

Influence of achievement goals and motivational climate on attitudes toward doping among East African university athletes

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Abstract

Doping cases among East African athletes have been reported in the past few years, jeopardizing their international reputation. Pro-doping behaviours in sports can be assessed using Achievement Goal Theory (AGT) which proposes that goal orientation and motivational climate influence attitudes and behaviours. This study examined the relationships among East African university athletes' achievement goal orientations, perceived coach-created motivational climate and attitudes towards doping in sports. Using a cross-sectional survey design, data were collected from 327 student-athletes during the 2016 East African University Sport Championships. Athletes' doping attitudes were assessed using a modified Performance Enhancement Attitude Scale (PEAS). The athletes' perception of success or achievement goal orientation in sports was assessed through the Task and Ego Goal Orientation in Sport Questionnaire (TEGOSQ), while their perceptions of coach motivational climate were assessed using an adapted version of the Perceived Motivational Climate in Sport Questionnaire (PMCSQ). Based on responses to a five-point Likert scale, results yielded the following: doping attitude scale (Mean = 2.14 ± 0.73), Ego orientation (Mean = 3.77 ± 0.86), Task orientation (Mean = 4.41 ± 0.87) and Performance motivation climate (Mean = 2.59 ± 0.89). About 71% (229) of the respondents were least likely to dope, while 29% (94) had high likelihood of engaging in future doping behavior. Binary logistical regression analysis showed that Performance motivation climate had the most significant unique contributions to attitudes towards doping ($\chi^2 = 6.35$; $p = .012$). Fostering performance motivation climate during coaching and deemphasising task orientation in sports could promote athletes' inclination towards doping.

Keywords: Ego orientation, goal orientation, performance motivational climate.

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Introduction

East African athletes – Kenyan athletes in particular, have asserted their supremacy in middle and long distance races worldwide. Their performances in international athletic competitions have surpassed those of superpowers such as American, Chinese, British, German and Russian athletes (International Association of Athletics Federations [IAAF], 2012; Larsen, 2003). Some exercise

physiologists have examined Kenyan runners and suggested physiological and socio-cultural factors as the reasons for Kenya's success in middle and long distance races (Larsen, 2003; Scott et al., 2003; Wilber & Pitsiladis, 2012). In recent years, Kenya's dominance in middle and long distance races has been linked to doping or the use of illicit performance enhancing substances (PES). This comes against the background that over 45 Kenyan athletes in middle and long distance running have been reported to have doped and consequently suffered differentiated sanctions (Andrén-Sandberg, 2016; Gambaccini, 2015; Nabiswa, 2016). The Kenyan government, in an attempt to curtail the menace of doping, enacted laws to promote clean sport through the establishment of an Anti-doping Bill in 2016, which was also endorsed by the World Anti-Doping Agency (WADA) (Shiundu, 2016). Despite this effort, world sporting bodies such as the International Olympic Committee (IOC) and International Association of Athletics Federation (IAAF), have indicated that Kenyan athletes will be subjected to doping tests all the times (Agence France Presse [AFP], 2016; The Telegraph, 2016). This may create perceptions that Kenyan athletes are considered guilty unless proved innocent.

Doping practices among athletes could be attributed to a variety of reasons. These include winning competitions (Laure & Kriebitzsch-Lejeune, 2000; Scarpino et al., 1990), psychological motivation (Barhrke & Yesalis, 2004; Tangen & Breivik, 2001), developing desired image (Kaur, Masaun & Bhatia, 2014; Ozdemir et al., 2005), peer pressure (Lentillon-Kaestener & Carstairs, 2010) and treatment of injury (Bloodworth & Mcnamee, 2010). Other reasons include increased self-confidence (Striegel et al., 2006), social recognition (Ehrnborg & Rosen, 2009; Striegel et al., 2006), change of appearance (Barhrke & Yesalis, 2004; Ozdemir et al., 2005), lack of understanding of the implications of doping (Astrand & Rodhal, 2003), financial and status gains (Akindutire & Olanipekun, 2015; Parnabas et al., 2013; Striegel et al., 2006) and lack of knowledge and awareness of doping regulations (Kamenju, 2014).

