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ATTITUDE AND ABILITY TO OVERCOME BARRIERS IN PRACTICING OF PHYSICAL EXERCISE AMONG ACADEMY STAFF IN FACULTY OF MEDICINE, UITM

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Abstract

Several studies had highlighted the importance of exercise as a conservative treatment in medical world. The highly increased of the burden of disease especially the Non- communicable disease contributed to the increasing of the needs toward achieving optimum exercise benefits. It is evident that medical practitioners plays important role to implement and promote exercise among general population. Identifying the attitude of academic staff towards physical exercise was crucial in this aspect. Objectives: To determine the attitude and ability in overcoming exercise barrier in performing physical exercise in addition to identify the correlation between them among academic staff with and without medical graduated Methodology: A cross sectional study had been conducted, from January- September 2015, in two UiTM campuses (Sungai Buloh and Selayang). Sample of 155 academic staff consist of both medical and non-medical graduate was collected. Each participant was given well-structured questionnaire to be answered. Questionnaires contain two domains; the first one consists of six items reflecting either positive (2) or negative (4) attitude toward exercise. The second domain consists of seven items reflecting the ability in overcoming exercise barrier. Five-point-scoring: (1) very much overcome - (5) not at all, were given for each item. In addition, the questionnaire also contains information about the socio-demographic details of each participant. Result: The majority (95.5%) having good attitude towards physical exercise. No significant difference in the rate of good attitude between medical (95.7%) and non-medical (93.3%) graduate. There is no correlation between the general attitudes towards exercise with the ability to overcome exercise barriers. Significantly, male shows higher rate (77.4%) of ability of overcoming exercise barrier compare to woman (43.3%). No significant association between other socio-demographic characteristic (age, race, marital status) with neither general attitude towards exercise nor ability in overcoming exercise barrier. Conclusion: The majority of academic staff having good attitude. No significant difference between Medical and non-Medical graduate in terms of attitude and ability of overcoming exercise. No significant association between various socio-demographic profile and attitude towards exercise except for gender.

Keywords

Attitude; Exercise; General Impression; Overcoming Barrier; Medical and Non-Medical Staff

1. Introduction

The term “physical exercise” is commonly used interchangeably with "physical activity". According to The American College and Sports Medicine, they defined physical activity as any

body movements which result by the contraction of skeletal muscle that increases energy expenditure above a basal level. While exercise is a form of physical activity that is planned, structured, repetitive, and performed with the goal of improving health or fitness. In short, exercise is a subset of physical activity (Garber et al., 2011; Pescatello & American College of Sports, 2014). Engagement in regular physical exercise is an important part of a healthy lifestyle. In order to achieve the health benefits of physical exercise, it is important to exercise regularly. The recommended exercise is 150minutes/week of moderately intensity exercise (Pescatello & American College of Sports, 2014).

The burden of non-communicable disease (NCD) was reported to be increasing and was becoming the top leading cause of death worldwide. It account for more than 36 million people death in 2008. Physical inactivity were one of the tenth major cause of death worldwide and had 20-30% higher chances and risks for all-cause mortality(WHO, 2015).Survey showed that 23% of the adults with age 18 years and above were physically inactive worldwide with 15.9% of the Asian are physically inactive(Global Health Observatory, 2010).Unfortunately, in Malaysia, the prevalence of physical inactivity among Malaysian adults on 2011 was 35.7% and 35.2% respectively(Chan et al., 2014; The Institute for Public Health, 2011). Yet, the idea of exercise practice as a conservative treatment toward preventing NCD was well recognized.

Medical practitioners are considered to be the center of information on health and the frontline of community preventative health services. They were expected to be promoting a healthy lifestyle in which act as the key to longevity and healthier life by endorsing the principles of prevention. Based on research done found that the mortality rate for the doctors were low (83%) compare to general population (O' Hagan, 1998). It was a very important matter for doctors to be physically and mentally active not only for their wellbeing but also for their patients as well as the nation's health (Wang, 2013).Good attitude towards exercise eventually will reflect a better understanding and practice toward exercise as a conservative treatment (Terry, Erickson, & Johnson, 1996).Unfortunately, several studies had shown that medical practitioner perceived lower knowledge on exercise (Roos, 2014; Weiler, 2012).

