Original Research Article

Predictors of Alcohol Abuse among University Students- A Case of a Kenyan University

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Abstract

Problem: Despite the growing problems of global alcohol abuse, accurate information on the prevalence of alcohol abuse among university students in Kenya is still inadequate. *Objective*: The study therefore aimed to determine the prevalence and socio demographic determinants of alcohol abuse among university students *Design.* The study design was a cross-sectional analytical, that utilized quantitative methods. *Setting:* The study was conducted in Kakamega County, located in Western Kenya. *Sample*: Stratified random sampling was utilized to select the study group. *Analysis:* Data was analyzed using SPSS version 25.0. Both descriptive and inferential statistics were used. Data presentation was done using frequency tables, charts and in narratives. The alpha level for all the computations was considered significant at an α <0.05. *Main outcome measures:* The Alcohol Use Disorders Identification Test questionnaire (AUDIT) was used to assess the prevalence of alcohol abuse *Results.* The participants included 112 students in year 1, 101 students in year 2, 80 students in year 3 and 162 students in year 4. Prevalence results showed that majority of the respondents (78.9%) claimed to have never taken a drink containing alcohol and most of the respondents (86.5%) were at low risk level of alcohol abuse with scores of between 0-7 in the AUDIT. The study found significant association between the prevalence of alcohol abuse and the year of study, marital status, family's economic status and the living arrangements (with whom). There was no significant association between the prevalence of alcohol abuse and age, course of study undertaken and place of residence. *Conclusion*: It was concluded that alcohol abuse is generally less prevalent among university students and is associated with year of study, marital status, family economic status and living arrangement. *Recommendation:* Based on the findings of this study, there is need to detect, strengthen various policies and programs and accordingly make changes to address the factors that contribute to alcohol abuse in the institutions of higher learning in Kenyan.
Keywords: Alcohol abuse, University students, prevalence, predictors, health promotion, mental health, Kakamega, Kenya.

INTRODUCTION

Alcohol abuse is defined as a disorder marked by recurrent alcohol abuse in spite of major adverse effects and is reflected with problems with work, law, health or family life (DSM IV, 1994). Prevalence of alcohol abuse is the proportion of a population found to abuse alcohol in a given general population. According to NACADA (2011), about 200,000,000 people worldwide abuse alcohol. It is evident that about 2 billion people globally take alcohol and 76.3 million are diagnosed with alcohol use disorders (WHO, 2004). But in many parts of the world alcohol is used as a socializing agent after work and is profoundly rooted in many cultures worldwide. Currently, changes are noticeable in drinking patterns worldwide that includes rates of alcohol abuse to excess in general population, with substantial sporadic alcohol abuse among young people (WHO, 2009), particularly between 15-24 years of age (Moreira, Smith, Foxcroft, & Moreira, 2009). Globally, 320 000 young people aged 15-29 years die annually, from alcohol-related causes, resulting in 9% of all deaths in that age group (WHO, 2011). Dantzer, Wardle, Fuller, Pampalone, & Steptoe. (2006) indicated that in USA 40% of adolescents take drugs and 60% consume alcohol while in Asia 48.9% of university students' use drugs, 24% being 1st years while 75.6% are final years and that Ireland had the highest proportions of male and female who abuse alcohol. Denzer and his colleagues further stated that peer pressure influence young people to use intoxicating substances with alcohol being the most abused which is a common feature among university students globally. In China, Cheng-Ye, Pei-Jin and Yi (2012), found out that alcohol abuse among university students was

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prevalent and that 80.8% were lifetime drinkers, 49.3% were current drinkers (drank alcohol in the past 30 days) and 23.5% were binge drinkers (drank five or more drinks in a period of 2 hours). Studies show that alcohol is the most frequently abused intoxicating substance among university students in Africa and it has been blamed for rapid economic, social, and cultural transitions that most countries in sub Saharan Africa are experiencing which created a good medium for increased alcohol abuse (John-Lengba, Ezeh, Guttella, Kumi. - Kyereme, & Neema, (2004). On one of the studies carried out on alcohol abuse, indicated that globally university students have a higher prevalence of alcohol abuse (Karama, Kypros, & Salamounc, 2007). Dantzer *et al*. (2006) indicated that in USA 40% of adolescents' abuse drugs and 60% abuse alcohol while in Asia 48.9% of university students' abuse alcohol, 24% being 1st years while 75.6% are final years and that Ireland had higher proportions of male and female who abused alcohol. The prevalence of risky alcohol abuse is greater in other continents, but is lesser in Africa and Asia (Karama, Kypros, & Salamounc, 2007).

