Postgraduate Students: An Alert about Quality of Life

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Abstract

Productivity demand of Brazilian Postgraduate Programs has increased as a result of global scientific and technological competitiveness, leading to stresses among researchers and students. Thus, this work was aimed at evaluating the quality of life of students of one Postgraduate Program in Agronomy through the WHOQOL-bref. Of the 36 students evaluated, there was a predominance of single women, childless, with a median age of 27 years, in a Master Degree, without paid work or scholarship. The sample studied presented values below the median of the Brazilian population, when corrected for gender and age, for the psychological, social relations and environment domains. Students with partner had lower values for physical and psychological domains and students with paid work showed a lower value for physical domain. The work phase affected the quality of life. The values for the environment domain increased when the student was writing the project, studying subjects and seeking theoretical framework and decreased when the student was analysing the data. As the University is the dominant environment for the students when in post graduation, the activities that are associated with academic infrastructure as library and laboratories, and with human resources as teachers and colleagues are realized with successful in relation to those that depend of the students themselves as the data analysis. These results alert us for the need for therapeutic interventions aimed at improving the health conditions of postgraduate students.

Keywords: collective health, mental health, self-image, social environment

1. Introduction

In most countries the current model of society has the motto "the more the merrier". This has generated individual and collective stresses, some leading to disease and others to local and global conflicts. In both undergraduate and postgraduate courses, this has drawn attention from the academia, although the results are still being published in scientific meeting or smaller journals (Louzada & Silva Filho, 2005; Santos & Alves Júnior, 2007; Malagris et al., 2009; Escobar & Verdinelli, 2010; Andrade et al., 2013; Valadares, Macedo, Alcântara, & Mafra, 2014; Silva & Vieira, 2015; J. S. Ferreira et al., 2016; R. E. Ferreira et al., 2016; Galdino, Martins, Haddad, Robazzi, & Birolim, 2016; Moura, Charão-Brito, & Lopes, 2017). Because of this, the leaders of important social, educational, political and economic groups should be alerted to evaluate the members of their groups, in order to slow things down and facilitate assertive decisions, without degrading the relationships. In this scenario, postgraduation has behaved similarly, favouring production, without evaluating the individual costs for students in training. We must also add to this the increasing occurrence of emotional and health problems in students (Evans, Bira, Gastelum, Weiss, & Vanderford, 2018), which demands an assessment of the situation and the stimulation of actions to promote health and prevent physical and psychological diseases.

One of the ways to conduct this situational evaluation is to use tools like the WHOQOL (World Health Organization Quality of Life), a construct of subjective quality of life approved by World Health Organization. This is a set of 100 questions, grouped into domains and sub-domains that allow us to access individual perceptions regarding one's quality of life in different aspects. As mentioned, it is an evaluation of a subjective construct, but has shown efficiency in assessing the quality of life of individuals and has predictive value for psychiatric changes and stress (Johansen, Wahl, Eilertsen, Weisaeth, & Hanestad, 2007; Chugh, Rehan, Unni, & Sah, 2013). The shortened version

of the questionnaire, the WHOQOL-bref, has been widely used and offered a population normality reference for Brazil (Cruz, Polannczky, Camey, Hoffman, & Flek, 2011).

In the educational environment, the demands on productivity of Brazilian Postgraduate Programs have increased in recent decades, as a result of scientific and technological competitiveness in the world. This has entailed varied stresses among teachers (Souto et al., 2016) and students (Teixeira, Rodrigues, Silva, Frota, & Almeida, 2017), which can affect the quantity and quality of work produced, given the association between quality of life and the academic performance (Langame et al., 2016).

Even when there is a system of student care, including doctors, psychologists and social workers, there is no way to avoid the situation. Students interact with each other, inside and outside the University, and the statistics end up being alarming in the sense that the number of suicides and attempted suicides has increased in recent years (Gonçalves, Freitas, & Sequeira, 2011; Pereira & Cardoso, 2015). It is essential to propose actions of prevention among students and for this it is important to know the profile of these students, which facilitates more effective actions.

The question in such cases is – what can the University do to stagnate or eliminate this type of event? What is the real risk of these complications in the population of postgraduate students? Knowing the students in all aspects, including physical and emotional could be the key to resolving this issue. In this sense, the WHOQOL-bref can offer a good insight of this scenario or serve as a diagnostic for more effective interventions in these groups.