Several studies have reported that male athletes are more likely to dope than females (Adegboyega, 2014; Corbin et al., 2005; Kirby et al., 2008; Molebe, 2012; Peretti-Watel et al., 2004; Petroczi, 2007; Scheneider & Morris, 1993; Zelli, Lucidi & Mallia, 2010). For male athletes, the reasons for doping were to enhance performance, to enjoy the glamour associated with winning, as well as coaches and peer encouragement (Peter et al., 2005). Collins et al. (2012) opined that female athletes have explained that feelings of shame and guilt in the event of being caught may deter the athletes from doping in comparison to male athletes. Players' ages and playing experience are expected to correlate with anti-doping attitude, especially if they are accompanied by positive experiences. For instance, Corluka, Gabrilo and Blazevic (2011) have reported that age and sports experiences are significantly related to knowledge of doping. This can also be said of the year of university study. However, it is important to investigate whether knowledge of doping could necessarily lead to favourable anti-doping attitude.

Private university athletes may be more vulnerable to doping than those in public universities. This could be attributed to the fact that there are more sports scholarship programmes in private universities compared to public universities. There is heightened pressure on student-athletes, especially those on scholarships, to achieve optimum performance as the sustainability of their bursaries is tied to their continued success in sports competition. Similarly, the coaches are under immense pressure to succeed in sports competitions in order to advertise and brand the institutions. Under such circumstances, athletes and coaches may take great risks to succeed in sports at all costs. The purpose of this study was to evaluate the relationships between achievement goal orientations, perceived coach-created motivational climate and attitudes towards doping in sports among university athletes, and examine whether selected demographic factors (gender, age, playing experience, type of university and year of study) would elicit significant differences and/or associations in the athletes' achievement goals, perception of motivational climate and attitudes towards doping. The findings of this study could enhance our understanding of the nexus between motivational climate and doping attitudes.

Theoretical framework

The study was based on Achievement Goal Theory (AGT), which proposes that the way individuals define competence and success (goal orientation) and how their social context is shaped (motivational climate) influence motivated behaviours. Achievement goals theory reflects the criteria that athletes use to define success and evaluate their competence in sports. Athletes who are high on ego orientation feel successful only when they do better than others and endorse the belief that high ability, deception and cheating lead to success in sports. Ego orientation is associated with more favourable attitudes towards doping in elite athletes (Moran, Guerin & Kirby, 2008). Sas-Nowosielski and Swiatkowska (2008) found that athletes who were relatively higher in ego goal orientation were more likely to endorse doping than those with task orientation. Barkoukis et al. (2011) reported that athletes with a stronger mastery achievement goal reported lower past doping use and lower intention for future use. In a related study, Allen et al. (2015) found that athletes in Scotland were against doping and that task and ego goals and mastery motivational climate were predictors of attitudes towards doping.

A number of researchers have proposed the theoretical links between doping and certain psychological attributes such as achievement orientation, risk-taking propensity, self-esteem and perfectionism (Donovan et al., 2002; Waldron & Kraine, 2005). Motivational climate refers to the situational goal structure or the goals that are emphasized as well as the values that are salient in an achievement context (Ames, 1992). Motivational climate in the achievement context is created and shaped by external achievement expectation from significant others such as

teachers, parents and coaches (Ames, 1992; Duda & Balaguer, 2007). The athlete perceives the achievement expectation from his/her environment as progress and constant improvement (mastery climate) or as constant competition and desire to win (performance climate). This influences the athlete's subsequent choices and behaviours in sports training and competitions (Dweck & Elliot, 1983).

Motivational climate comprises mastery climate and performance climate as two ends of a continuum. In mastery climate the context on participation, individual progress and task mastery is emphasised, while performance climate emphasises normative success and outperforming others. Mastery climate has been positively associated with pro-social behaviour, sports personship, but negatively related to anti-social behaviour. Over-emphasis on performance outcomes such as results and winning (as may be nurtured by performance climate) is more likely to lead to maladaptive motivational and affective responses such as taking shortcuts, cheating or aggressiveness (Ntoumanis & Biddle, 1999). Performance motivational climate has been shown to be positively associated with anti-social behaviours such as diving to fool the referee, deliberate handball and pretending to be injured (Kavussanu, 2006), low levels of sport personship and moral functioning (Boardley & Kavussanu, 2009). Performance motivational climate is also positively associated with doping attitudes (Moran et al., 2008) and ego orientation (Sage & Kavussanu, 2008).