Attitude were define as 'A way of being, A position'. These are leanings or "tendencies to....".It is an intermediate variable between the situation and the response to this situation. Attitudes are not directly observable as are practices (Sybille et al., 2011).Typically, when we refer to someone's, attitude, we are trying to analyze between the state of her behavior and emotion. The attitude towards practice of exercise, particularly encompassed of his/her perception towards the exercise, their view point and as well as their action which describe by

their involvement (Jeffrey, 2005). Thus, it is importance to know the attitude towards exercise which can lead to better promotion of exercise as a conservative treatment and practice of exercise among medical practitioner (Gill, 1986).

Ten barriers towards exercise includes finding; no time, inconvenient, lack of self-motivation, unenjoyably, boring, lack of confidence, fear of injuries, low self-efficacy, lack of management skill, lack of encouragement and support, and lack of facilities (Sallis, et al., 1992). Other studies also reveal that inadequate money (40.3%) and feeling too tired (38.1%) were the most frequently reported barriers to physical activity (Reichert, et al., 2007).

Another study conducted at Japan showing the highest barrier towards exercise was due to lack of time (Ishii et al., 2009).

Physician's behavior is influenced by their general attitude to the importance of preventive care, and those who view exercise as an essential health contributing factor are more likely to recommend, counsel and advice for exercise. We hypothesized that academic medical staff having high attitude toward physical exercise particularly those working in clinical field. Therefore this study were aiming to identify the differences in attitude towards exercise and ability in overcoming exercise barriers with variation of socio-demographic characteristics particularly between participants with medical and non-medical graduate and to correlate the attitude towards exercise and the ability to overcome exercise barrier.

2. Methodology

Prior to embarking the main project, pilot study was carried out among staff nurses in University Technology MARA Specialist Medical Centre to determine the appropriateness of the questions and content validity. Consequently, items on the questionnaire that was confusing or ambiguous were either modified or cancelled. A cross sectional study was conducted among academic staffs of Faculty of Medicine, University Technology MARA from both Sungai Buloh and Selayang campuses, for a period of 9 month from January 2015 to September 2015. Approval from ethic community of Faculty of Medicine was obtained. Inclusion criteria for the study includes all the academic staff of UiTM Sungai Buloh and Selayang with age more than 25, both genders, regardless of involvement in practice of physical exercise, and were available during period of distribution of questionnaire. Exclusion criteria involve the 10 academic staff who were involved in ethics committee and the academic staff that were supervising this study. Total academic staff were 230, compose of Medical and Non-Medical graduate. Medical graduate include all the clinical staff and part of preclinical department. By using PS software version

3.9.14, the estimated sample size was 227. Considering 10% as a defaulted rate, the final sample size required were 250. However, as the whole academic staff were 230 individual, by subtracting 10 individual (8 ethics committee and 2 supervisor), we consider 220 as sample size required. Thus, 220 questionnaires were distributed along with the consent form. Structured questionnaire consist of closed ended questions was used to assess respondents' attitude towards exercise. The questionnaire consists of 2 parts. The first part was pertaining about the socio-demographic information (age, gender, medical illness, department of medical field and etc). Second part was regarding attitude of respondent towards physical exercise. The questionnaire also includes the involvement in practice of exercise.

The attitude part was further divided into two domains: (a) general impression towards exercise (b) ability to overcome barriers toward physical exercise. General impression involve six items (feel toward exercise; to do exercise, lost interest, too late to start, unbeneficial, boring, wanted to start but restrained by time). These items will be rate by answer yes or no. Out of these 6 items, only two (feel; to do exercise, wanted to start exercise but restrained by time) were reflecting positively towards good attitude while the others reflecting negatively by answering yes. By using mean as cut of point between two groups, summation as well as mean of marks was calculated. Minimum mean score is 0 while the maximum be 6, the cut-off point is 3. Mean score more than 3 reflecting good attitudes while lower than that reflecting poor attitude.

Second domain was accessing the ability to overcome barrier only among respondent who performed exercise. This domain comprised of 7 items related to ability to overcome exercise. These include I could; try hard to overcome barrier, exercise during workday, accomplish exercise goals, exercise even when tired, find ways to exercise, exercise anywhere, exercise to maintain and reduce weigh). Each item was measured on a five-point- scale: (1) very much overcome (2) agree (3) not sure (4) not me (5) not at all. The respondent were required to rate themselves accordingly. The minimum score was 7 while maximum was 35. Cut of point is set to 21 and the mean score less than 21 will be considered having good ability while more than 21 were consider having poor ability.