With that in mind, this study aimed to evaluate the quality of life of the students of the Agronomy Postgraduate Program of the Universidade Federal de Uberlândia, using the WHOQOL-bref.

2. Material and Methods

2.1 The Study Scenario

In one of the disciplines of the Agronomy Postgraduate Program, we proposed therapeutic intervention and support to students so they could improve their quality of life, using the WHOQOL-bref questionnaire (Fleck et al., 2000), the systemic family constellations and the structure constellations method, with special focus on solutions (Franke-Bryson, 2013; Sparrer, 2013). This study is an account of the obtained evaluations. The proposal was approved internally by the Program and was presented to the students who voluntarily chose between participating in the constellation or just replying to the WHOQOL-bref. Participation and choice were spontaneous and everyone was free to leave the study at any time. Students interested in participating were accepted, with no criteria for inclusion or exclusion. All signed an Informed Consent Form and released data usage for so the results could be disclosed without their personal identification. The results of the constellation will not be treated here, restricting this work only to quality of life.

2.2 Sampling

A sample of 36 students in the Agronomy Postgraduate Program of the Universidade Federal de Uberlândia, Minas Gerais state, Brazil was evaluated as to quality of life. The evaluations were made in the first week of classes, in the first semester of 2017. The application of the questionnaires was done at the Universidade Federal de Uberlândia (UFU), in one of the classrooms of Campus Umuarama.

2.3 Evaluation Tools

The quality of life of the 36 students was assessed by the WHOQOL-bref (Fleck et al., 2000). This instrument is composed of 26 questions, two of them measuring general aspects of health and remainder divided into four groups or domains that address physical, psychological, social and environmental relations. A full description of this questionnaire and the proof of its validity can be accessed in Fleck et al. (2000). This is an abbreviated version of the questionnaire with 100 questions originally approved by the WHO (World Health Organization [WHO], 1996, 1998; The WHOQOL Group, 1998).

The profile of the 36 students included data related to gender, age, nationality (Brazilian or other), marital status (with or without a partner), number of children, paid work or scholarship, Master Degree or PhD and the semester in progress. We also assessed whether the student was choosing the project, studying disciplines, assembling or analysing experiments, performing statistical analyses, seeking a theoretical framework, preparing for the qualification exam, writing the dissertation or thesis. The satisfaction as to the choice of University, Agronomy Postgraduate Program, line of research, advisor and the research project were evaluated in a Likert scale of 0 to 10, ranging from the smallest to the greatest satisfaction. We also calculated the mean scale of satisfaction, through the

mean of the items answered by the student.

2.4 Statistical Analysis of the Data

The questionnaires were stratified according to the qualitative variables of the students' profile and tested for normality with the Shapiro-Wilk test. Since in most of the cases at least one group did not show a Gaussian distribution, the groups were compared with the independent medians test. The quantitative variables of the profile were correlated with the quality of life domains of the questionnaire, using the Spearman correlation test, and the significance being tested with Student's *t*-test. The quality of life domains of questionnaire were also correlated with each other. The analyses were performed in the SPSS 20 program, with 0.05 of significance.

3. Results

Table 1. Profile of 36 Students of the Agronomy Postgraduate Program – UFU, 2017, Evaluated for Quality of Life by the WHOQOL-bref

Factor	Stratum	% (*n*)
Gender	Male	47.22 (17)
	Female	52.78 (19)
Nationality	Other	2.78 (1)
	Brazilian	97.22 (35)
Marital status	Without partner	52.78 (19)
	With partner	47.22 (17)
Children	Without children	80.56 (29)
	With children	19.44 (7)
Lives with someone	No	16.67 (6)
	Yes	83.33 (30)
Paid work	No	63.89 (23)
	Yes	36.11 (13)
Scholarship	No	63.89 (23)
	Yes	36.11 (13)
Level (degree)	Master	58.33 (21)
	PhD	41.67 (15)
Absence of leave	No	91.67 (33)
	Yes	8.33 (3)
Phase - choosing research project	No	61.11 (22)
	Yes	38.89 (14)
Phase - studying subjects	No	5.56 (2)
	Yes	94.44 (34)
Phase - mounting experiments	No	50.00 (18)
	Yes	50.00 (18)
Phase - analysing experiments	No	47.22 (17)
	Yes	52.78 (19)
Phase - doing statistical analysis	No	72.22 (26)
	Yes	27.78 (10)
Phase - seeking theoretical framework	No	66.67 (24)
	Yes	33.33 (12)
Phase - preparing for qualifying exam	No	94.44 (34)
	Yes	5.56 (2)
Phase - writing dissertation or thesis	No	80.56 (29)
	Yes	19.44 (7)

