ABUSING OTHERS BEHIND THE SCREENS: DEPRESSION OUTCOMES

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ABSTRACT

Cyber-bullying (CB) and its negative effects have been studied largely in high and middle schools, but less is known about CB in college students. This study aimed to investigate the relationship between CB exposure and depression among Hashemite University students (HU). The procedures and sample include One thousand, eight hundred and ninety-eight students from different colleges who completed the online Cyberbullying Questionnaire (CBQ) to assess their experience with cyberbullying as victims. Two hundred and fifty- six students out of 1898 were being recognized as victims of CB, completed online the Center for Epidemiologic Studies Depression Scale- 20 (CESD- 20) to assess depression symptoms. The results indicated that 13.48% of participants had experienced CB in college; participants who identified themselves as victims of CB had increased odds of depression in light of previous personal history with traditional bullying and a long time of internet access, but not in light of gender variable. Future implications indicate that future studies need to recognize the effects of possible and available interventions into young adulthood to deal with the negative effect of CB on student's mental health status.

Keywords: Cyberbullying, university students, Depression.

Introduction

Cyber-Bullying (CB), or using electronic technology to bully and abuse another person, or a group of people, is becoming more common among students today. Traditional bullying, which is practiced outside the family, either physically through pushing, or verbally, through name-calling, is no longer the only way of how to bully others (Nikki & Conti, 2013). The term "*cyberbullying*" is used to describe the individual(s) administering bullying to others through smartphones or the internet. Some attempts have focused on the statistical indicators and CB prevalence (Bennett, Guran, Ramos, & Margolin, 2011) revealed that 22% -92% of students were bullied either electronically or traditionally, at least once within their past school year. While other have shown that on average 20%–40% of children and 8.6%- 55.3% of college students have suffered at least once from CB in their lives (Udris, 2015; Kraft & Wang, 2010; Dilmac, 2009). These findings suggest that there is a common trend that leads to CB, and it needs to be investigated further. Smith and his colleagues (2008) have indicated that the CB is an aggressive, intentional behavior carried out by an individual \ group, using electronic methods of contact, repeatedly against victims who cannot easily defend themselves.

Li (2007) has listed seven different types of CB that constitute this new form of abuse. The 7 categories of CB are: online harassment, flaming, cyber-stalking, masquerading, denigration, outing, and exclusion. Hinduja and Patchin, (2009) argued that CB considered any act can be listed under, posting hurtful and humiliating comments or pictures, sending threatening e-mails or text messages, or spreading faked news and shameful rumors about others. Mostly of college students (86%) with high use of electronic social activity are at risk for CB (Smith, Rainie, & Zickuhr, 2018).

Cyberbullying is a recent phenomenon that harms today's youth. Victims of CB have been shown to have similar psychological sequelae, as victims of traditional bullying (Kowalski & Limber, 2013), including anxiety problems and low self-esteem (Smith et al, 2008), academic problems (Udris, 2014; Tynes, Rose, & Williams, 2010; Beran & Li, 2007), lack of social relations (Juvonen & Gross, 2008, Melander, 2010), depression and suicidal thoughts (Ramsey, Dilalla, & Mccrary, 2015; Messias, Kindrick, & Castro, 2014; Machmutowa, Perrena, Sticcaa, & Alsakerb, 2012; Schenk & William, 2012; Wang, Nansel, & Iannotti, 2011; Baker & Tanrıkulu, 2010; Hinduja & Patchin, 2010). Ramsey et al (2015) have argued that there is no studies have carefully examined the increased vulnerability of CB in young adulthood (18– 22 years) or in the college students population in particular, which justifies conducting researches to study CB at this developmental stage. In addition, the relationship between Cyber Victimization (CV) and some negative psychological consequences (e.g. depression) is unclear in these populations (Ramsey et al, 2015).

Bonanno and Hymel (2013) have found that suicidal thoughts and depressive mood are associated with CB in a unique way, separate from the contribution of traditional ones alone. Privitera and Campbell (2009) argued that a significant element defining CB is the negative differential that exists between the perpetrator and his \ her victim in that the cyberbully holds a

position of control within the relationship and that this power imbalance makes it difficult for some victims to defend themselves. The same holds for young adults and older adolescents in that the impact of CB can be extremely powerful that they avoid attending college academic activities, involving in practical training, or going to work (Mason, 2008). In some extreme cases, this abuse can be so tormenting and relentless that the victim turn to a depressive mood then to suicide as a means of escaping the abuse (Schenk & William, 2012).