Correlation between the attitude and respondent ability towards overcoming exercise barrier among respondent who perform exercise were also calculated by correlate the total marks between the two using SPSS version 22.

The collected data was analyzed by using SPSS version 22. Descriptive statistic pertaining frequency and percentage of the data were calculated. Chi square test were also used to find the association between socio demographic characteristic contributing to difference of

attitude towards exercise and the relationship between attitude among medical graduate and non medical graduate toward practice of physical exercise. Age were divided into two groups (25-44 years old) and (45 years old and above). Body mass index were also divided into two groups: underweight/normal (<25) and overweight/obese (≥ 25).

3. Result

Out of 220 distributed questionnaires, only 155 returned in complete states, giving a rate of respondent (70.5%). The socio-demographic and medical status was shown in Table 1. The age of respondents ranged from 25 to 72 years with the mean of 36.1 ± 9.074 years old. Respondents comprised of 44 males (28.4%) and 111 female (71.6%) which included 140 medical graduate (90.3%) and 15 non-medical graduate (9.7%). Malay was the majority (87.7%), Indian (5.8%), others (4.5%) and Chinese (1.9%). 69% of respondents were in teaching clinical years, while 31% were in pre-clinical years. 124 (80.0%) were free from any health problem while 31 (20.0%) of the respondent having at least one of medical problem such as Diabetes Mellitus (98%), asthma (4.5%), gastritis (1.3%), hyperthyroid (1.3%), hypercholesterolemia (1.3%), lymphadenopathy (0.6%), chronic myeloid leukemia (0.6%), lacunar stroke (0.6%), end stage renal failure (0.6%), back pain (0.6%), muscle cramp (0.6%) and pregnancy (0.6%). The mean BMI for the whole participant was 24.8 ± 4.7 kg/m² with the range of 15.6-41.8 kg/m². Moreover by categorizing BMI according to WHOM, more than half of the participant (52.9%) were within normal range (18.0- 24.9 kg/m²).

Table 1: *Socio-demographic and Medical Characteristics of the Academic Staff*

Characteristic		N (%)
Age	<45	134(86.5)
	≥ 45	21 (13.5)
Gender	Male	44(28.4)
	Female	111(71.6)
Marital status	Single/Divorced	43 (29.7)
	Married	109 (70.3)
Race	Malay	136(87.7)
	Non Malay*	19 (12.3)
Medical Cluster	Pre-Clinical Years**	48 (31)
	Clinical Years***	107 (69)
Graduate	MD graduate	140 (90.3)
	Non-MD graduate	15(9.7)
Medical Illness	Yes	31 (20)
	No	124 (80)
BMI	Underweight/Normal	90(58.7)
	overweight/Obese	65 (41.3)

*Non-Malay: Chinese, Indian, Pakistan and Russian

** Academic Staff of Pre-Clinical Years: Teaching 1st and 2nd year student

*** Academic Staffs of Clinical Years: teaching 3rd, 4th, 5th year student

In respect to the attitude, it was assessed based on their ability to overcome barrier to exercise and on their general attitude towards exercise. Majority academic staff had good attitude towards exercise with total mean score of 4.72 ± 0.998 . 148 (95.5%) and only 7 (4.5%) had a poor attitude towards exercise. However, we found that out of 148 participants with good attitude, only 63.5% were actually practicing exercise and other 36.5% deny of practicing exercise. For general attitude regarding exercise, all respondent agree that they should exercise. Interestingly, more than half (57.4%) were losing their interest in physical exercise while quarter (24.5%) feel unbeneficial, 11% considered exercise boring and 8.9% feel too late to do exercise. However, 72.9% wanted to exercise but constrained by time.