The coach is the most influential significant other in the athletes' sport experience along with team mates and/or training partners (Bartholomew, Ntoumanis & Thorgersen-Ntoumani, 2010). Coaches have been identified as important social influences in athletes' doping attitudes, intentions and behavior (Huybers & Mazanov, 2012; Johnson, 2011). Pitsch, Emrich and Kleinm (2007) reported that 50% of participants in their study were encouraged to engage in doping practices by their coaches and 6.5% were motivated by family members and friends. Therefore, the contextual environment or climate that the coach and teammates create is especially influential with respect to athlete motivation and subsequent behavior (Hodge & Lonsdale, 2011).

Attitudes towards doping predict PES susceptibility, which in turn could forecast the actual use of such substances (Jalleh & Dohovan, 2007). It is worth noting that attitude (in addition to volitional control and subjective norms) largely influence intention and subsequently the behavior (Ajzen, 2014; Ajzen & Fishbein, 1980). Previous studies have shown that attitudes correlate to doping behavior intentions and sometimes these intentions predicted subsequent use of doping substances among both non-athletes and professional athletes (Alaranta et al., 2006; Lucidi et al., 2004; Petroczi, 2007; Petroczi & Aidman, 2008; Wiefferink et al., 2007). To function as a role model, coaches should demonstrate sound knowledge and ethically correct attitudes towards doping (Fung & Yuang, 2006). Coaches' and athletes' knowledge about doping may deter development of pro-doping attitudes

thereby fostering positive anti-doping attitudes (Blank et al., 2014). Petroczi and Aidman (2008) opined that doping occurs in the form of a life-cycle model involving personal differences and systematic factors such as motivational climate, which is an antecedent of self-belief formation (i.e. attitudes and intentions) and the interaction with situational and environmental factors to influence doping behavior. The current study sought to investigate the relationship between motivational variables and doping intention or attitudes among university athletes, as well as its potential associations with selected demographic variables such as of gender, age category, type of university, year of study and sports competition experience. Based on the above background, it was postulated that there are no significant relationships between achievement goal orientations, perceived coach-created motivational climate and attitudes towards doping in sports among university athletes.

Methodology

Study design, location and participants

The study utilised a cross-sectional survey design to collect information from the athletes who participated at in the 2016 edition of the East African University Sport Championships held at Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya. A total of 327 student-athletes from three countries (Uganda $n = 96$, 29.4%; Kenya $n = 221$, 67.6%; and Tanzania $n = 10$, 3.1%) voluntarily participated in the study.

Instrumentation

Data were collected through a self-report questionnaire which had four sections including demographics, attitudes towards doping, perception of success and perceived motivational climate. Athletes were requested to provide demographic information (i.e. gender, age, year of study, type of sport and years of university competitive sport experience). The athletes' attitudes towards doping were assessed using a modified version of Performance Enhancement Attitude Scale (PEAS) (Petroczi & Aidman, 2009). The scale consisted of 17 items for measuring self-declared attitudes towards doping. Participants responded to each item on a 5-point Likert scale ranging from strongly disagree (rated 1) to strongly agree (rated 5). High reliability index of the scale (between .71 and .91 internal consistency across various samples) has been reported in previous studies involving college and elite athletes (Moran et al., 2008; Petroczi & Aidman, 2009).

The athletes' perception of success or achievement goal orientation in sports was assessed through the Task and Ego Goal orientation in Sport Questionnaire (TEGOSQ). The TEGOSQ consisted of 12 items which were also weighted on a 5-point Likert scale. The scale has been used extensively in sport research with a high reliability index of .89 (Duda & Nicholls, 1992). Athletes' perceptions of coach motivational climate were assessed using an adapted version of the

Perceived Motivational Climate in Sport Questionnaire (PMCSQ) (Newton, Duda & Yin, 2000). This sub-scale consisted of 12 items which were also rated on a 5-point Likert scale (ranging from 1 [never] to 5 [most of the time]). The items focused on performance climate and reflected the coach's emphasis on winning and outperforming others through negative motivation, unequal recognition and fostering inter-individual rivalry.

