

الغش في الامتمانات بكلية التربية البدنية بطرابلس

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مستخلص:

المقدمة: الغش في الامتحانات لا يقوض فقط موثوقية وصحة الامتحانات بل الاعتماد البرامجي

لاي جامعة. مثل هذه الممارسات الخاطئة لطلبة تعتبر مصدرقلق لأعضاء هيئة التدريس بقسم اعادة التأهيل والعلاج الطبيعي بكلية التربية البدنية وعلوم الرياضة جامعة طرابلس لتأثيراتها السلبية علي العملية التعليمية ومستقبل ممارسة مهنة العلاج الطبيعي واعادة التأهيل.

هدفت هذه الدراسة لتقدير مدي انتشار ظاهرة الغش ضمن طلبة القسم وتحديد العوامل المحتملة لحدوثها.

طريقة البحث: دراسة مسحية مقطعية مبنية علي استبيان اجريت خلال الفترة من يناير الي ابريل 2 وشملت 120 طالب تم اختيارهم عشو ائيا.

موثوقية الاستبيان التي استخدم في هذه الدراسة تم ضمانها بعامل كرونباخ 0.8 تم استخدام برنامج الحزمة الاحصائية للعلوم الاجتماعية لمعالجة البيانات احصائيا.

النتائج: معدل الاستجابة للاستبيان وصل الي 92%. بينت هذه الدراسة ان 45% من طلبة القسم مارسوا الغش في الامتحانات. كما اظهرت ان الطلبة الذين مارسوا الغش في

المدارس الابتدائية و الثانوبة و الطلبة لأمهات يحملن شهادات جامعية والطلبة الذين

عقبوا في الجامعة بسبب الغش والطلبة في الفصول الدراسية المتقدمة اكثر عرضة للغش في

الامتحانات. 82% من الطلبة يرون ان الغش في الامتحانات ظاهر شائعة و47% من المشاركين بينوا ان القضاء على هذه الظاهرة صعب.

الاستنتاجات. ان ظاهرة الغش في الامتحان شائعة بين طلبة القسم و ان هناك علاقة معنوية بين هذه

الظاهرة وكل من: المستوي التعليم يلأم الطالب والطالبة وتجربة الغش في المرحلة الابتدائية والثانوية والعقوبة بسبب الغش في المرحلة الجامعية والفصل الدراسي الجامعي للطالب.

قدمت هذه الدراسة العديد من التوصيات لتعزيز النزاهة الاكاديمية. نتائج هذه الدراسة يمكن الاستعانة

بها لإصلاح نظام التعليم بما في ذلك وضع لائحة جديدة لتنظيم التعليم العالي. الكلمات المفتاحية: الغش في الامتحانات ،ليبيا، النزاهة الاكاديمية.



Cheating on Examinations Among Students of the department of rehabilitation and physiotherapy at University of Tripoli - Libya

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Abstract:

Background: Cheating in examinations undermines not only the reliability and validity of examinations but also the programmatic accreditation of any university.

Examination malpractice among students of the department of rehabilitation and physical therapy in faculty of physical education and sport sciences at university of Tripoli, is a provenance of logical concern to faculty members because of its negative impact on learning process and future practice of rehabilitation and physical therapy.

This research aims to estimate the prevalence of cheating in examinations and identify its predictors among students of the department.

Methods: A survey-based cross sectional study was conducted from January through April 2023.

120 students completed confidential self-report questionnaires addressing cheating in exams and background demographics.



The reliability of the main instrument of this study was ensured with Cronbach's α coefficient of 0.8. Data were subjected to statistical analysis by using SPSS version 22.0 Descriptive analysis was used for data presentation .Degree of association was assessed by odds ratio,chi square test and bi-variate logistic regression.

Results:

The response rate was 92%. This study revealed that cheating in examinations was practiced by 45% of respondents.

Previous cheating in primary school (adjusted OR=5.52

,95% CI= 1.67–18.17)or high school (adjusted OR2.79= ,95% CI=1.11–7.03),university educational level of student's mother (adjusted OR=3.08 ,95% CI=1.20–7.87=) and punishment because of cheating at university (adjusted OR=9.88 ,95% CI=1,85–52.86) are strongly associated with current cheating in university. Moreover, students in early semesters were less likely to cheat (adjusted OR=0.79 ,95% CI=0.63–0.99).