	mean ± standard error (median)
Age (years)	29 ± 1.14 (27)
Number of people in household	2.09 ± 0.28 (2)
UFU choice	8.08 ± 0.29 (8.5)
Agronomy choice	8.08 ± 0.31 (9)
Search line choice	8.19 ± 0.42 (9)
Project choice	7.97 ± 0.39 (8.5)
Advisor choice	8.29 ± 0.38 (8.5)
Post-Graduation choice	8.14 ± 0.25 (8.2)
Semester of the course	3.11 ± 0.25 (2)
Phase of the work	3.22 ± 0.24 (3)

In the sample of students there was a predominance of women (52.78%; 19/36 – 19 students in 36 evaluated), Brazilians (97.22%; 35/36), with no partner (52.78%; 19/36), childless (80.56%; 29/36), living with someone (83.33%; 30/36), without paid work (63.89%; 23/36), without scholarship (63.89%; 23/36), studying master's degree (58.33%; 21/36) and without absence of leave (91.67%; 33/36) (Table 1). As for the phase of work, 38.89% (14/36) were choosing the topic for the research project, 94.44% (34/36) studying subjects, 50% (18/36) mounting experiments, 52.78% (19/36) analysing experiments, 27.78% (10/36) doing statistical analysis of the data collected, 33.33% seeking theoretical framework (12/36), 5.56% preparing for the qualifying exam (2/36) and 19.44% (7/36) writing the dissertation or thesis (Table 1). These results show that the group was analysed at the beginning of the course.

The perception of quality of life and satisfaction with health had median 4 (scale from 1 to 5), showing good self-perception of these items (Table 2). The median values of the domains physical, psychological, social and environmental relations were close to or greater than 60 (scale from 0 to 100), evidenced moderate quality of life for the group as a whole. Nevertheless, it was observed the presence of students with low scores in all areas, which is an alert for identifying students at risk and with potential for the proposition of therapeutic interventions to improve the quality of life. Among the students evaluated, 63.89% (23/36) were above the median of the Brazilian population about the physical domain (Table 2), while for the other domains, the students were below the median of the Brazilian population (69.44%, 66.67% and 55.56% for the domains psychological, social relations and the environment, respectively). This reinforces that there is the presence of many students with quality of life scores under normative values for the Brazilian population, showing that the WHOQOL-bref is efficient in identifying students at risk or with low quality of life.

Table 2. Values of the Domains of the QOL (quality of life), According to the WHOQOL-bref Instrument Applied to 36 Students of the Agronomy Postgraduate Program – UFU, 2017

Domain	mean ± standard error (median)	Minimum - Maximum
Perception of the QOL	3.58 ± 0.10 (4)	2 – 5
Satisfaction with health	3.42 ± 0.19 (4)	1 – 5
Physical domain	67.46 ± 2.50 (67.86)	28.57 – 96.43
Psychological domain	59.95 ± 2.34 (60.42)	29.17 – 83.33
Social relations domain	60.42 ± 3.41 (58.33)	8.33 – 100.00
Environmental domain	59.03 ± 1.74 (59.38)	37.50 – 81.25
Domain	**Percentage in 50 percentile [1], corrected by gender and age (*n*)**	
	Below	Above
Physical	36.11 (13)	63.89 (23)
Psychological	69.44 (25)	30.56 (11)
Social relations	66.67 (24)	33.33 (12)
Environmental	55.56 (20)	44.44 (16)

[1] Normative values obtained by Cruz et al. (2011)

The profile of the students interfered on quality of life (Tables 3 and 4). Students without partner showed greater median for the physical (71.43 versus 60.71) and psychological domains (66.67 versus 54.17), when compared to students with partner. Students without gainful employment showed higher median for the physical domain that they

have it (71.43 versus 57.14). The phase of the work affected the domain environment of the instrument (Tables 3 and 4). Students who were in the choice of the project, studying subjects, and seeking theoretical framework had higher median than those who were not (62.50 versus 54.69 and 59.38 versus 43.75, 62.50 versus 56.25, respectively). Those who were not performing statistical analyses had higher median than they were (62.50 versus 51.56).