Ethical considerations

Kenyatta University granted approval for the study to be conducted and the participants also gave signed informed consent before data collection. For the sake of anonymity, the participants were instructed not to indicate their names or those of their universities on the questionnaire. They were also encouraged to be frank and truthful in their responses, and were assured of confidentiality in handling of the information provided.

Data analysis

Data were analyzed using IBM SPSS Version 20. Descriptive statistics such as means and standard deviations were calculated to give summary values. Reliability and normality tests were done to verify compliance with the assumptions of parametric statistical analyses. Inferential statistics included correlation analyses, test of differences in the dependent measures across participants' demographic categories, and regression analysis. Spearman rho was used to determine relationships between Ego orientation, Task orientation, Performance motivation climate and Doping attitude. The differences in the values of variables across demographics and categories of respondents were assessed using Mann Whitney U and Kruskal-wallis tests.

Binary logistical regression analyses were used to determine influence/contribution of Ego orientation, Task orientation, Performance motivation climate to Doping attitude. The average score for attitude towards doping was categorized into binary scores; Low/least likely to dope (less than 2.5 in the 5-point Likert scale) and High/likely to dope (2.5 and above on the 5-point Likert scale). Cronbach's Alpha reliability indices were as follows; doping attitude (.86), ego orientation (.77), Task Orientation (.53) and performance motivation (.88). These largely met the recommendations in psychological studies (Shaughnessy, Zechmeister & Zechmeister, 2003). However, initial evaluation of the data showed that it was not normally distributed as assessed by Shapiro-Wilk test ($p < .05$, $df = 311$). Consequently, non-parametric inferential statistical tools were used.

Results

Demographic characteristics

Of the 327 student-athletes, 119 (36.4%) were from private universities, while 208 (63.6%) attended public universities. The athletes, whose aged ranged from 16 to

25 years, comprised 117 (35.78%) females and 210 (64.22%) males. At the time of data collection, distribution of the student-athletes per year of study was as follows: first year (65, 19.9%), 2nd year (96, 29.4%), 3rd year (101, 30.8%), 4th year (51, 15.6%) and 5th year (14, 4.3%). Duration of participants' university sport competition experience ranged from 1 to 5 years: 1 year (98, 30.0%), 2 years (107, 32.72%), 3 years (80, 24.5%), 4 years (31, 9.5%) and 5 years (11, 3.4%). A total of 291 (88.99%) participants competed in team sports, while 36 (11.01%) featured in individual sports.

Doping attitude scale

The doping attitude scale returned a mean and standard deviation of 2.14 ± 0.73 , ego orientation, 3.77 ± 0.86 , Task orientation, 4.41 ± 0.87 and performance motivation, 2.59 ± 0.89 based on the student-athletes' 5-point Likert scale rating. The results of Spearman's correlation analyses showed significant negative relationships between doping attitude vs Age ($\rho = -.118$; $p = .033$), Ego orientation vs Type of university ($\rho = -.118$; $p = .035$) and Performance motivation climate vs Type of university ($\rho = -.121$; $p = .034$). Spearman's correlation results showing the relationships between Doping attitude, Ego orientation, Task/goal orientation and Performance motivational climate are shown in Table 1.

Table 1: Results of Spearman's correlation analyses showing the relationships between Doping attitude, Ego orientation, Task/goal orientation and Performance motivational climate scores ($n = 327$)

Variable		Doping attitude	Ego orientation	Task/goal orientation	Performance motivation climate
Doping attitude	<i>rho</i>		.028	-.192*	.197*
	<i>Sig.</i> (2-tailed)		.618	.000	.000
Ego orientation	<i>rho</i>	.028		.496*	.184*
	<i>Sig.</i> (2-tailed)	.618		.000	.001
Task orientation	<i>rho</i>	-.192*	.496*		.040
	<i>Sig.</i> (2-tailed)	.000	.000		.477
Performance motivation climate	<i>rho</i>	.197*	.184*	.040	
	<i>Sig.</i> (2-tailed)	.000	.001	.477	

* Significant at .01 level.