82% of students disclosed that, cheating is a common phenomenon in the department.47% of participants declared that cheating in examinations is difficult to be eradicated.65% of students confessed that higher grades exclusively go to cheaters.

Conclusion:

Cheating in examinations is prevalent among our students. Additionally, punishment in university due cheating, cheating in primary school ,cheating in high school, student's mother's educational level and student's current semester are predictors to the current cheating in examinations at university. Accordingly several strategies that can promote academic honesty are outlined and areas



of further researches were proposed .Our findings would help in reforming the educational system of Libya ,curriculum development and establishment of strict academic integrity polices including new high education organizing regulations.

Keywords: Cheating in examinations, Academic dishonesty, survey, Libya, physical-therapy students.

1.Introduction

Cheating on examinations is a worldwide problem that is neither unique to a specific educational level nor to any educational course.^{1–5} Academic cheating can be defined as any intentional or unintentional dishonest act related to learning, researching or teaching whether it was carried out by students or instructors or researchers.^{6,7}

Such dishonest acts may include but not limited to prohibited usage (by academic regulations) during exams of devices or materials related to a course syllabus.

A student may resort to cheating because he is on pressure by his peers to do so, or he is anxious about his academic performance or just he emulates his colleagues or he is unable to mange a student–life workload.⁸

Moreover, the failure of an academic institution to explicate to newly enrolled students its academic bylaws including consequences of cheating or lack of serious enforcing of academic integrity standards or weakness of penalties for violating these standards may encourage a student to commit such opportunistic behavior and conceives that cheating is worth of the risk of being punished.⁹



cheating undermines the credibility of the education system and the social values such as fairness and honesty, leads to inaccurate assessment of academic performance of a student who could granted with undeserved graduate certificate .Such consequences can have serious practical concerns in the society when colleges and universities graduate incompetent alumni. When academic cheating occurs in higher education institutions of health science such as physical therapy it destroys the trust in health professionals and jeopardize patient's health. There is a common impression among academic community that cheating on examinations is a rampant phenomenon at all levels of educational process and became an accepted act by Libyan culture .Despite it is a real issue with serious consequences, it has not gained a proper amount of attention from academicians and national media.

The aim of this study is to estimate the prevalence of phenomenon of cheating on examinations and to investigate its potential predicting factors among students of the department of rehabilitation and physical therapy, faculty of physical education and sport sciences at University of Tripoli.

2. Methods

2.1. Study design

This observational study of cross-sectional survey design was conducted during the period between January 2023and April 2023.

2.2.Participants

All undergraduate students who were enrolled in the department of rehabilitation and physical therapy during the current semester; fall 2022–2023 were eligible for participation in this research. Those who



refused to give written consent and those who returned questionnaires with missing data were excluded from the present study.

Study level was used to stratify students ,then Stratified random sample size of 130 students was selected .after that participants were recruited through an announcement prior to the manual distribution of the questionnaires .The purpose of the study was explained. Written consent was taken from each participant. Moreover, confidentiality and anonymity were ensured in this study

2.3. Measurement instrument for cheating on examinations

The sample members asked directly to complete a set of two questionnaires. The first one collected data on personal, demographic sociocultural characteristics of participants such as current semester of study ,gender, age ,success grade in high school certificate ,parent's educational level, student's external work commitment, type attended, previous experience of cheating at schools of schools ,awareness of repercussions of cheating on examinations and personal belief about cheating. The second section contained the questionnaire of Akaranga and Ongong. 10 which was used as a main instrument for this research although a slight modification was made on the warding of some items before collection of data .It is a dependable measurement instrument consists of 20 items 11 was translated into Arabic language and adopted according to the international test commission guidelines for translating and adapting tests. 12 Participants were asked to answer each item as either agree or neutral or disagree.

2.4. Statistical analysis



In this research the misconduct of cheating on examinations was a dependent variable .On the other hand, independent variables were gender ,age, current semester of study, success grade in high school, mother's educational level, father's educational level ,type of earlier schools attended, previous experience of cheating ,awareness of penalties of cheating in exams and one's doctrine about cheating .Statistical package of social sciences(SPSS) statistics version 22.0 was used to analyze the collected data. Reliability of the questionnaire was pretested by conducting the item-total analysis and by computing the cronbach's alpha co-efficient.