A research done among university students in Ethiopia found that alcohol was the most abused substance, but there was little evidence available about the scale of substance use in the population (Fekadu, Atalay & Charlotte, 2007). In South Africa, a study among university students found that 75% of respondents abused alcohols with 50% of moderate to heavy drinkers being young men (Nkhoma & Maforah, 1994). In Malawi, the prevalence of alcohol abuse among university students showed that 54.1% were males and 16.5% were females (Zverev, 2008). Stafstrom and Agarth (2012) found out that almost half of the students in Mbarara University in Uganda were current alcohol users, and a quarter of them had engaged in heavy episodic drinking. Wakgari and Aklilu (2011) had earlier found that 31% of medical students of Addis Ababa University from first year to internship were life-time users of alcohol and 22% reported drinking alcohol in the past year. Alcohol abuse in the institutions of higher learning in Kenya threatens the achievement of vision 2030 and holistic wellbeing (GOK, 2012). According to NACADA (2007), the practice of alcohol abuse has developed to a point where it has become a culture and tradition rooted in every level of university environment and that practice is handed down through cohorts of alcohol abusers strengthen students' expectation that alcohol is a necessary factor for social success. Hagembe & Simiyu (2006) indicated that in Kenya, the society does not take alcohol abuse as a major problem in spite of the fact that many people suffer from conditions associated with alcohol abuse. Odek-Ogunde & Pande-Leak (1999) in a study reported a high rate of alcohol abuse among students at a Kenyan private university at 84%. JKUAT (2011) policy on alcohol and other substances in their institution showed that alcohol is readily available and accessible owing to the number of alcohols selling premises within its community with use of alcohol during staff and student functions.

The widespread of this problem resulted in the creation of NACADA by the government of Kenya which formed a policy to manage the problem. This may not be achieved very soon considering the porous boundary that Kenya has and the Police officers who are prone to corruption and can easily be bribed for illicit brew and contra band drugs which slip under their watch. Despite the growing problems of alcohol abuse more broad studies with organized approaches in the world, needs to be revised to produce representative results on alcohol abuse in university settings. Hence the study sought to determine the prevalence of alcohol abuse among university students with the ultimate aim to improve mental health.

METHODS
Study design
This study used a cross sectional research design since the data dealt with the effects of natural occurring phenomena (Tuchman, 1978). The design was also relevant since it entailed the collection of data on more than one case and at a single point in time in order to collect a body of data in connection with two or more variables which would then be examined to detect the patterns of association (Bryman, 2004). This study design was used since it allows two extensive data collection on a large population where direct observation by the researcher is not required.

Participants and recruitment
The population of the study was undergraduate students in year 1, 2, 3 and 4, both resident and non-resident students. The study population comprises of diverse ethnic background, religion, programmes and social economic status in Kakamega County. The exclusion criteria included post graduate students. Some post graduate students are lecturers while majority of others are working. Their time table was different to that of undergraduates hence the reason for not including them.

The study sample was selected using stratified random sampling. Using Steins method, the sample size of the students was determined. Stephan, (1945) suggested Stein's method which is based on the use of preliminary sample (Nassiuma, 2000). Therefore, the total sample size estimation was a total of 355 respondents. The study sample was selected using stratified random sampling technique based on records of those students in session at the Registrar Academic Affairs office. Students who consented were stratified into year of their study then proportionately sampled them according to their gender.

Procedures

Ethical approval was sought from institutional ethics committee and from other authorities in the institution. The researcher then organized to me*et al*l the sampled students who met the criteria for the study to be briefed on the nature of the study. Those willing to participate completed the questionnaires which were self-administered. The researcher then collected the completed questionnaire. Collected data was coded, cleaned and stored in a safe place before entry into computer for analysis. No further approval was needed since the project did not require access to patients or personal data. All participants were informed of the complete confidentiality of the data and were notified of the subsequent handling of the data following analysis.