Table 2: *Attitude of the academic staff towards physical exercise*

Feel towards exercise	Yes (N (%))	No (N (%))
To do exercise	155(100.0)	0
Lost interest	89(57.4)	69(42.6)
Too late to start	13(8.4)	142(91.6)
Unbeneficial	38(24.5)	117(75.5)
Boring	17(11.0)	138(89.0)
Wanted to start exercise but restrained by time	113(72.9)	42(27.1)

Regarding the ability to overcome barrier, only 98 (63.5%) participants who were performing exercise were involved. Out of those, only 55.3% had good ability to overcome exercise barrier while 44.7% were having poor ability to overcome barrier. Majority (83.7%) of the respondent were trying hard enough to overcome the barriers in regards to exercise. 87.8% could exercise to maintain or reduce weight, 63.3% could accomplish their activity and exercise goals, and 62.2% managed to practice exercise during workday. On the other hand, about three quarter (74.4%) and two third (62.2%) of the respondent stated that the place and tiredness respectively as barrier to exercise. Whereas only 27.6% and 37.8% able to overcome the barrier of place and tiredness respectively.

Table 3: Ability of the academic staff to Overcome Barrier of Physical Exercise

Overcoming barriers I could;	Mean ± SD	Good Ability	Bad Ability
Try hard to overcome barrier	2.65±1.006	82 (83.7%)	16 (16.3%)
Exercise during workday	3.15±1.170	61 (62.2%)	37 (37.8%)
Accomplish exercise goals	3.18± 0.978	62 (63.3%)	36 (36.7%)
Exercise even when tired	3.78±1.153	37 (37.8%)	61 (62.2%)
Find ways to exercise	2.95±0.967	72 (73.5%)	26 (26.5%)
Exercise anywhere	2.97±1.000	71 (72.4%)	27 (27.6%)
Maintain and reduce weight	2.42±1.083	86 (87.8%)	12 (12.2%)

To study the association between socio-demographic and medical background details with attitude, we found that the respondents aging 45 years and more belonging to the group of good attitude in higher rate (85.7%) compared to those below 45 years old (81.3%). However the difference was not significant ($\chi^2=0.234$, $p=0.768$). Similarly no significant association were detected between male (84.1%) with females (81.1%), Malay (81.6%) with non-Malay (84.1%), married (84.4%) with single/divorced (76.1%), Clinical lecturers (84.1%) with preclinical lecturers (68.8%), medical graduate (95.7%) with non-medical graduate (93.3%), health problem (83.9%) with no health problem (81.5%), BMI of underweight/normal (84.4%) with overweight/obese (78.5%).

Table 4: Attitude toward Exercise and Its Association to the Socio-Demographic Profile

Socio-Demographic Characteristics		Total(n=155)	General Attitude		χ^2	p-value
			Good, N (%)	Poor, N (%)		
Age	<45	134	109 (81.3)	25 (18.7)	0.234	0.768
	≥45	21	18 (85.7)	3 (14.3)		
Gender	Male	44	37 (84.1)	7 (15.9)	0.193	0.818
	Female	111	90 (81.1)	21 (18.9)		
Race	Malay	136	111 (81.6)	25 (18.4)	0.076	1.000

	Non Malay	19	16 (84.2)	3 (15.8)		
Marital status	Single / divorced	46	35 (76.1)	11 (23.9)	1.512	0.255
	Married	109	92 (84.4)	17 (15.6)		
Department of medical field	Preclinical	48	37 (77.1)	11 (22.9)	1.106	0.367
	Clinical	107	90 (84.1)	17 (15.9)		
Graduate	MD Graduate	140	134 (95.7)	6 (4.3)	0.178	0.517
	Non-MD Graduate	15	14 (93.3)	1 (6.7)		
Medical illness	Yes	31	26 (83.9)	5 (16.1)	0.098	1.000
	No	124	101(81.5)	23 (18.5)		
BMI	<25	90	76 (84.4)	14(15.6)	0.913	0.399
	≥25	65	51 (78.5)	14(21.5)		

Staffs more than 45 years old and above appeared to have higher ability (58.8%) compare to those the staffs less than 45 years old (53.1%). Half of the Malays (54.9%) and non-Malays (50.0%) races having good ability toward overcoming exercise. Married staff (59.4%) tended to have good ability towards overcoming exercise barrier compared to the single and divorced (44.1%).54.9% Clinical staffs had good ability compared to 53.4% of preclinicalstaffs. Non-medical graduates tended to have (60.0%) higher ability compared to the Medical graduates (53.4%). The ability of those with medical illness was slightly higher compared to those without medical illness. Those with BMI more than 25(68.0%) were having better attitude compared to those with BMI less than 25 (49.3%).