Table 3. Probability Result Based on the Median Test for the Comparison between the Profile Strata of 36 Students of the Agronomy Postgraduate Program – UFU, 2017, Evaluated for Quality of Life (QOL) by the WHOQOL-bref

Factor	WHOQOL-bref domains					
	Q1	Q2	PhyD	PsyD	SRD	ED
Gender	0.955	0.765	0.206	0.156	0.973	0.108
Nationality	-	-	-	-	-	-
Marital status	0.955	0.765	0.019	0.050	0.403	0.853
Children	0.434	0.706	0.478	0.973	0.644	0.923
Lives with someone	0.364	0.549	0.423	0.729	0.242	0.333
Paid work	0.769	0.535	0.010	0.540	0.150	0.388
With scholarship	0.769	0.535	0.660	0.307	0.466	0.196
Level	0.864	1.000	0.979	0.682	0.711	0.388
Absence of leave	0.126	1.000	0.300	0.704	0.098	0.515
Phase - choosing research project	0.817	0.285	0.277	0.246	0.733	0.286
Phase - studying subjects	0.049	0.745	0.585	0.369	0.186	0.031
Phase - mounting experiments	1.000	0.655	0.698	0.771	0.641	0.556
Phase - analysing experiments	0.955	0.765	0.441	0.876	0.714	0.168
Phase - doing statistical analysis	0.615	0.868	0.390	0.126	0.412	0.030
Phase - seeking theoretical framework	0.726	0.635	0.956	0.973	1.000	0.021
Phase - preparing qualifying exam	-	-	-	-	-	-
Phase - writing dissertation or thesis	0.434	0.706	0.387	0.930	0.705	0.923

Q1: answer of question 1 of the questionnaire – Perception of QOL, Q2: answer of question 2 of the questionnaire – Satisfaction with health, PhyD: Physical domain, PsyD: Psychological domain, SRD: Social relations domain, ED: Environmental domain

Table 4. Stratification of the Profile of 36 Students of the Agronomy Postgraduate Program – UFU, 2017, Evaluated for Quality of Life (QOL) for the Qualitative Variables of the Profile That Significantly Affected ($P < 0.05$) Some Domain of the WHOQOL-bref Instrument

Factor	Domain	Stratum	Mean	SE	Median
Marital status	PhyD	Without partner	72.93	2.75	71.43
		With partner	61.34	3.89	60.71
	PsyD	Without partner	64.25	2.41	66.67
		With partner	55.15	3.91	54.17
Paid work	PhyD	No	72.21	2.61	71.43
		Yes	59.07	4.40	57.14
Phase - choosing research project	ED	No	57.53	2.39	54.69
		Yes	61.38	2.40	62.50
Phase - studying subjects	Q1	No	4.00	1.00	4.00
		Yes	4.00	0.00	4.00
	ED	No	43.75	3.13	43.75
		Yes	59.93	1.71	59.38
Phase - doing statistical analysis	ED	No	61.30	1.90	62.50
		Yes	53.13	3.29	51.56
Phase - seeking theoretical framework	ED	No	56.25	1.90	56.25
		Yes	64.58	3.09	62.50

SE: standard error, PhyD: Physical domain, PsyD: Psychological domain, Q1: answer of question 1 of the questionnaire – Perception of QOL, ED: Environmental domain.

Significant negative correlations were found between age (rs =-0.369) and be in the choice of the project (rs =-0.356) with the perception of quality of life (Q1), indicating that the greater age, the lower the perception of quality of life, which is also impaired when the student is choosing the project to be developed (Table 5). Significant and positive correlations were detected between satisfaction with the choice of research (rs = 0.365), satisfaction with the choice of Postgraduate Program (rs = 0.458) and mean satisfaction scale (rs = 0.455) with the psychological domain (PsyD); between the scale of satisfaction of the choice of Agronomy (rs = 0.351), research (rs = 0.373), Postgraduate Program (rs = 0.491) and mean satisfaction scale (rs = 0.489) with the domain of social relations (SRD) and between the choice of Agronomy (rs = 0.400), the line of research (rs = 0.417), the project (rs = 0.350), Postgraduate Program (rs = 0.369) and mean satisfaction scale (rs = 0.367) with the domain environment (ED) (Table 5). These positive correlations show that be right psychologically, socially and integrated to the environment favour the postgraduate activities.