Performance motivational climate showed significant positive correlation ($\rho = .197$; $p < .001$), while Task/goal orientation indicated a significant inverse relationship ($\rho = -.192$; $p < .001$) with Doping attitude. Ego orientation did not record significant correlation ($\rho = .028$; $p = .618$) with Doping attitude. The results of Mann-Whitney U tests showed that athletes that were likely to dope (as categorized per their attitude towards doping average scores) had significantly higher means ranks in performance motivational climate than those least likely to dope ($p = .005$), and significantly less in task orientation ($p = .022$). Comparisons

of the athletes' scores on attitudes towards doping, perceived motivational climate and task/goal orientation for differences across selected demographic factors are shown in Table 2.

Table 2: Propability values for differences in attitudes towards doping, perceived motivational climate and task/goal orientation across selected demographic factors as analysed through Mann Whitney U and Kruskal Wallis tests ($n=327$)

Demographic Variables	Doping Attitude (p -values)	Ego Orientation (p -values)	Task/goal Orientation (p -values)	Performance motivational climate (p -values)
Type of university	.69	.03*	.57	.03*
Gender	.79	.51	.90	.19
Country	.13	.13	.42	.001**
Age category	.09	.48	.60	.66
Year of study	.09	.72	.43	.07
Duration played for the university team	.21	.94	.19	.53

*Significant at .05 level, ** Significant at .01 level

Binary logistical regression analysis was done to examine the likelihood that ego orientation, task/goal orientation and performance motivational climate - individually or in combination, predict the attitudes towards doping. About 71% (229) of the respondents were in the 'Least likely to dope' category while 29% (94) fell in the 'Likely to dope' group. A non-significant chi-square for the Hosmer-Liemenshaw test ($\chi^2 = 10.94$; $p = .205$) indicates that the data from respondents' scores fit the prediction model well. The model predicted up to 70.6% of the student-athletes' attitudes towards doping. The Wald Chi-square statistic which shows the contribution of each predictor variable (Table 3) revealed that out of the three variables tested, only the performance motivational climate had significant contributions to attitudes towards doping ($\chi^2 = 6.35$; $p = .012$).

Table 3: Binary logistical regression analyses results showing the unique contribution of each of the three tested psychological predictors of the attitudes toward doping ($n=327$)

Variables in the equation	Wald Chi-sq	df	Sig	Exp(B)
Ego Orientation	1.60	1	.205	1.25
Task/Goal Orientation	1.07	1	.296	0.80
Performance Motivational Climate	6.35	1	.012*	1.43
Constant	4.15	1	.42	017

*Significant at .05 level

Discussion

This study examined the interrelationships between achievement goal orientations, perceived coach-created motivational climate and attitudes toward doping in sport

among East African university athletes. The study also assessed differences on achievement goals, perception of the motivational climate and attitudes towards doping across gender, age, playing experience, type of university and year of study. University student-athletes were considered to be influential among their peers and the wider sporting society, and thus their favorable attitudes towards doping, or otherwise, could also permeate the wider society as they are regarded as role models by young people. The results revealed significant positive and inverse correlations between variables. Therefore, the null hypothesis that there are no significant relationships between achievement goal orientations, perceived coach-created motivational climate and attitudes towards doping in sports among university athletes was rejected.

The low scores on attitudes towards doping in the student-athletes portray intolerance for drugs use in sports. The participants also had a strong task orientation, implying strong dominance in the normative aspects of motivation which suggests that the athletes make reference to other persons when interpreting their success. This is buttressed by the fact that most of the athletes were participating in team sports. These findings are consistent with those of previous studies (Allen et al., 2015; Pensgaard & Roberts, 2003; Petroczi & Aidman, 2009; Sas-Nowosielski & Swiatkowska, 2008), which reported that task-oriented athletes were associated with more favourable attitudes towards anti-doping behaviour. Barkoukis et al. (2011) reported that task oriented athletes had lower past doping use and lower intention for future use. These studies have consistently reported that an extrinsic or ego-oriented motivational profile more strongly predicts a propensity to dope than does an intrinsic one. On average, athletes in this study reported experiencing less performance climate, which is a predictor of attitudes towards doping as indicated by Allen et al. (2015), thus they had more favourable attitudes towards anti-doping behavior.