The descriptive analysis was used to characterize responding students and to describe act of cheating on examinations among them. Inferential analysis was conducted to estimate bi-variate association between different variables using odds ratios(OR) and chi square test. Logistic regression was performed to identify the most important predictors of cheating on exams .A p value <0.05 was set as a significance level.

3.Results

3.1 The questionnaire response rate analysis In all, 120/130 (92%) of eligible students completed questionnaires, given written consent and were included in the study.

3.2 Reliability of the measuring instrument

Item-total analysis revealed that three questions had worst item-total correlations .When these questions were removed one by one from the scale ,the remaining items were internally consistent and the Cronbach's α coefficient of inter-item consistency improved from



0.78 to 0.81. The result made is that the instrument has a good level of reliability.

3.3 Descriptive analysis of the sociocultural and cheating related characteristics

The age of students ranged from 20 to 38 years, the mean age(± SD) was $23.6(\pm 2.8)$. Table 1 presents the sociocultural and cheating related characteristics of the participating students. Within the sample the majority of students (87%) obtained good or very good high school grades (Figure 1). More than one third of the respondents were enrolled in the last two semesters (Figure 2). Of students surveyed 41% had cheated in high school and only36% of high school cheaters punished for their dishonest act(Figure 3). On the other hand 45% (95%CI = 36-54) of students reported cheating in examination at university, three quarters of them were not subjected to any disciplinary action (Figure 4). Of the study participants (58%) thought that cheating in exams is a bylaw violation or an immoral act (Figure 5). About a half of the students of the department (51%) were reported that using of cheat sheets was the most common cheating behaviour that they experienced during their study life. Cheating by using new technologies of wireless communication such as mobile phone and earbuds were reported by only 19% of students (Figure 6).

3.4 Descriptive analysis of cheaters at university

The majority of students who engaged in cheating at university are males (74%). The vast majority of university cheaters (89%) were at or above the age of 21 years. The mean of their age (\pm SD) was 23(\pm 3).87% of them or more attended public schools. About 60% of



them passed high school with grade very good.58% of the cheaters were enrolled in the seventh and eighth semesters and 61% of them were employees.59% of mothers and 68% of fathers of those who admitted cheating at university got at least university education. The percentages of those who also engaged in cheating during primary, secondary and high schools were 37%,39%,,57% ,respectively. About one of three students who admitted to cheating at university was penalized because of cheating at high school. Of the cheaters at university 61% had an idea about the high education organizing regulation 501 (HEOR 501).

35% of the department cheaters regarded cheating in exams as a legal act and 19% of them perceived it to to be a violation to the HEOR 501. Table 2 summarizes the characteristics of students who committed cheating at university.

3.5 Inferential analysis

When the relationship between the cheating at university as a response variable and the potential risk factors were explored we found that:the odds of cheating in exams at university was 4.3 times among students who did cheat at primary school as compared with those who did not (unadjusted OR= 4.27, 95%CI = 1.70-10.73). Cheating at university was associated with cheating at high school as students who cheated earlier at high school are 3.6 folds more likely to cheat in exams during their university study (unadjusted OR= 3.60, 95%CI = 1.65-7.85).

Cheating at university was highly associated with students who were punished because of cheating at university, compared with those who were not (unadjusted OR= 10.15, 95%CI = 2.18-47.30).



The fact of being a student of highly- educated mother is a risk factor for cheating at university because for every 27 students of highly educated mothers who did not report cheating there would be 32 who reported cheating while for every 39 students of less-educated mothers who did not cheat there would be only22 who cheated (unadjusted OR= 2.10, 95%CI = 1.01-4.37). There was significant relationship ($x^2=14.96$, p < 0.05) and positive correlation (r=0.225, p < 0.01) between cheating at university and student's semester of study. Compared to students in sixth, seventh and eighth semesters the odds of cheating for students in third, fourth and fifth was 46% lower (unadjusted OR= 0.54, 95%CI = 0.25-1.15). Although the multi-collinearity problem was diagnosed it was not sever enough to require attention (VIF values < 5).Logistic regression was Conducted to determine how different independent variables affect a student's probability of cheating in exams at university. Predictor variables entered simultaneously into the logistic regression equation. The over all model was significant when all five independent variables:current semester,maternal education level, cheating at primary school, cheating at high school and punishment due to cheating at university were entered. The model explained41% of the variability and correctly predict cheating behavior of 83% of students.