Data Collection Instruments

Alcohol Use Disorders Identification Test (AUDIT) questionnaire was used to collect data relating to the prevalence of alcohol abuse. The AUDIT instrument was developed by W.H.O and it is a Self-Administered Pencil and Paper Alcohol Screening Questionnaires. The AUDIT is a 10-question survey that included questions about the quantity and frequency of current drinking and drinking history. It is considered effective in identifying problem of alcohol use as it has good sensitivity and specificity for detecting hazardous and harmful drinking and has been validated for use in a wide range of settings and populations (Coulton, Drummond, James, Godfrey, Bland, Parrot, Peters, & Stepwice Reasearch Team, 2006). The questionnaire for the study contained 2 sections. Section A was used to collect socio-demographic information for the students. It had 7 items which included year of study, age, gender, residence, level of parent's education, social and economic status. Section B contained a series of 10 AUDIT questions that include 3 questions on alcohol consumption, 4 questions on alcohol dependence symptoms, and 3 questions about alcohol-related problems. A cut-off score of 6 - 8 is recommended for at-risk drinking in college students and young adults. The responses given by respondents for questions 1-10 were scored between 1 to 4 points which were then added up to determine if the individual has alcohol abuse. A total score of 8 or more indicated harmful drinking behavior.

Table-1: AUDIT Interpretation

	Guidelines for Interpretation of AUDIT
Score	Degree of problems related to Alcohol Abuse
0-7	Low Risk
8-15	Risky and or Hazardous
16-19	High Risk or Harmful
20 and above	High Risk or Dependent

DATA ANALYSIS

Data collected was cleaned and stored in both soft and hard copies. Data were password protected, available only to the researcher. Data gathered was analyzed quantitatively using both descriptive and inferential statistics. Descriptive statistics namely frequencies, percentages was used to analyze the data. Frequency tables represent the most commonly used method in presenting data in descriptive research (Kathuri & Pals, 1993). Associations between selected variables were tested using Chi square. The test of significance was set at $\alpha = 0.05$ significance level. The analysis was done using Statistical Package for Social Sciences (SPSS) version 25.

RESULTS

All respondents were reached and there was 100 % return rate as indicated in table 4 below. Kathuri (2007) indicated that a 55% return rate is adequate enough for a study hence the total return rate of 100% respondents is excellent for the study. Summary of findings on Table 2 below.

Table-2: Response Return Rate

Respondents	Administered	Returned	Percentage return rate
Male	213	213	100
Female	142	142	100
TOTAL	355	355	100%

While the study aimed at determining the socio-demographic factors associated with the prevalence of alcohol abuse among university students, it was important to get the general information on the demographic characteristics of the participants as shown in Table 3 below. The participants included 112 students in year 1, 101 students in year 2, 80 students in year 3 and 162 students in year 4.

Table-3: Demographic Information

Variable		Frequency	Percentages
Gender	Male	213	60.0
	Female	142	40.0
Age	16-18	30	8.5
	19-24	299	84.2
	Over 24	26	7.3
Year of study	1st year	112	31.5
	2nd year	101	28.5
	3rd year	80	22.5
	4th year	62	17.5
Programme	JAB sponsored	224	63.1
	Self-sponsored	131	36.9
Place of residence	Resident	225	63.4
	Non-Resident	130	36.6
Living arrangements - with whom	Room mates	227	77.6
	Parents	14	3.9
	Spouse	24	6.8
	Others	45	12.7
Family's socioeconomic status	High	14	3.9
	Middle	273	76.9
Marital status	Low	68	19.2
	Married	37	10.4
	Single	312	87.9
	Divorced	6	2.1

N.B: JAB- Joint Admission Board. SSP- Self Sponsored Students

Prevalence results showed that majority of the respondents (78.9%) claimed to have never taken a drink containing alcohol. Moreover, study indicated that majority of the respondents (78.9%) never took alcoholic drinks on a typical day. Finally, findings showed that majority (78.9%) of the respondents have never taken six or more drinks on one occasion. Summary of findings is in Table 4.