The findings of this study showed that performance motivational climate is the only variable which significantly predicted doping intentions among the athletes (as seen in Table 3). Kavassanu, Elbe and Hatzigeorgindis (2015) had earlier reported similar findings where motivational climate was associated with moral functioning in sport. Previous studies have identified significant others, such as the coach, as important individuals in shaping athletes' doping and anti-doping behaviors (Johnson, 2011; Lentillon-Kaestener & Carstairs, 2010; Smith et al., 2010). Therefore, coach plays a crucial role in the nexus between attitudes towards doping and motivational climate. Most private universities in the region do not employ enough qualified coaches. Such universities generally rely on the services of fewer games tutors compared to public universities in the region. This may strain the few coaches mentally and physically, as they are not necessarily experts in all the specific sports, and could have the propensity of trying to achieve success through unorthodox means. This is demonstrated by the fact that there were significant differences in performance motivation climate between athletes in

private and public universities (Table 2) where athletes in private universities had higher scores in performance motivation climate in comparison to those in public universities.

Athletes who were likely to dope (as categorised per their attitude towards doping average scores) had significantly higher mean ranks in performance motivation climate than their counterparts who were least likely to dope, and scored significantly less in task orientation ($p = .022$). This finding agrees with that of Allen et al. (2015) who reported that task-oriented athletes were associated with more favourable anti-doping attitudes. There were significant differences in performance motivation climate based on the country of origin with those from Uganda having higher mean scores than Kenyan and Tanzanian athletes. This could be attributed to the fact that Uganda had the highest ratio of private to public university athletes among the respondents (1) compared to Kenya (0.46) and Tanzania (0.11). Private universities had more athletes on sports scholarships programmes compared to public universities. Athletes and coaches in these programmes may be under immense pressure to perform well in order to advertise their institutions. This may lead them to take great risks in order to obtain a competitive edge and enhance their performances “at all costs”, as their position at the university is highly dependent on them registering high sports performance rankings.

In the present study, there were no significant gender differences in Doping attitude, Ego orientation, Task orientation, and Performance motivation climate. This finding is surprising given the fact that studies have shown that males are more prone to use performance enhancing substances than females (Alaranta et al., 2006; Papadopoulos, Skalkidis, Parkkari & Petridou, 2006; Sas-Nowosielsi & Swiatkowska, 2008; Wichstrom, 2006). These studies have reported that females are less prone to false consensus (false belief that others are also doping) than males. Moreover, female athletes are more concerned about the negative consequences of doping behavior than their male counterparts and this contributes to their low propensity to dope (Zaletel et al., 2015).

Age was found to be related to doping intentions with older athletes inclined towards exhibiting favourable anti-doping attitudes. This could be attributed to having gained more knowledge and experiences. They may have learnt about the negative and long term consequences doping in sports. The lack of significant differences in year of study and playing experience require further scrutiny. Higher year of study and more playing experience are likely to be associated with more knowledge and mature character. The lack of any association between year of study and anti-doping attitude in the current study may point to the absence of structured doping education and mentorship programmes in the universities studied.

Strengths and limitations of the study

The current study has demonstrated significant relationships between achievement goal orientations, perceived coach-created motivational climate and attitudes towards doping in sports among East African university athletes - a population hitherto not appraised in this regard. Demographic factors that may influence doping attitudes have also been elucidated. A shortcoming of this study is that the component of mastery motivation climate was not evaluated directly. However, participants who scored low in performance motivation climate could be said to be inclined towards mastery, which has been shown to contrast with performance motivation climate (Granero-Gallegos et al., 2017).

Conclusions

Athletes in this study had high task orientations and this is associated with high anti-doping attitudes which may mean that athletes wish to uphold the principles of fair play. However, there is still a substantial percentage (29%) of student-athletes who are inclined towards pro-doping attitude and correlating positively with performance motivational climate. This result has several implications for the reward structure introduced by the universities' sports managers and administrators. For instance, coaches need to be conscious of the achievement goal orientation and motivational climate that they nurture during their interactions with their athletes and the consequences of such practices. Therefore, developing less performance (more mastery) coaching climate and fostering task orientation in sport-related goals are likely to detract athletes from developing pro-doping attitudes. In this regard, it is important for coaches to inculcate in their athletes the value of deriving pleasure and pride from mastery of sports skills as opposed to overemphasising and glorifying winning. There is need to conduct follow up studies in this area of inquiry to further explore how the various psychological variables correlate with actual doping behaviour in sports.

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