Table 3 illustrates the Influence of the effective predictor variables on the likelihood of student's cheating at university.

- 3.6 Analysis of responses on the main questionnaire.
- 3.6.1 Internal factors which may cause cheating.
- 39 % of students disagreed with the idea that difficult exams may compel students to misconduct and cheat.



About one half of students(52%) disagreed with the statement that cheaters often pass an exam with out being caught.61% of students did not concurred with the opinion that failure is an inevitable consequence of not cheating.

The majority of respondents 91% disagreed with those who think that lack of self– confidence is a rationale cause to cheat. Considerable percentage of students 82% who were surveyed admitted that cheating is a common phenomenon. Only cheaters can get higher grades in examinations; about tow thirds (65%) of participating students agreed with this statement. 86% of students adopted the view that adequate preparation before a exam makes cheating unnecessary.

3.6.2 External factors which may justify cheating

63% of students did not justified cheating in examinations just by imitating their counterparts. The majority of students 89% asserted that even if their parents supported the idea of cheating in exams they would not do it. Only 9% of respondents perceived cheating as an acceptable behavior even if it satisfies cheater's parents and friends. Most parents persuade their children to cheat; this view of opinion were disagreed by 78% of students.

18% of students may recommends another student to cheat in difficult exams.

Of surveyed students only 22% agreed and 46% disagreed to the idea that cheaters get advantage over honest students. If students who studied over a long period of time are to be assessed once in a short time of examination then cheating is the only exit: 23% agreed while 53% disagreed. Only 14% of students can impersonate



another examinee.59%thought that they would pass an exam if its question paper leaked.Sitting purposely next to painstaking student(to copy from him or her) such act is perceived acceptable by43% of students.36% of students reported that some invigilators encourage some students to cheat.

47% thought cheating in exams is intractable problem, 27% they did not do.46% of students might resort to cheating if there was no proper teaching.

Table 1: Sociocultural characteristics of participating students and their reported cheating profiles

Characteristic	N(%)				
Gender	Female			Male	
	29 (24%)			91 (76%)	
Age	< 21		9 (8%)		2
	21		111 (92%)		
Type of primary	Public			Private	
school attended	107(89%)			13(11%)	
Type of secondary	Public			Private	
school attended	109 (91%))		11 (9%)	
Type of high					
school attended	Public			Private	
	110 (92%))		10 (8%)	
High school grade	Pass	Good	Very good	Excellent	
	3 (2%)	39 (33%)	65 (54%)	13 (11%)	
Semester of study					
3 rd		4 th		5 th	
12 (10%) 14 (12	2%)		19 (16%)		
6 th		7^{th}		8 th	



19 (16%)	28	(23%)	28 (2	3%)	
Students`s	Yes		No		
external work	64(53%)		56(47%)		
Maternal	Less than univers	sity	University or	more	
education level	61(51%)		59 (49%)		
	, ,				
Paternal	Less than univers	sity	University or mo	ore	
education level	43 (36%)	•	77 (64%)		
	(* * * * * * * * * * * * * * * * * * *		()		
Cheating during	Yes		No		
primary school	28 (23%)		92 (77%)		
	Punished No	ot punished			
	15(54%)	13 (46%)			
Cheating during	Yes		No		
secondary school	31 (26%)		89 (74%)		
	Punished	Not punished			
	15 (49%)	59 (49%)			
Cheating during	Yes		No		
high school	49(41%)		71 (59%)		
	Punished	Not punish	ed		
	18 (37%)	31 (63%)			
Cheating during	Yes		No		
university	54 (45%)		66(55%)		
	Punished	Not punishe	ed		
	13 (24%)	41 (76%)			
Awareness of	Yes		No		
HEOR 501	66 (55%)		54 (45%)		
One` belief about	Sin Crime	Violation	Immoral	Legal	
cheating in exams					
	26(22) 14(12)	35(29)	35(29)	10(8)	



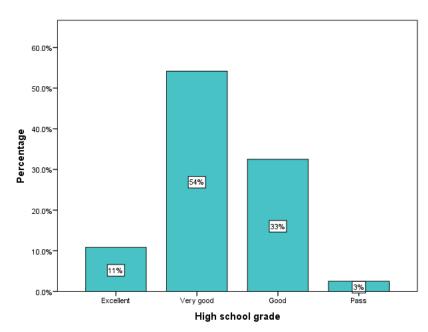


Figure 1. Distribution of participants according to student's grade in high school