Table 5: *Ability to Overcome Barrier toward Exercise and Its Association to the Socio-Demographic Details*

		Total (n=98)	Ability to overcome barriers		χ^2	p-value
			Good N (%)	Poor N (%)		
Age (years)	<45	81	43(53.1)	38 (46.9)	0.186	0.791
	≥45	17	10 (58.8)	7 (41.2)		
Gender	Male	31	24 (77.4)	7 (22.6)	9.945	0.002
	Female	67	29 (43.3)	38 (56.7)		

Race	Malay	82	45 (54.9)	37 (45.1)	0.128	0.788
	Non Malay	16	8 (50.0)	8 (50.0)		
Marital status	Single / divorced	34	15 (44.1)	19 (55.9)	2.081	0.202
	Married	64	38 (59.4)	26 (40.6)		
Department of medical field	Preclinical	27	14 (51.9)	13 (48.1)	0.075	0.823
	Clinical	71	39 (54.9)	32 (45.1)		
Graduate	MD	88	47 (53.4)	41 (46.6)	0.157	0.750
	Non-MD	10	6 (60.0)	4 (40.0)		
	Yes	20	11 (55.0)	9 (45.0)		
	No	78	42 (53.8)	36 (46.2)		
	<25	73	36 (49.3)	37 (50.7)		
	≥25	25	17 (68.0)	8 (32.0)		

Based on study, there was no correlation between general impression and ability to overcome exercise where $r=-0.037$, $p\text{-value}= 0.718$

4. Discussion

With the improvement of modern technologies nowadays, the prevalence of physical exercise among the general populations is decreasing tremendously. It is believed that the sedentary lifestyles are becoming rule especially in developed country (Kubaisy, Mohamad, Ismail, Abdullah, & Mohd Mokhtar, 2015).

The response rate in our study was much higher (70.5%) compared to the other study conducted among physicians. It was twotimes higher than study done by other researcher showing 35.2% of response rate(Kassam et al., 2014). It was said that the response rate of general practitioner were lower compared to the general population (Cummings, Savitz, & Konrad, 2001). However, we still consider this rate as low. Lower response from general practitioner were said to be due to time restriction, work demands and frequently being approached in many surveys (Flanigan, McFarlane, & Cook, 2008).

4.1 Attitude toward physical exercise

Majority (95.5%), of our staff also were having good attitude towards physical exercise. In concordance with study done in African (Roos, 2014).

Several studies stated benefits of exercise (Briazgounov, 1988; Igwesi-Chidobe et al., 2015). Person who works in medical line should be precisely aware of it. Interestingly, there were several study showing minority (34%, 25%) of the physicians considered exercise as unbeneficial respectively (Abbyrhamy et al., 2011; Lawlor et al., 1999). Similarly, our study found that 25% having same perception.

There are several points that could explain this result. First that the efficiency of exercise prescribing were not much recorded in medical practitioner (Roos, 2014). Another reason were the concept of academic staff which considered exercise as unnecessary due to relatively young age (<45 years old) and considering themselves as healthy. They also did not obtain enough benefits from doing exercise because they might not performed exercise adequately as recommended leading to poor efficacy of exercise. General practitioner were also considered to have significantly low compliance rate in practicing physical exercise (Abbyrhamy et al., 2011). Specially, 72.9% of the academic staff mentioned time as one of the restricting factor. This was supported by study showing that decrease in exercise practiced were due to the time demanding and stressful nature of medical training and practiced, in which can lead to inadequate time and motivation to exercise (Abbyrhamy et al., 2011).

Our result detected that, 57.4% having lost of interest to perform exercise which was more than two times higher than previous study (Khan et al., 2013). We could explain this result as lack of interest may be due to their concept that exercise was unbeneficial as 25% of them were having that concept. Another point, staffs might have misconception regarding physical exercise and consider that as long as their work and activity was heavy, they consider it as exercise.