Students who had greater satisfaction with health were those who had the highest perception of quality of life (rs = 0.467). Be physically fit and well integrated socially increases health satisfaction (rs = 0.341 and 0.391, respectively). The physical domain correlated positively with the psychological (rs = 0.547) and with social relations (rs = 0.361); the psychological with social relations (rs = 0.609) and social relations with the environment (rs = 0.428) (Table 5). This shows the importance of physical and mental health to improve the quality of life, which favours the success in the postgraduation.

Table 5. Spearman Correlation between the Quantitative Variables of the Profile of 36 Students of the Postgraduate Program in Agronomy-UFU, 2017, Evaluated for Quality of Life (QOL) and Domains of the WHOQOL-bref Instrument

	WHOQOL-bref domains					
Variable	**Q1**	**Q2**	**PhyD**	**PsyD**	**SRD**	**ED**
Age	-0.369*	-0.196	-0.090	0.104	-0.096	-0.005
Number of people in household	-0.283	0.185	0.106	0.097	0.173	-0.167
UFU choice	-0.080	0.259	0.291	0.203	0.294	0.103
Agronomy choice	-0.047	0.24	0.107	0.311	0.351*	0.400*
Search line choice	-0.069	0.172	0.186	0.365*	0.373*	0.417*
Project choice	-0.356*	0.185	0.074	0.215	0.283	0.350*
Advisor choice	-0.297	0.116	-0.035	0.138	0.227	0.180
Post graduation choice	-0.259	0.277	0.262	0.458**	0.491**	0.369*
Mean scale satisfaction	-0.259	0.277	0.259	0.455**	0.489**	0.367*
Semester	-0.123	-0.110	-0.200	-0.147	-0.137	0.059
Work phase	0.115	-0.086	-0.077	-0.022	-0.077	0.005
Domain	**Q1**	**Q2**	**PhyD**	**PsyD**	**SRD**	**ED**
Q2	0.467**					
PhyD	0.028	0.341*				
PsyD	0.175	0.241	0.547**			
SRD	0.241	0.391*	0.361*	0.609**		
ED	0.253	0.195	0.212	0.309	0.428**	

Q1: answer of question 1 of the questionnaire – Perception of QOL, Q2: answer of question 2 of the questionnaire – Satisfaction with health, PhyD: Physical domain, PsyD: Psychological domain, SRD: Social relations domain, ED: Environmental domain, ** $P < 0.01$, * $P < 0.05$

4. Discussion

The sample consisted of young single adults, who live with someone, and who do not have paid work. As most of them have no scholarship, this is one of the items that can generate most discomfort, mainly psychological. Since this is a convenience sample, with a low n, the comparison of the profile of these students with others (institutions or scenarios) is impaired and is not justified. The comparison is also unfeasible due to the scarcity of studies that trace the profile of the Brazilian postgraduate students. In addition, these studies are usually restricted to certain Institutions or Programs (Rezende, Mello, Granjeiro, Nakanishi, & Oliveira, 2011; J. S. Ferreira et al., 2016; R. E. Ferreira et al., 2016; Amadeu & Justi, 2017; Teixeira et al., 2017). There is a predominance of quality of life studies for undergraduate students, focusing on the areas of health (see Kawakame & Miyadahira, 2005; Feodrippe, Brandão,

& Valente, 2013). This is probably due to the proximity of the health area with the instruments for assessing quality of life.