Schenk and William's (2012) finding indicates the importance of learning more about the unique contributions of CV in depression and other psychological variables. Although one study (Menesini, Calussi, & Nocentini, 2012) did not find a significant interaction between CV in predicting depression in young adolescents, Menesini and his colleagues (2012) have recommended exploring this interaction between depression and CV in other populations (e.g. university students). Rivituso (2014) states that a gap in the literature exists about the study of CB victimization among college students and its negative psychological impact on developing depression symptoms, such lacking researches within this population means that the existing literature body lacks scientific evidence of CB victim experiences, as well as exploring of the meaning and interpretation victims students give of their negative experiences. In response to this dearth of evidence within education in universities, this research sought to gain a fundamental understanding of the impact of CB on college students by looking at its effect on developing depression symptoms.

It is particularly important to study the CV and its relation with depression in a college students' population, given that this population may still be in the process of developing personal identity, vocational paths, and intimacy trends (Ramsey et al, 2015).

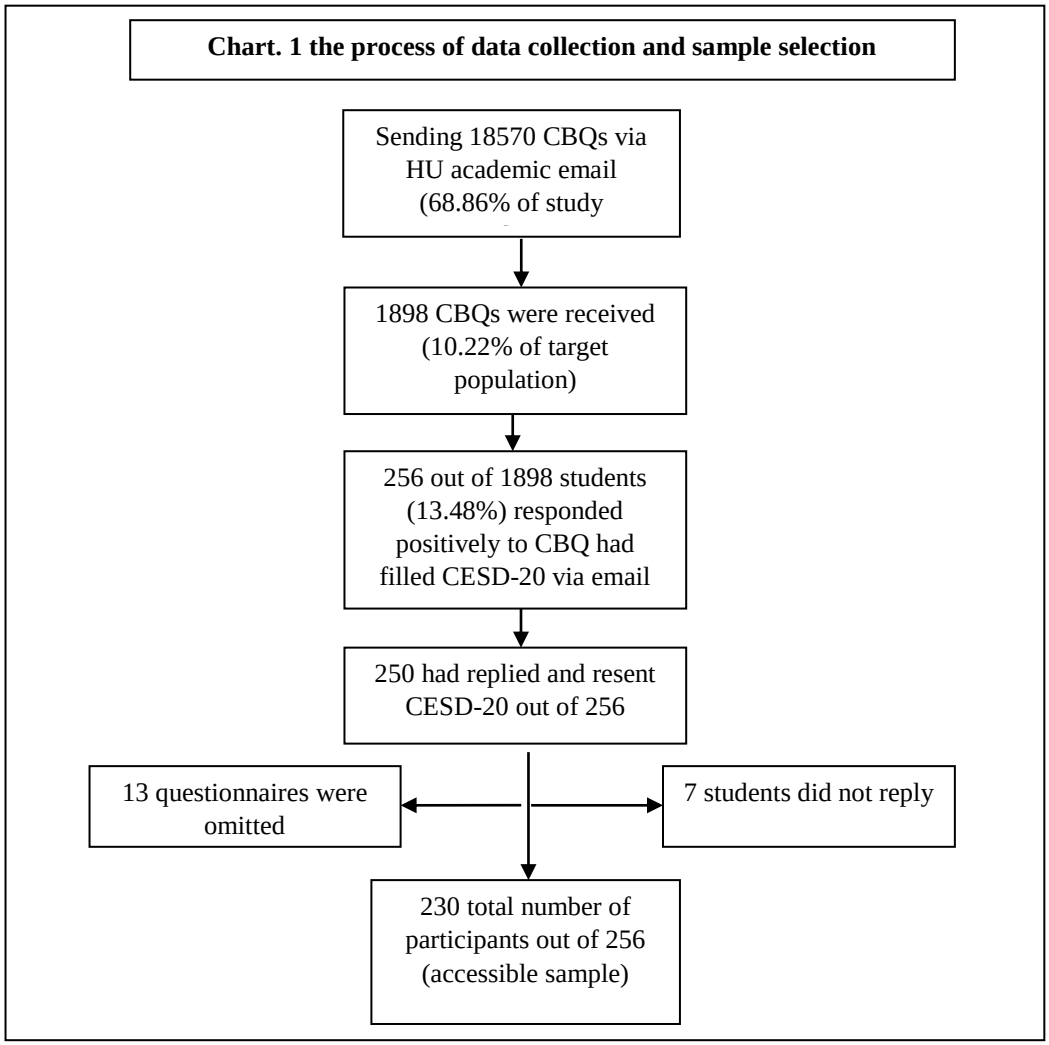
Objective and hypotheses of the study

The present study aims to identify the relationship between CB exposure and depression among university students in the light of gender, personal history of exposure to traditional bullying, and internet accessibility time variables. This study assumes that there is a relationship between exposure to CB at the university and the developing depressive symptoms, in light of gender, previous personal experience of traditional bullying in school, and internet access time.

Method

Study population and sample

This study was conducted in the Hashemite University (HU) in Jordan. The HU was selected for its location in the middle of Jordan, where its population can present all university populations in the country. The study population consisted of all undergraduate students at HU (n= 26967) during the first and second academic semesters 2016-2017. The accessible or\ available study sample included 230 college students ages 18–23 years (M = 19.70, SD = 1.48), female and male students from different departments, different academic years, and all faculties. Chart 1 below describes the process of data collection and sample selection



Screening and classifying process: Collecting data started in 29th of October\2016 to 4th of June\ 2017, the target population (18570) students received an email from the author indicating the study objectives and procedures, copy of CBQ and author contact information, the students informed that they have to reply to author email within two weeks from date of receiving it. After receiving 1898 (10.22% of the target population) of CBQs, the author classified received questionnaires according