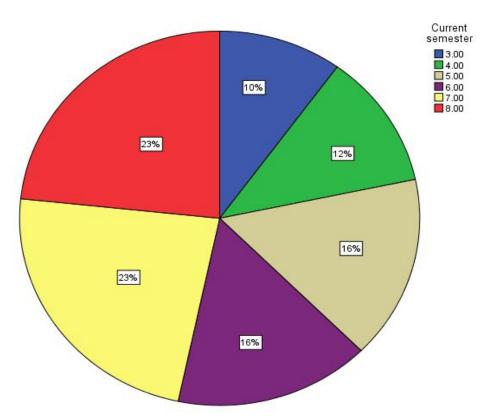


Figure 2. Distribution of students according to current semester of study



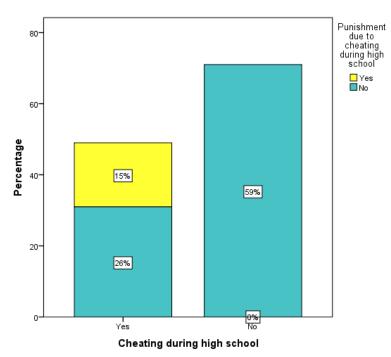


Figure 3. Self-reported cheating behavior at high school and its consequence

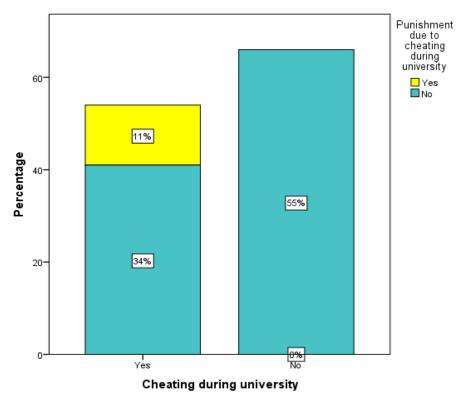


Figure 4. Engagment in cheating by participating students at university and its sequalae



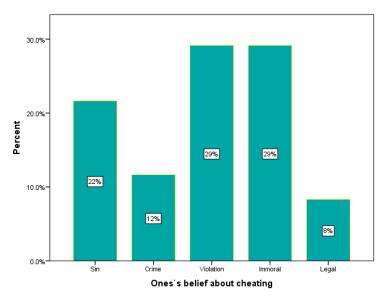


Figure 5. Different attitudes of students toward practice of cheating in examinations

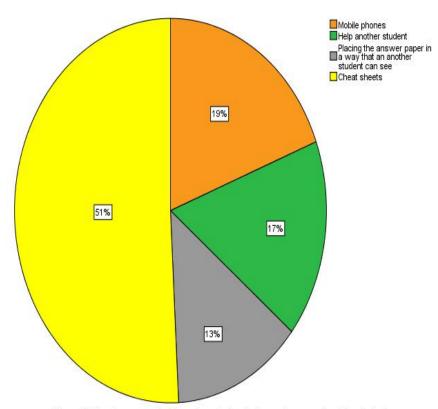


Figure 6. Cheating means that have heard about observed or practiced by students



Table 2: Characteristics of students who engaged in cheating at the university

Characteristic	N(%)				
Gender	Female		Male		
	14 (26%)		40 (74%)		
Age	≤ 20 6	(11%)	2		
	21 4	8 (89%)			
Primary school	Public		Private		
attended	49(91%)		5(9%)		
Secondary school	Public		Private		
attended	47 (87%)		7(13%)		
High school	Public		Private		
attended	47 (87%)		7(13%)		
High school grade	Pass Goo	d Very go	ood Excellent		
	3 (6%) 15 (2	28%)32 (59%)	4 (7%)		
Semester of study	3 rd	4 th	5 th		
	6 (11%)	5 (9%)	5(9%)		
	$6^{\text{th}} 7^{\text{th}}$	8 ^t	h		
	7 (13%)	10 (19%)	21 (39%)		
Students's external	Yes		No		
work	33(61%)		21(39%)		
Maternal education	Less than university		University or more		
level	22(41%) 32 (59		32 (59%)		
Paternal education	Less than university		University or more		
level	17 (32%)		37 (68%)		
Cheating during	Yes		No		
primary school	20 (37%)		34 (63%)		



