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PARENTS´ OPINIONS ABOUT THEIR OWN AND THEIR CHILDREN'S LIFESTYLE
MNENJA STARŠEV O NJIHOVEM ŽIVLJENJSKEM SLOGU IN ŽIVLJENJSKEM SLOGU NJIHOVIH OTROK

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Abstract

Objective: *The aim of the study was to investigate dietary habits of preschool children and their parents. Parents' opinions on lifestyles and physical characteristics of their children were analysed with the aim to identify possible relationships between active lifestyles and positive attitudes towards healthy eating habits.*
Methods: *The study included 520 parents of 3-to-6-year old children. The data were gathered within the scope of a large-scale research project entitled "Otrok med vplivi sodobnega življenskega sloga – gibalne sposobnosti, telesne značilnosti in zdravstveni status slovenskih otrok" ("The Child in the Midst of Modern Lifestyle Influences – Motor Abilities, Physical Characteristics, and the Health Status of Slovenian Children"), which was conducted by the researchers of the Institute of Kinesiology Research, University of Primorska, led by Dr. Boštjan Šimunič, in collaboration with the Faculty of Sports, Ljubljana and the Faculties of Education of Ljubljana, Koper, and Maribor, between 1 October 2006 and 31 September 2008. Data analysis was done using basic statistical parameters, the CORRELATION (analysis of correlations between variables) and ANOVA (analysis of variance) subprogrammes. The data obtained were processed by the SPSS statistical package for Windows. All statistically significant hypotheses were either accepted or rejected at a statistical significance level of 5% (p=0.05).*
Results: *Most parents surveyed (74.2%) were of the opinion that their children predominantly spend their leisure time in a motor/athletically active manner. Children have better eating habits than their parents. Athletically active parents have a significantly more negative attitude towards alcohol consumption and a more positive attitude towards a healthy diet than less athletically active parents.*
Conclusion: *Children should be introduced to healthy lifestyle by our setting an example of healthy life habits. The responsibility of promoting healthy life is shared by all: parents, educators, teachers, and each and everyone helping both children and adults adopt a positive attitude towards an active lifestyle.*

Key words: motor activity, athletic activity, active lifestyle, children, parents.

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Izvleček

Namen: *Osnovni namen raziskave je ugotoviti prehranske navade predšolskih otrok in njihovih staršev. Avtorji so analizirali mnenja staršev o življenjskem slogu in telesnih značilnostih njihovih predšolskih otrok, da bi ugotovili povezavo med aktivnim načinom življenja in odnosom do zdravega prehranjevanja otrok ter njihovih staršev.*
Metode: *V raziskavo smo zajeli 520 staršev in njihovih otrok, starih od 3 do 6 let. Podatke smo zbrali v okviru širšega raziskovalnega projekta »Otrok med vplivi sodobnega življenjskega sloga – gibalne sposobnosti, telesne značilnosti in zdravstveni status slovenskih otrok«, ki je potekal na Univerzi na Primorskem, na Inštitutu za Kineziološke raziskave pod vodstvom doc. dr. Boštjana Šimuniča ter v sodelovanju s Fakulteto za šport in s Pedagoškimi fakultetami v Ljubljani, Kopru in Mariboru, in sicer od 1.10.2006 do 31.09.2008. Za analizo*

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podatkov smo uporabili osnovne statistične parametre ter podprograma correlation in anova (enosmerna analiza variance). Podatke smo obdelali s pomočjo statističnega programa SPSS za okolje Windows. Vse statistično značilne zaključke smo sprejemali pri 5-odstotnem tveganju.

Rezultati: Največ staršev meni (74,2 %), da njihovi otroci prosti čas preživljajo pretežno gibalno/športno aktivno. Otroci ima*jo boljše prehranjevalne navade kot njihovi starši. Tisti starši, ki se več ukvarjajo s športom, pa imajo tudi statistično značilno bolj odklonilen odnos do alkohola in bolj naklonjen odnos do zdrave prehrane kot starši, ki so manj športno dejavni.*

Zaključek: *Dejavnike zdravega načina življenja moramo otrokom predstaviti z ustreznim lastnim zgledom. Zanj smo odgovorni tako starši, vzgojitelji in učitelji kot tudi vsi, ki pomagamo tako otrokom ter odraslim pri oblikovanju mnenja o aktivnem življenjskem slogu.*

Ključne besede: gibalna/športna dejavnost, aktivni življenjski slog, otroci, starši