to total scores in CBQ. Based on positive answers on CBQ, 256 (13.48%) students out of 1898 (target population) were identified to fill the CESD-20 via email (250 had replied, 6 students, did not reply). All received CESD-20 copies were checked for missing information or auto-response. As a result, 13 questionnaires were omitted from the statistical analysis for automatic responses, and for not answering all CESD-20 items, seven students did not reply. The total number of participants settled on 230 out of 256 students who were replying to a second email from the author (89.84%). Finally, data were coded, entered, and analyzed using SPSS. Table1 describes the study sample distribution broken by study variables (gender, internet access, and previous personal history with traditional bullying)

Table 1. Distribution of study sample broken by study variables (gender, internet access, and previous personal history with traditional bullying)

gender			Person-history			Total
			Never exposed	3-5 times	> 3 times	
Male	Internet accessibility time	<5	20	21	13	54
		5-10	5	13	12	30
	Total		25	34	25	84
Female	Internet accessibility time	<5	34	48	6	88
		5-10	12	33	13	58
	Total		46	81	19	146
Total	Internet accessibility time	<5	54	69	19	142
		5-10	17	46	25	88
	Total		71	115	44	230

Instruments

Cyberbullying Questionnaire (CBQ). The CBQ (Calvete, Orue, Estévez, Villardón, & Padilla, 2010) composed of two sub- scales for measuring CB and CV. The initial version of the questionnaire (Calvete et al, 2010) consists of 16 items on CB and 11 items on the CV. In this study, we used the modified version of CBQ by (Gámez-Guadix, Villa-George, & Calvete, 2014) composed of nine items for CV. To adapt the CV part of the scale to the Arabic language, it was translated to Arabic by an authorized translator, several minor changes were taking place in the formulation of the items, replacing some words with alternatives appropriate to Jordanian culture. The Arabic version of the questionnaire was pilot-tested to 92 university students at UH who answered each scale item while the research assistants detected the possible difficulties in the comprehension of the items. The content of each item was discussed with the students to ensure that the items were well understandable and relevant to the CV issues. The victimization sub-scale includes 9 items about the frequency\ severity with which students have exposed different behaviors of CB or cyber-attacks. Each participant was asked how often he\ she had experienced different CB behaviors as a victim by the internet or via smartphones, such as receiving disesteeming topics or threatening images\pictures, or messages of themselves that were humiliating while using the internet or a smartphone. The author reserved the same response format used by (Gámez-Guadix et al, 2014) to assess how often each behavior had occurred as CB or is as follows: 0 (*never*), 1 (*1 or 2 times*), 2 (*3 or 4 times*), or 3 (*more than 5 times*). The scale total scores between (0-27), (0-1.00 low, 1.01-2.00 mid, 2.01-3.00 high). The high scores indicate high exposure to CB.

