The purpose of the current study was to try and characterize students who report academic dishonesty (in exams or in homework). Which types are prone to academic offenses? To what degree are they “normative,” and do they represent the average student? Both the research literature and the research findings show a complex picture: On one hand, the type prone to disciplinary offenses is certainly “normative” and represents the average student. These students are part of the policy of making higher education more accessible, which is opening the gates to populations previously barred from higher education. They live in a technological world and they are more daring, as future “idols.” On the other hand, types prone to disciplinary offenses are not “normative” and do not represent the average student. Students with a low self-image, poor ethics, low grades, who devote many hours to their studies, and who are involved in deviant and reckless behaviors have a higher chance of being involved in academic dishonesty than students with a high self-image, high ethics, high grades, who do not devote many hours to their studies, and who are less involved in risky and reckless behaviors.

The system of higher education must address these two aspects of the new disciplinary “offenders”: On one hand, the system must determine learning outcomes and assessments accordingly and address manners of instruction and manners of assessment that are appropriate for current day students and compatible with the technological environment and the attitude of Generation Y students. Only this type of approach will prevent a situation of inadvertent “offenders” who do not understand and internalize the issue of behavior norms that involve dishonesty, as some of these behavior norms are perceived by them as tools or as a language.

On the other hand, the system of higher education must determine ways of addressing students’ personality aspects even

before they reach academic studies, and there are ways of detecting low self-image, poor ethics, low grades, devoting many hours to studies, and involvement in deviant and reckless behaviors. Examples include requesting recommendations, reviewing IDF discharge papers that refer to the human factor, and adding to the application form questions that can illuminate the subject.

Conclusions

The research findings confirm our hypotheses. It is clearly evident that students with more negative personal perceptions, a more negative attitude to academic studies, a more negative study experience, who are more involved in deviant and

daring behaviors and driving violations, and who engage in substance use show a higher prevalence of academic dishonesty versus students with more positive personal perceptions, a more positive attitude toward academic studies, a more positive study experience, who are less involved in deviant and daring risk behaviors and driving violations, and who do not engage in substance use.

This study is based on a case study of a single academic institution, in which participants showed a high response rate both to sensitive questions and to non-sensitive questions, and it illuminates the phenomenon of academic dishonesty and ways of dealing with it. There is room for further research comparing different types of institutions of higher education.

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