Table-4: Prevalence of alcohol abuse among students

Variable		Frequency	Percentages
Frequency of alcoholic drink consumption	Never	280	78.9
	Monthly or less	38	10.7
	2 to 4 times/month	14	4.2
	2 to 3 times a week	14	3.9
	4 or more times a week	8	2.3
Drinks taken containing alcohol on a typical day	None	280	78.9
	1 to 2	57	16.1
	3 to 4	14	3.9
	5 to 6	5	1.4
	7 to 9	1	0.3
	10 or more	0	0.0
Frequency of taking six or more drinks on one occasion	Never	280	78.9
	Never monthly	28	8.0
	Monthly	24	6.9
	Weekly	14	3.8
	Daily or almost daily	9	2.4

Key: N=Never, NM=Never monthly, M=Monthly, W=Weekly, D/AD =Daily or almost daily

Figure 1 below shows that a majority 87.0% of the respondents during the last one year have never felt they were unable to stop drinking once they started.
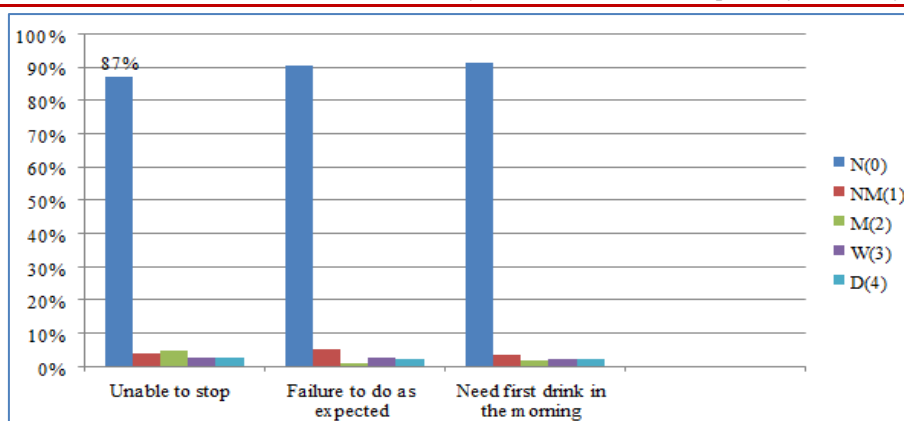
Fig-1: Alcohol Drinking Behaviour

As shown in Figure 2 below most of the respondents (86.5%) were at low risk level of alcohol abuse with scores of between 0-7 in the AUDIT.
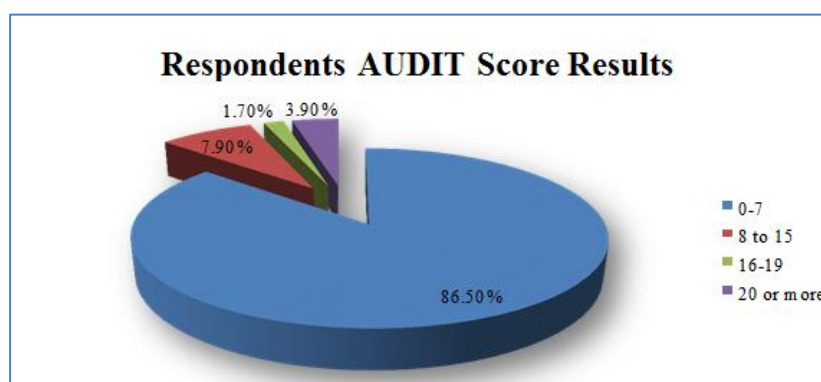

Fig-2: Respondent AUDIT Score results

Association between Socio Demographic Factors and Prevalence of Alcohol Abuse among University Students

The objective examined whether there was a significant association between sociodemographic factors and prevalence of alcohol abuse among university students. The findings are shown in Table 5.