Center for Epidemiologic Studies Depression Scale (CESD- 20). The CESD- 20 (Varghese, & Pistole, 2017) measures depression over the past week in nonclinical populations. Sample items include “I felt depressed” and “I felt fearful.” Respondent rates each item on a 4-point Likert-type scale ranging: 0 (rarely or never happened [less than 1 day]), 1 (most of the time [1 -3 days]), 2 (most of the time [3-5 days], 3(all last week). Responses are summed to a total (ranged between 0-60), with some items reverse scored (Zhang et al, 2012). According to Radloff (1977) and Zhang et al (2012), higher scores indicate more severe depressive symptoms and scores at or

above 16 indicate risky scores for depression. The reliability and validity of the CES-D in the Jordanian community were supported by Al-Modallal, (2010) work (*Cronbach's alpha*, 0.90). For this study's purposes, we established new psychometric properties, validity, and reliability values were obtained through interrater validity and Pearson (test-retest- three weeks) correlation coefficient (0.902) respectively.

Study Operational Definitions

- ***Depression:*** a common mental disorder or mood symptoms, recognized by loss of interest in social and personal activities that person normally attracts, sadness, and accompanied with an inability to carry out the daily activities for at least 1 week (WHO, 2018). Operationally, depression was measured by CESD- 20.
- ***Cyber- Bullying:*** intentional aggressive behaviors (online harassment, flaming, cyberstalking, masquerading, denigration, outing, and exclusion) carried out by an individual \ group, using electronic methods of contact, repeatedly against a victim who cannot easily defend him\ herself. Operationally, Cyber Bullying was measured by CBQ (Calvete et al, 2010)

Procedures

Data was collected through a confidential survey run through the internet. All data were collected from 230 students through emailing randomly 18570 (68.86% of the study population) students from all faculties, through their saved available personal and academic emails at the registration department, 1898 students had replied. This method facilitated the random distribution of participants according to faculties, departments, sections, and year of study. All instructions and consent forms are presented on the first page of the email, the consent form requiring each participant to check a box indicating consent. This type of implied consent to protect the participants' rights and confidentiality has been widely accepted for online researches (Walther, 2002). After giving the consent, the participant filled the attached CBQ according to the attached instructions. Students' names were not required (except for the consent form), but all participants were asked to approve to be connected by the author through email for proceeding next step of the study. This research was not supported or funded by any university or organization therefore no compensation had been paid for participants for their enrolling in the study.

Data Analyses

The study sample experiences with CB were examined using descriptive and inferential statistics (Means- *M* and Standard Deviations- *SD*); the study depended on a descriptive-analytic approach for answering its questions, examine its hypotheses and achieve its objectives. Descriptive statistics provide a comprehensible picture of the study results related to CB prevalence in the study sample according to different demographic variables.

Nonparametric variables in the study were inferentially analyzed using Pearson correlation (r) to determine the correlations between exposure to CB and depression (p=0.01). ANCOVA test was run to clarify the relationship between depression as a dependant variable and other study independent variables (gender, student's internet access time, and exposure to traditional bullying). All results were tested under statistical significance (p< 0.01).

Results

Table 2. Depression scores according to study independent variables

Internet accessibility	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
<5 hours	12.413a	.508	11.412	13.413
5-10 hours	16.597a	.621	15.373	17.822
Personal history of bullying				
never	9.961a	.723	8.535	11.387
3-5 times	15.598a	.504	14.605	16.591
> 5 times	17.956a	.776	16.427	19.485
Gender				
male	14.305a	.586	13.149	15.461
female	14.705a	.516	13.689	15.721

a. Covariates appearing in the model are evaluated at the following values: sum of items = 20.83.