1 Introduction

Obesity is a complex and the most common contemporary mass illness. In the 1980s, obesity was recorded for only 5% of the adult population worldwide. Until today, this figure has been subject to a six-fold increase, rising to approximately 30% on a global scale (1). Obesity has been spreading in adults and children alike. According to the World Health Organisation (WHO), as much as 25% of all the children in developed countries are categorized as overweight. Researchers from the Institute of Public Health of the Republic of Slovenia (Inštitut za varovanje zdravja Republike Slovenije) found that the level of obesity in Slovenian children has increased during the past 22 years from 15% in 1987 to 28.9% in 2008 (3). The increase in the prevalence of obesity among children and adults is not exclusive to the economically developed world but is encountered also in developing countries. Obesity is one of the key factors causing chronic non-contagious diseases, including all illesses associated with unhealthy lifestyles and risk factors, such as motor/athletic inactivity, smoking, excessive alcohol consumption, unhealthy diet and others. The most frequent consequences of the aforementioned health risks are hypertension (high blood pressure), hyperglycemia (high blood sugar), and hypercholesterolemia (high blood cholesterol) (4), which constitute a challenge to both physicians and kinesiologists.

Motor/athletic inactivity alone does not cause obesity, yet there is a clear relationship between a sedentary lifestyle and excessive body weight. Studies have shown that childhood obesity increases the risk for the development of a wide range of diseases in adulthood, such as cardiovascular diseases, diabetes mellitus type 2, osteoarthritis, and colorectal cancer (5).

According to contemporary research (5, 6, 7, 8), a motor/athletically active lifestyle has direct health benefits, especially in terms of:

- preventing excessive body weight and obesity;
- creating an environment that benefits the development of denser bones, healthy joints, and an efficient cardiovascular system,
- improving and maintaining good mental health, and a positive self-image, and
- laying solid foundations for a healthy lifestyle which can be maintained during adulthood.

Children are mostly healthy and their attitude towards health is different from that of adults; but nowadays morbidity rates among children and the youth tend to increase, too. In recent years obesity has become one of the most common illnesses affecting children and youth (9). Although the beginnings of overfeeding and the subsequent weight gain can be attributed to inappropriate dietary habits in the within-family environment, obesity is also related to psychosocial and psychological factors, which may persist well into adulthood (10).

The majority of studies focusing on preschool children obesity (4, 9, 11, 12) emphasise that regular motor/athletic activity combined with changes in dietary habits represents the most efficient approach to obesity control and maintenance of normal body weight.

During the development of concepts of their lifestyle, children are influenced by the environment, heredity, and their own level of activity. In order to be able to teach children how to live healthily, it is crucial that parents are aware of the importance and benefits of healthy lifestyles, and that they have already embraced the principles of healthy living as beneficial and vitally important. Understanding long-term effects of the collective and individual environment is the only suitable basis for developing guidelines on how to

raise a child properly (13). The previously mentioned risk factors may lead to a wide range of chronic non-contagious diseases, which may permanently affect a child's health and turn into hereditary ailments in later life (14).

Adverse consequences of motor/athletic inactivity and unhealthy dietary habits are inevitable. When combined with other risk factors, such as excessive alcohol consumption or smoking, unhealthy eating patterns may become the primary cause of numerous chronic, non-contagious diseases. An article in the WHO *The World Health Report* 2002 (15) states that risk factors that often lead to hypertension (high blood pressure), hypercholesterolemia (high blood cholesterol), and excessive body weight, are frequently linked to the following potentially fatal ailments: cerebral apoplexy, cardiac ischaemia, diabetes, osteoarthritis, endometrial cancer, and breast cancer (16).

The purpose of the present study was to investigate dietary habits of preschool children and their parents, to analyse the relationships between them, and to explore the parents' opinions on their lifestyles and on physical characteristics of their children. The aim of this study was to determine the association between healthy lifestyles and healthy dietary habits of preschool children and their parents.

2 Research methods

2.1 Survey sample

The survey sample was purposefully assembled from three broader Slovenian regions, i.e. the eastern, the central, and the western, taking into consideration the percentage of kindergartens in each of the regions. The kindergartens located in each region were chosen randomly. The sample included 520 parents of children aged between three and six years; 128 parents came from the western part of Slovenia, 219 from central Slovenia, and 173 from eastern Slovenia. Among the parents surveyed 282 were parents of boys (54.2%) and 233 were parents of girls (44.8%). The average age of the children studied was 5.4 years, with a standard deviation of 0.7. The average age of the parents was 35.3 years, with a standard deviation of 4.8.