Table-5: Association between socio demographic factors and prevalence of alcohol abuse among university students

Factors	Components	n=355	Prevalence	Test statistic	Df	P value
Gender	Male	213	56(26.3%)	7.692	4	0.101
	Female	142	21(14.8%)			
Age	16-18 Years	30	2(6.7%)	14.172	8	0.086
	19-24 Years	299	66(22.1%)			
	Over 24 years	26	9(34.6%)			
Year of Study	1st	112	16(14.3%)	32.331	12	0.001
	2nd	101	27(26.7%)			
	3rd	80	21(26.2%)			
	4th	62	13(21.0%)			
Programme of Study	JAB	224	43(19.2%)	5.090	4	0.282
	Self-Sponsorship	131	34(26.0%)			
Living Arrangements	Residence	225	41(18.2%)	7.132	4	0.126
	Non Residence	130	36(27.7%)			

Living Arrangements (With Whom)	Room Mates	272	48(17.6%)	43.404	12	0.000
	Parents	14	2(14.3%)			
	Spouse	24	13(54.2%)			
	Others	45	14 (37.8%)			
Family Economic Status	High	14	8(57.1%)	37.830	8	0.000
	Middle Low	273	56 (20.1)			
		68	14 (20.6%)			
Marital Status	Married	37	16 (43.2%)	54.994	8	0.000
	Single	312	57 (18.3%)			
	Divorced	6	4 (66.7%)			

The difference in gender had a p > 0.05 (p value is 0.101) hence, meaning that gender deference does not have any significant value with reference of alcohol abuse among the student. On age p > 0.05 (p value is 0.086). Hence age of the student did not have any significant association with drinking of alcohol. Furthermore, on association of year of study and alcohol abuse p < 0.05 (p value is 0.001) meaning that there is significant difference between year of study and alcohol abuse, the 2nd year have association with prevalence of alcohol abuse than other students in the year of study. The students from high economic status contributed more to association of prevalence of alcohol abuse than the low and middle classes. In Marital status, the divorced contributed to the association of prevalence of alcohol abuse at 66.7% than the single and the married. Those with spouses contributed more with the prevalence of alcohol abuse at 54.2% than those living with their parents, room-mates and others. Moreover, the programme of study that the students were undertaking did not have any significant association with drinking of alcohol (p > 0.05 (p value is 0.282). Association of living arrangements and how often the student had a drink containing alcohol showed no significant association at p > 0.05 (p value is 0.126), family's economic status was significantly associated with alcohol abuse (p<0.000) and finally on marital status and alcohol consumption indicated p < 0.05 (p value is 0.000). This means that there is significance difference between marital status and alcohol abuse.

DISCUSSION

The prevalence of alcohol abuse was measured by alcohol consumption indicators. The study found that 21.1% had taken alcohol drink on monthly or less with 16.9% confirming to have taken 6 or more drinks in one occasion. This implies that the prevalence of alcohol abuse among university students is 21.1% and that most of the students do not abuse alcohol as many could have expected but also some of students are on high risk as shown by the findings which indicated that 7.9% scored between 8-15 indicating risky level, 1.7% scored between 16-19 showing harmful level and 3.9% scored between 20 and above which indicate a high risk and definite harm of alcohol abuse. The rates of the prevalence of alcohol abuse among university students, indicates that it is on the lower level. In line with this study was the study by NACADA (2007), which found

the prevalence of current alcohol abuse of the general population to be about 13%. The low prevalence in the current study could be attributed to government's reinforcement of rules and regulations governing use of alcohol and creation of alcohol abuse awareness by the University counselling department. In contrast, most studies found high prevalence of alcohol abuse among university students for example a baseline survey conducted in June 2010 revealed that 33% of the student's abuse alcohol (JKUAT, 2011). In addition, a South African study found an alcohol abuse prevalence rate of 39.1% (Madu & Matla, 2003). Odek-Ogunde, M., & Pande-Leak, D, (1999) reported highest rates of alcohol abuse among students at a Kenyan private university at 84%. In Malawi, the prevalence of alcohol abuse among university students was 54.1 % (Zverev, 2008). Ethiopia indicated that alcohol was most used by university students at 50.2% (Gezahegn & Mitiku, 2014). Gezahegn & Mitiku, (2015) found a prevalence rate of 50.2% at Hamaraya University in Ethiopia and 56.7% at Addis Ababa (Eshetu & Gedif, 2006). A study done among college students in Eldoret revealed a prevalence rate of 51.9%. The differences noted in the prevalence rates could have been due to differences in instruments used which in this study was the AUDIT whereas in the other studies they used CAGE.