The descriptive statics in table 2 indicated statistical differences in depression means according to internet accessibility, previous exposure to traditional bullying, and gender variables. According to results, 256 students out of 1898 (13.48%) reported that they had been exposed to CB from other students in a university. ANCOVA was run to indicate whether these differences were statistically significant.

Table. 3 Statistical differences in depression according to (gender, personal history in bullying, and internet access)

**Covariance Source*	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Cyber bullying	29.456	1	29.456	1.276	.260
gender	6.098	1	6.098	.264	.608
Personal history	1466.215	2	733.107	31.756	.000
Internet access	600.466	1	600.466	26.011	.000
gender * personal history	68.926	2	34.463	1.493	.227
gender * internet access	12.011	1	12.011	.520	.472
Personal history * internet access	96.616	2	48.308	2.093	.126
gender * personal history * internet access	2.296	2	1.148	.050	.952
Error	5009.559	217	23.086		

a. R Squared = .440 (Adjusted R Squared = .409). * The statistical processing was run on 230 students.

Table. 4 Pairwise comparisons for personal history with traditional bullying and internet accessibility

Independent variables	(I) person-history	(J) person-history	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
Personal history	never	3-5 times	-5.637*	.882	.000	-7.764	-3.510
		> 5 times	-7.995*	1.062	.000	-10.556	-5.434
	3-5 times	never	5.637*	.882	.000	3.510	7.764
		> 5 times	-2.358*	.922	.034	-4.584	-.133
	> 5 times	never	7.995*	1.062	.000	5.434	10.556
		3-5 times	2.358*	.922	.034	.133	4.584
Internet accessibility	< 5	5-10	-4.185*	.821	.000	-5.802	-2.567
	5-10	< 5	4.185*	.821	.000	2.567	5.802

** The statistical processing was run on 230 students.*

According to displayed data in table 3, the results revealed significant effects of a personal history of traditional bullying exposure (F=31.756, p= 0.000, df= 2) and internet access time (F=26.011, p= 0.000. df=1) as independent variables in depression, but there were no statistical differences in depression according to gender variable (F=0264, p=0.608, df=1)

Table (4) revealed statistical differences in depression for those who have repeating traditional bullying history as victims (> 5 times) comparing with those without such bullying exposure history. In addition, statistical differences in depression were more related to a long time of internet access (5-10 hours) comparing with a short time of internet access (< 5 hours). In other words, our results indicated that the student who was a former victim of physical or verbal bullying in school and who uses the internet longer is at risk to develop significant levels of depression. Data displayed in table 4 clarifies the relationship between CB and depression, Pearson correlation formula was used (r) and being tested under (p=0.05, p= 0.01). The correlation between CB and depression was (r= 0.313, p=0.00).

Discussion

It was hypothesized that college students who were Cyber-bullied would have increased rates of depression, with the highest rates in those who had been victims of traditional bullying in schools, long time using the internet, and female students. It was found that students who are victims of CB in university, who have reported traditional experience of bullying (F=31.756, $p < 0.000$) and who were using the internet more than 5 hours daily (F= 26.011, $p < 0.000$) have increased odds of meeting criteria for depression compared to students with no traditional bullying experience and short hours of internet access

At the same time, the results indicated no significant differences in depression between male and female students who suffer from CB in university (F=.264, p < .608). The CB has a limited but significant effect on depression, the results indicated that (0.098) of covariance of depression can be explained by CB exposure, while the findings revealed a significant correlation value between the two variables (r= 0.313, p< 0.00). Our results can be supported by other findings (Varghese & Pistole, 2017; Rivituso, 2014; Lenhart, 2010; Ireland & Power, 2004) which linked CB and depressive symptoms and low self-esteem for undergraduate students.

The findings suggested the potential negative impact of Cyberbullying on university students, thus adding to the growing body of literature on cyber-talking and internet abuse.

This finding further highlights the vulnerability of this high-risk population for developing depressive reactions in light of previous experience in traditional bullying and a long time of using the internet, consistent with the theoretical perspective that underlies the relations between personal history with traditional bullying and the possibility of exposure to CB in adulthood (Kraft & Wang, 2010). The more specific finding is that those who were identified as victims of CB at university with a long time of using the internet reported significantly higher levels of depression than those who were not.