The study was part of a large-scale research project entitled "*Otrok med vplivi sodobnega življenjskega sloga – gibalne sposobnosti, telesne značilnosti in zdravstveni status slovenskih otrok"* (The Child in the Midst of Modern Lifestyle Influences – Motor Abilities, Physical Characteristics, and the Health Status of Slovenian Children), which was conducted by the investigators of the Institute of Kinesiology Research at the University of Primorska led by Dr. Boštjan Šimunič, in cooperation with the Faculty of Sports in Ljubljana and the Faculties of Education in Ljubljana, Koper and Maribor.

During the preliminary meetings with the kindergartens included in the study, the principals and the parents were informed about the purpose of the study. They were given informed consent forms for participation in the research study and relevant questionnaires. We answered all their questions regarding the questionnaire, and agreed upon the manner of returning the surveys. Prior to any study-related procedures a written informed consent was obtained from all the participants willing to take part in the survey. All personal data remained undisclosed.

The formal data collection was carried out according to the Personal Data Protection Act of the Republic of Slovenia (Official Gazette of the Republic of Slovenia, No. 59/99).

2.2 Sample of variables

The sample of variables was encompassed by the parental questionnaire, which comprised 29 multiple-choice and open-ended questions, and a combination of both. The questionnaire was divided into two parts. The first part included questions asking the parents about their living environment, their motor/athletic activity, presence of smoking and alcohol in their lives, and their dietary habits. The second part inquired about their children, particularly about their motor/athletic activity, the quality of their leisure activities, and their dietary habits.

All questions were answered exclusively by the parents.

The questionnaire was designed by Šimunič, Videmšek, Pišot, Štihec, Štemberger, Završnik and Zajec (2008) who also tested the measurement characteristics as part of a large-scale research project entitled "*Otrok med vplivi sodobnega življenjskega sloga – gibalne sposobnosti, telesne značilnosti in zdravstveni status slovenskih otrok"* (The Child in the Midst of Modern Lifestyle Influences – Motor Abilities, Physical Characteristics, and the Health Status of Slovenian Children).

2.3 Methods of data processing

The SPSS 15.0 statistical package for Windows, issued by SPSS Inc., based in Chicago, IL, USA was used for data processing and the subprogram FREQUENCIES was employed to calculate the frequencies of individual answers provided in the questionnaires. The subprograms DESCRIPTIVES (descriptive statistics), ANOVA (analysis of variance), and CORRELATION (analysis of correlations between variables) were applied to numeric and other appropriately transformed variables. The statistical significance was tested at a level of 5% (p = 0.05).

3 Results

Leisure activities

Leisure activities of children were determined separately for weekends and holidays. Table 1 shows that 74.2% of the parents surveyed are of opinion that their children spend their leisure time in a motor/athletically active manner; 18.3% percent answered that their children spend their leisure time in a motor/athletically inactive manner, and 7.5% offered no opinion on their children's leisure activities.

Table 1. Leisure activities during weekends and holidays.
Tabela 1. Način preživljanja prostega časa otroka med vikendi in v času počitnic.

Leisure activities Načini preživljanja prostega časa	N	%
Motor/athletically inactive (watching TV, playing computer games, going out to the cinema) / Gibalno/športno nedejavno (gledanje TV, igranje igric na računalniku, obiski kina …)	95	18.3
Motor/athletically active (swimming, skiing, cycling, hiking …) / Gibalno/športno dejavno (plavanje, smučanje, kolesarjenje, pohodi, sprehodi …)	386	74.2
No answer / Ni odgovora	39	7.5
Total / Skupaj	520	100.0

Legend: N = Tally of responses; % = Percentage.
Legenda: N = število odgovorov; % = odstotek.

Table 2 shows the parents' opinions about their children's motor/athletic activity and about its influence on their children's integral development. The parents surveyed gave their opinions based on a 5-point Likert scale; from 1 (strongly disagree) to 5 (strongly agree). Data were analysed using applied conditional descriptive statistics; the parents' opinions were expressed as mean values. We found that the respondents though of motor/athletic activity as having a very positive influence on their children's integral development, awarding this particular issue 4.7 out of 5 points. They were of the opinion, however, that their children could be more motor/athletically active.

Table 2. Parents' opinions about their children's motor/athletic activity.
Tabela 2. Mnenje staršev o otrokovi gibalni/športni dejavnosti.