The study found a significant association between the prevalence of alcohol abuse and the year of study, marital status, family's economic status and the living arrangements (with whom). This therefore implies that there is a great association between some demographic factors and the prevalence of alcohol abuse. The association between the year of study and the prevalence of alcohol abuse could be attributed to environmental adjustment and the new found freedom from home as well as exploration experience and society acceptability to take alcohol. This implies that there is a need to create awareness through giving information and education on alcohol abuse as many students during second year of study increase use of alcohol intake thus need to continue holding talks not only during orientation. The study also shows that by the fourth-year majority of the student who abuse alcohol could have dropped from university.

The study also found an association between the prevalence of alcohol abuse and marital status. The students who were married abused alcohol more than

those who were single this could be due to influence from the spouses, the ability to afford alcohol as they could be due to having a source of income or stress that come with multi-tasking experience and the feeling that they are stable and stressed. This finding is supported by Gezahegn & Mitiku, (2014) who in a Cross-sectional Study of alcohol use and associated factors among University Students in Ethiopia, found that married students were more likely to use alcohol. In contrast Sahraian *et al*., (2010) in a study of prevalence of alcohol abuse among the Medical Students in Southern Iran, indicated that prevalence of alcohol use was significantly lower in the married students than in single students and students who lived with their family had lower rate of alcohol abuse. According to Hassan (2013) the percentage of single students that use alcoholic drink was significantly higher than those that are married. This shows the need to also target those students who are married and those who are divorced by the counselling team as the study shows that they are more predisposed to alcohol abuse and might be are not benefit with the talks and programmes that are given to the other students or they are thought it's alright for them to drink.

The study further found a significant association between the prevalence of alcohol use and the family economic status. The middle-income students want to gain status and therefore associate alcohol use with status and also university drinkers reinforce students' expectation that alcohol is a necessary ingredient for social success. According to karama, (2007) alcohol abuse was related to high socioeconomic status and living with the family. This study shows the need for the students to be educated on issues related to self-esteem and social status and its association with alcohol use. However, the study found no association between ages, place of residence, programme of study and the prevalence of alcohol abuse. This could be because the students share the same demographic factors of age, place of residents and programme of study. In agreement Hassan, (2013) who found that there is no difference between the students who were found in the various colleges with regards to age, gender and place of residence. In contrast Hassan, (2013) found that there is no difference between the students who were found in the various colleges with regards to year of study.

CONCLUSIONS

The study was successful in addressing its objectives. Given the foregoing, the study arrived at the following conclusions: The prevalence of alcohol abuse among university students is low at 21.1% as compared to other findings as in the foregoing discussion. However, there is evidence that some of the students are at high risk of harmful alcohol abuse. There is a significant association between the year of study of the students, marital status, family's economic status and the living arrangements (with whom) and the

prevalence of alcohol abuse. There is no significant association between the age of the students, the programme of study undertaken and place of residence and prevalence of alcohol abuse. However, high significant association was found among the middle income, divorced, living with spouses, and finally being on second year.

RECOMMENDATIONS

The following recommendations emanated from the analysis results of the study: Detection of the students at risk and remedial measures to be undertaken in university; restricting availability of alcohol around the learning institution; sensitising lectures and fellow students to detect problems among their colleagues. The government should reinforce the regulation of the sale of alcohol through licensing, packaging, pricing, restricting the age of consumers and regulating opening hours for the selling points. This will ensure that the selling points are located away from university premises, Small portable packages are abolished and consumers below the age of 18 are barred from accessing to alcohol. The university management and student counsellors team need to strengthen more the orientation programmes and devise group or individual activities that address the various social demographic factors associated with alcohol abuse among university students like peer group influence, economic status, marital status, living arrangements, self-esteem and freedom among others. Moreover, the study also recommends use of behaviour strategies to increase competencies to enable students make informed decisions.

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Ethical disclosures

Protection of human and animal subjects
The authors declare that the procedures followed were in accordance with the regulations of the relevant research ethics committee and with those of the Code of Ethics of the Declaration of Helsinki.

Confidentiality of data
The authors declare that they have followed the protocols of the university on the publication of the data.

Right to privacy and informed consent
The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Competing interest

The authors declare that they have no competing interests.

Authors& contributions

Micky Olutende Oloo and Martin Sisa Yauma conceived the paper, designed and performed the study. Prof Edwin Wamukoya conceived the paper and was the paper's peer reviewer. All authors read and approved the final manuscript.

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