Findings suggested that college students are as susceptible to the negative psychological consequences of CB as younger adolescents under some variables. This finding can be discussed and explained by participants who had experienced CB in college had also experienced other bullying forms in earlier years. Some findings have shown that involvement in bullying as a victim in adolescence or childhood stages can contribute to developing depressive mood and alcohol use in young adulthood (Kraft & Wang, 2010).

Existing mental health concerns manifest as depressive symptoms, might be related to the previous personal experience in traditional bullying particularly in middle school and early high school, previous studies (e.g. Sourander et al, 2007) have shown low self-esteem (as one symptom of depression) can be predictive of being depressed in later years at college. In addition, bullying could violate personal security and safety feelings, which forces a student to keep himself\ herself away from others.

Being alone, vulnerable, and separated from social activities could increase student's internet login time. Students who were being victims of bullying could try to help themselves through cyber interaction with other students in their university, but unfortunately, this interaction could be negative and abusive, which could increase vulnerability, in light of their low self-esteem, social isolation, low-security feelings, and previous personal history of traditional bullying. These negative circumstances might increase the possibility to be vulnerable. As a result, the empty circle was formed, students who are suffering from depression may recognize the university environment as less attractive and more passive; this leads them to be socially isolated with less opportunity to receive social support from their peers in a stressful situation, so they

intensively using the internet as a possible gate to interact with their external environment (Mikulincer & Shaver, 2007).

An additional explanation could be related to possible available help and support received from others to cope with CB. It is clear that students who were victims of CB were isolated from any support services or other personal supportive relations, they were suffering silently from their invisible wounds, which could increase their problems and suffering. In this line Lenhart (2010) reported statistics on CB, indicated that over 70% of the CB victims know their attackers, offering the possibility that most of the perpetrators may have been friends or in relations with their victims.

Findings from current work have supported those within the literature (.e.g. Rivituso, 2014) suggested that low self-esteem, depressive mood, and embarrassment are very common consequences of cyber abuse among university students. Each participant of this study has revealed that he\ she felt significant amounts of loneliness, hopelessness, and embarrassment during his\ her period of victimization.

Recommendations and Implications for college mental health specialists and future research

1- There were enough CB victims in universities; CB as a phenomenon is not limited to school students, that college counselors and mental health specialists need to address it by offering the necessary method for assessment and evaluation.
2- Implementing outreaches mental health activities to leverage change in counseling when CB affected negatively student's psychological variables.
3- More intensive activities for increasing student's awareness, towards CB and its negative psychological impact (e.g. depression) in light of gender, excessive using internet, previous experience of traditional bullying variables to buffer its negative consequences.
4- Counselors, social workers, and students' mental health specialists at different universities can design their outreach programs to form a coherent understanding of CB prevalence and its possible negative effects to discover at-risk victims (students) who might not seek help or recognize that they are suffering an abuse problem.
5- The results of the study can be used by the school counselors to identify the impact of traditional bullying on student's psychological variables in long term, which may help them to utilize psychological services to deal with CB cases in their schools.
6- Future researchers could use qualitative methods to examine the effects of CB on other psychological variables (.e.g. anxiety, academic adjustment, or future resilience), differences between CB victims and offenders, coping with CB by victims including resiliency, social support as possible protective factors and psychological interventions.

Limitations

Several limitations of this study should be noted. First, 1898 students who replied (out of 18570) reported having CB experience in college. Therefore, the sample for CB victims is limited, and the CB scores clustered close to 0. Although expected, because CB is a non-normative act, this small sample may harm power (being lower than desired), thus results cannot be generalized to other university communities. Our used statistical design (cross-sectional correlation) might prevent us from elaborating a causal relationship between CB and our other variables. Longitudinal researches could provide deep knowledge and data on CB precedents, such as whether depression precedes or reflects a changed style following the CB experience. In Jordan, CB is not considered yet as abuse or a human right violation, for that might students who were being victims of CB, did not recognize or perceive those experiences as a violation of their rights, thus they would not report these experiences as such.

Conclusion

The findings revealed that the prevalence of CB among university students was (13.48%), the results confirmed that there was a relationship between exposure to CB and depression symptoms in the light of the previous personal experiences in exposure to traditional bullying and length of internet access variables. The gender factor was not determining factor in finding differences in depressive symptoms for bullied university students.

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