Several studies were agreeing that higher rate of attitude toward physical exercise among male (Boyington et al., 2008; Troiano et al., 2008). There are also increased in rate of good attitude among those age >45 years old (Awotidebe et al., 2014). Different races did contribute to different attitude towards exercise (Im et al., 2013). Normal BMI also perceived higher rate of good attitude (Health and Social Care Information Centre, 2013; Jackson, Gao, & Chen, 2014). Married couple also tended to have higher rate of good attitude (Beverly & Wray, 2010).

They attributed these variation and cultural environment health status, knowledge and education. However, in contrast to the above studies, our study found insignificantly higher rate of positive attitude toward exercise among old age (86.7%), male (84.1%), non malay (84.2%), married (84.4%), diseased (83.9%) normal BMI (84.4%), medical graduated (95.7%), and participant working in clinical field (84.1%). This can be explained by the environmental

influence. The academic staff of Faculty of Medicine UiTM composed of majority of medical graduated and the other were having at least Master degree in basic sciences in which they should had at least basic knowledge in importance of exercise.

4.2 Ability toward overcoming exercise barrier

Regarding ability, majority of our staffs possessed good ability in overcoming exercise barriers. Most of our staffs were able to overcome exercise barrier such as body weight, finding ways and place to exercise, time, and balancing work and exercise. This indicated that the academic staffs were having self-motivation and enjoyment towards physical exercise. However, majority were exhibited poor ability to barrier of tiredness. It was common reason as medical staff feeling tired and exhausted after heavy and continuous working hours which made them neglected the practice of exercise.

Gender contributed differently to ability to overcome exercise barrier. Our findings were consistent with several studies which showed males possessed higher capabilities in coping with barriers towards exercise. (Im et al., 2013; Meyer, 2008). This finding could be attributed that women were finding many barriers as lack of time, cost desire to do other things as well as involvement in domestic chores and family responsibility in addition to the career she involved. Previous study had shown that both genders were motivated to participate in physical activity for aesthetic, social and catharsis reasons (Clement et al., 2009; Sriskantharajah & Kai, 2007). In contradiction, study done had showed that both genders perceived equal motivation factors towards performance of exercise (Kubaisy et al., 2015).

In contradiction to several studies, abilities to overcome barriers were found to be less among medical personnel (Kosteva et al., 2012). People with young age also perceived lower capabilities (Chen, 2010; Kaplan et al., 2001). Malay ethnic also were less capable in overcoming exercise barriers (Ibrahim et al., 2013). Our study revealed no significant difference in the good ability to overcome exercise barrier among medical practitioners, Malays, marital status, age, and health status.

Our studies found that there was no correlation between the attitudes perceive with the ability to overcome exercise. Higher percentage of the attitude did not support higher practice of exercise (Mobily et al., 1987).

5. Conclusion and Recommendation

The attitudes towards performance of exercise among UiTM staffs were considerably high. In this study we can conclude that medical practitioner were perceived better attitude even

though the knowledge on exercise among physician were low as mention from the other studies. However, the level of knowledge background especially those who practically involved in medicine and life science were undeniable important determinants toward the perceived of good attitude. There was no association noted between variations of socio- demographic background with the attitude towards exercise. Overall ability of medical staff to overcome exercise barrier were good. Despite of the tiredness which was the hardest barriers towards performance of exercise, majority of them were capable to overcome other barriers. Male were showing significantly higher ability to overcome exercise compare to woman mainly due to lesser responsibilities and male doctors should want to look fit and healthy in order to gain respect from the patients. Unfortunately, there was no correlation noted between the attitude and ability to overcome exercise barriers. Perceiving good attitudes did not contribute to ability to overcome exercise as general practitioner and the educators were practically responsible for fixed heavy burden of work. Several recommendations could be made to improve the abilities towards overcoming barriers and attitudes towards exercise. Promotion of exercise during working hours and selection of activities that suit working environment and require minimal time should be done. Several factors which influence exercise adherence include enjoyment towards exercise, supervision, self-monitoring and follow up. Exchange of experience regarding efficiency of exercise as conservative treatment among staff also improved attitude and perception towards exercise.

6. Limitation

This study had some limitations. Firstly, face to face interview can be used to improve the response rate limit. Secondly, this study could probably be improved another time by involving other medical faculties to have broader picture. Lastly, further question should be asked to identify barrier towards exercise among those who do not practice exercise. Further study should be done to investigate the association between knowledge regarding exercise and the attitude towards exercise.

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