Cheating during	Yes	No
secondary school	21(39%)	33 (61%)
Cheating during high	Yes	No
school	31(57%)	23 (43%)
	Punished Not punished	d
	10 (32%) 21(68%)	
Awareness of HEOR	Yes	No
501	33 (61%) 21	(39%)
Student's' belief	Sin Crime Violation Im	ımoral Legal
about cheating	11(20) 6(11) 19(35) 8(15) 10(19)

Table 3.Influence of maternal education level, cheating at primary school, cheating at high school and punishment due to cheating at university on cheating in exams at university among students of department of rehabilitation and physiotherapy at university of Tripoli

Variable	Total	N º of	Unadju	95% CI*	Adju	95% CI
	Nº	cheaters	sted		sted	
		at	OR*		OR	
		universit				
		у				
Cheating at	28	20	4.27	1.70-	5.52	1.67-
primary				10.73		18.17
school						
Cheating at	48	31	3.60	1.65-7.85	2.79	1.11-7.03
high school						
Punished	15	13	10.15	2.18-	9.88	1,85-
due to				47.30		52.86
cheating at						
university						

^{*}OR; Odds ratio,CI; Confidence interval



Mother`s	59	32	2.10	1.01-4.37	3.08	1.20-7.87
education						
level						
university or						
more						
Semester of	75	38	0.54	0.25-1.15	0.79	0.63-0.99
study						

4. Discussion

This research revealed that, prevalence of cheating among undergraduate students of the department of rehabilitation and physical therapy is 45% with confidence interval of (36,54). Such prevalence indicates that cheating phenomenon is common amid students of the department and if this prevalence reflects the ethics of our future physiotherapists then it should be an issue of concern as previous researches has found that students, who engage in cheating at university are more likely to cheat at work place. 13 However, this self reported rate of cheating was lower than what has been reported among students of the higher institute of sport and physical education of Sfax in Tunisia (70%) and more than that has been found among undergraduate students at Ethiopian Hawassa University college of medicine and health sciences (20%) and among students of different colleges at the United Arab Emirates University (38%). 14,15,16 Cheating was found to be related to the field of study. 15 Compared to students affiliated with the same health care programme (physical therapy) at the University of Toronto cheating was more rampant among our students. 17 There was a significant association between cheating at university and cheating during primary school. It seems that, this act of academic dishonest probably



begins early during student's academic career. ¹⁸Such relationship can be explained by that schools overlook cheating and are often hesitate to punish elementary school pupils with the excuse of their immaturity. ¹⁹Therefore students might continue to cheat.

Only 37% of students who admitted to cheating on examinations in high school have been punished because of that. Such low rate of punishment among high schools cheaters reinforce cheating later at university, as previous experience of punishment due to cheating might be deterrent for further cheating.²⁰ Past history of cheating at high school was a predictor of whether a student would cheat in university. This finding is consistent with earlier study included about four thousands medical students and found that cheating in high school exercised a large significant effect on student's cheating behavior in university. 21 This study revealed that punishment of students because of cheating in university was the best predictor of current cheating in university. Surprisingly, students who were punished were more likely to cheat. Presumably, due to the lack of deterrent and appropriate punishment. Earlier studies shown that educational institutions which properly implement the cheating related regulations have low prevalence of cheating.²²Our results indicate that students whose mothers were holders of university certificate tend to cheat in exams more than those whose mothers were not. Such effect of mothers educational qualification on student's tendency to cheat can be explained by that, mothers who had higher educational degrees had less time for their children to be involved in their children's study and respond to their adolescence. Such mothers will create negative behavior on their children and such children will