The present study shows an alarming result for such a small sample, due to the high frequency of individuals below the Brazilian median in terms of quality of life, which increases the need for therapeutic interventions. The data obtained confirm the tendency of increasing health problems, especially those of a psychological nature, discussed in the literature (Evans et al., 2018). Despite the advances that Brazil has had in numbers of Postgraduate Programs (Gouvêa, 2012; Moritz, Moritz, Pereira, & Maccari, 2013; Alves & Oliveira, 2014), the results obtained in the present study lead to a reflection that something needs to be done to curb this increase in associated health problems. There is a gap between graduating and entering the labour market. By the end of the 70s, a job in the area in which the student graduated was a certainty. This gave a financial break to families who felt confident that their mission had been fulfilled. With the encouragement of postgraduate studies, the search for a good job was replaced by admission exams to postgraduate courses. The possibility of obtaining a scholarship proved to be a good alternative, postponing the entry into the labour market without burdening the family. However, from a socio-economic standpoint, there is the impression that graduated people are self-sufficient, but reality shows something different. These people still need financial help because they chose to continue their studies. The family and the students themselves expect a financial independence that still does not exist, and so they transfer the financial responsibility, that was of the family, to the Postgraduate Programs. This causes discomfort to the three segments – to the professional who is still in training, to the family who cannot continue to give financial support indefinitely and to the universities that start to have skilled labour in their ranks which they usually cannot hire.

Considering other countries, Malaysian and Iranian postgraduate students showed mean values close to 60 in the WHOQOL-bref (Vakili, Mohamad, & Vakil, 2012). Similar results were found for postgraduate medical students from India, except for the social domain (41.74) (Bullappa & Kengnal, 2017). Medical postgraduate students from Pakistan had similar quality of life scores in all domains, and this score was influenced by gender, type of specialty, training phase and type of institution where they were studying (Ghazanfar, Iqbal, & Naseem, 2018).

The variables of the student profile of the Agronomy Postgraduate Program that affected some domains were marital status and paid work. Those without a partner had a greater score in the physical and psychological domain, and no paid work increased the score in the physical domain. Similar results showed that the marital status, religiosity and scholarship in postgraduate studies were relevant in the quality of life (QOL) of *stricto sensu* postgraduate students in dentistry (Teixeira et al., 2017). Being focused only on postgraduate studies seems to be an essential factor for maintaining the quality of life of students. Evaluating residents in Otorhinolaryngology, the main difference in quality of life was in relation to the year of residency, being worse in the first and last years, and regarding gender, being better for men (Rezende et al., 2011). Indian postgraduate students in the medical field showed differences between genders for the physical domain, with higher QOL in single men, who also had a higher score in the social domain (Bullappa & Kengnal, 2017). The analyzed group also showed differences in the social and environmental domains in relation to the number of years in postgraduation, both increasing over time (Bullappa & Kengnal, 2017).

For the students of the Agronomy Postgraduate Program of the UFU, the physical domain was affected by having paid work, with QOL being lower for those who work. This finding also raises a differentiated look for the students who work, because they suffer the pressure of both the postgraduate course and work. The socio-economic condition seems to have a very strong role in several other aspects of quality of life. Medical students from the State University of Rio de Janeiro, who were evaluated for quality of life, were strongly influenced by the social class and form of admission into the university, where the students who did not enter through quota incentives and the students of social class A (highest economical class) showed higher scores for most domains (Chazan & Campos, 2013). The satisfaction with the medical course and the idea of dropping the course was also directly correlated with the domains of the WHOQOL-bref (Pereira et al., 2017).

The results obtained here for the influence on QOL of the phase of the study in which the student is, represent an important finding, as this can show which factors are directly associated to the decrease of QOL in postgraduation. It seems that the QOL is changing according to the stage in which the student is in their studies and this is true for undergraduate and postgraduate students (Alves, Tenório, Anjos, & Figueroa, 2010; Rezende et al., 2011; Bullappa & Kengnal, 2017). In most studies the quality of life worsens at the beginning of the course, improves in the middle and worsens at the end of the course. This is certainly because in the beginning there is apprehension as to the unknown and at the end, apprehension regarding approval and release into the labour market. In this sense, the use of instruments to assess satisfaction with Postgraduate Programs and its relationship to quality of life scores should be stimulated as a routine follow-up practice. Some proposals have been made for undergraduate courses such as that

presented by Dutra, Ávila and Mattos (2017).

5. Conclusion

The data obtained show a worrying scenario, despite the low sample size, and point to the need for a deeper assessment of the quality of life of the post graduation students, in association with the socio-demographic profile and the satisfaction in relation to the choices that involve the course. The data confirm the presence of health problems, especially those of a psychological nature, in the post graduation students.

6. Acknowledgements

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