be less socially in component and resort to examinations.^{23,24}In present study, while we were investigating the academic dishonesty among our students based on student's semester of study we found that, advanced students were being less honest since later-semesters students were more likely to cheat than their colleagues in earlier semesters. This finding suggested that students become more daring and prone to cheat over time. This is in line with findings of two recent studies. ^{25,26} In contrast, Isakove and Tripathy found that, cheating is less likely among senior students.²⁷ When we discussed the perception of our students on cheating in examinations we found that: The ratio of cheaters to honest students was 8:10 despite the majority of students(92%) believed that cheating is an illegal act. Such contradiction was evident in the Tunisian study which have shown that most of students who cheated perceived the act of cheating as an immoral. 1445% of the study participants had not preceding knowledge regarding the HEOR 501. This percentage is an equivalent with the cheaters in the university. This might suggest that, student are not aware of academic organizing regulations including penalties of cheating in exams. Consequences of cheating should be illustrated to all students for there to be a change of behavior on the part of students who cheat.²⁸This study unveiled that the phenomenon of cheating in examinations among students of the department is common. As an overwhelming majority of the students with agreed the statement that cheating is а phenomenon. For every ten honest students there would be eight dishonest students. Such indices should not acceptable in the study field of physiotherapy, since graduated students will be health care



providers. When surveyed, considerable percentage of the department students(65%) agreed, that only cheaters can get high grades. It would seem that students justify this act of misconduct by a reckless desire to get higher marks in examinations . This paradox between the permissible desire and engaging in unethical act is called an ethical dissonance.²⁹The existence of this coping mechanism points out that genesis of cheating did begin in high school or even earlier.³⁰This inference can be supported by our finding of that 57% of the current cheaters in university admitted to cheating in high schools. If students were not taught well 46% of them would cheat with out any remorse .Blaming of cheating to some teachers is another coping mechanism used by students to preserve their sense of self-esteem. Nevertheless ,educators and institutions who provide fair and interesting environment for learning their students are less likely to cheat.³¹ It is difficult to get rid of cheating in examinations .This fact was the point of view of more than one third of students.If students are able to justify their act of misconduct of cheating in examinations and if they deem success to be obtaining high marks and not to attain knowledge then it would be difficult to change their moral compass and prevent them from continuing this mindset of cheating .Different approaches have been attempted by many institutions to reduce cheating in exams. However, success was elusive.32

5. Conclusion

In conclusion, cheating in examinations is actually, a widespread practice among students of the department. The number of cheaters



and non-cheaters in the department is roughly equal, though non-cheaters hold a slight lead with eight cheaters for ten non cheaters. This study elucidated that the current cheating at university is significantly associated with punishment at university due cheating, cheating in primary school, cheating in high school and student's mother's educational level .cheating at university was also

student's mother's educational level .cheating at university was also found to be linked to the student's semester. There was a consent of the vast majority of students with regard to the publicity of cheating in examinations. A considerable percentage of students confessed that only cheaters could get higher grades in exams. Furthermore, a notable number of students concurred with the fact that eradication of cheating in examinations is difficult. Likewise, feeling guilty because

of cheating will not be experienced by a considerable number of

students if the instructor does not teach properly.

In the light of this study and its discussed results, four factors influence cheating behavior among our students: experience already gained in cheating, desire for good grades or success, teaching and learning climate is not ideal and unenthusiastic punishment. Accordingly, we recommend the following: Firstly, multi-pronged deterrent approach should be adopted to fight this unethical behavior of cheating, in class rooms of primary, secondary and high schools. Secondly, there is a need to redefine the academic success to include not only the results but also the means. We may also need to replace the current educational system of credits and points by ungraded formative assessment which allows students to focus on learning of material instead of grades. Thirdly, improvement of teaching and examination environments by: (1) inciting students to learn effective study habits



and time management skills.(2) proper designing of course load and study materials (3)increase instructor quality and fostering faculty concern for teaching and cheating. (4) provide large examination halls and spacing students far apart during exams. (5) ensuring strict invigilation during exams(6) banning the use of digital technologies during exams.(7)use of cheaters detecting devices such as mobilephone detectors and signal-jammers. Fourthly ,Students should be aware of study and exams organizing regulations and penalties of exam irregularities. In this context, educational institutions should provide courses in academic integrity and ethics including the problem of cheating and its negative consequences. The university should publish the HEOR 501 and ensure accessible electronic access to it. In addition to that, punishment should be severe enough to deterring cheaters and new students should be encouraged to sign an honor code pledge. One of the unsettling shortcomings of this research is that social desirability bias might have introduced. Further researches needed to be conducted on this sensitive topic to follow up this growing problem and to understand its driving forces for instance, absenteeism from lectures and to investigate the effect of student's scholarship on student's cheating propensity.

Conflict of interest statement

The author and co-author have no competing interest concerning this study

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