Parents' opinions / Mnenja staršev	Mean value / Srednja vrednost	Standard deviation / Standardni odklon
Sufficiently motor/athletically active / Dovolj gibalno/športno dejaven	3,75	0,874
Influence of motor/athletic activity on integral development / Vpliv gibalne/športne dejavnosti na razvoj	4,70	0,586
Physical fitness / Telesna pripravljenost	3,95	0,811

Legend: Mean value and standard deviation are based on a 5-point Likert item.
Legenda: Srednja vrednost in standardni odklon na podlagi iz 5-stopenjske lestvice.

Dietary habits of children and their parents

The study has shown that the majority of the parents surveyed (90.4%) are of the opinion that their children have an appropriate body weight. In view of the fact that body weight mostly depends on the level of

motor/athletic activity and the quantity and quality of daily meals, the study undertook to investigate both motor/ athletic activity and dietary schemes of children and parents. The findings showed that 90% of the children and only 65% of the parents surveyed eat breakfast regularly. Slightly less than 1% of the children and as much as one-third of the parents surveyed were found to abstain from breakfast. A vast majority of the children (98.5%) have lunch on a daily basis, while the share of the parents eating lunch is by nearly 10% lower. Quite a large proportion of the children (89.6%) eat dinner regularly as compared to two-thirds of the parents having regular dinners. Since children in kindergarten spend most of their time awake, it seems sensible to presume that they consume there all their important daily meals except dinner and snacks. We found that over half of the children (51.7%) eat breakfast in kindergarten. The study focused not only on the amount and frequency but also on the quality of the meals taken. Data analysis showed that fruit, the most frequently offered snack, is regularly taken by 27.2% of the children, and very frequently by 51.7%. Slightly less than 2% of the children do not eat fruit at all. Another frequently offered snack is chocolate; it is very frequently consumed by 25.2% of the children.

We also studied the children's diet outside the kindergarten; 38.2% of them eat vegetables on a daily basis, 35.4% eat vegetables every day, and the rest of them eat vegetables less than once a week or do not eat vegetables at all. As regards fruit in the diet, 60.3% of the children eat fruit on a daily basis, and 27.2% almost every day. The majority of the children consume potato, rice, and pasta nearly every day. A vast majority of the children eat white bread on a daily basis. Most children eat meat between once and a few times weekly. Milk and dairy products are consumed daily by 57.6% of the children and nearly every day by 25.4%; 31.4% of the children are served fried foods once a week and 40% once a month. Sweets and desserts are part of the menu several times per week for 35% of the children. Nearly 65.5% of the children do not eat fast food and 27.4% consume it once a month. In slightly less than 1% of the children, fast food features in a daily menu several times a week. Since parents only occasionally dine with their children, their dietary scheme differs from that of their children: they eat fruit, vegetables, potatoes, white bread, dairy products, and meat daily or almost every day, and consume pasta, whole wheat bread, fish and other seafood, eggs, and fried foods a few times or once a week. The majority of parents eat fried foods and fast food only rarely, never, or once per month

In addition to dietary habits, types of ingested beverages and frequency of beverage consumption were determined. Most children were found to drink water (66.7%) and non-carbonated non-alcoholic beverages (39.4%) several times per day, only a slightly lesser percent consume various natural fruit juices equally frequently; 1.2% drink carbonated non-alcoholic beverages several times per day, 3.7% of the children never drink any kind of natural fruit juice, and 57.1% never drink carbonated beverages. Most parents drink water several times per day as well. Non-carbonated and carbonated non-alcoholic beverages are ranked second and third, respectively. Alcoholic beverages occupy the last place in this particular category, being consumed once or a few times per week by 78% of the parents surveyed, i.e. by 15% of all the parents included in the study.

Parents who are more athletically active drink less alcohol

We compared the frequency of parental alcohol consumption and the level of their athletic activity using the Pearson's correlation coefficient with the aim to establish a possible relationship between alcohol consumption and athletic activity during weekends and holidays. Parents who are more athletically active consume alcoholic beverages significantly less frequently than those who are less active in athletic pursuits ($p < 0.05$).

Table 3. Relationship between the amount of time the parents devote to athletic activity and the frequency of alcohol consumption.
Tabela 3. Izračun povezanosti med časom, ki ga starši namenijo športni dejavnosti, in pitjem alkohola.

Time devoted to athletic activity vs. alcohol consumption / Čas, namenjen športni dejavnosti glede na pitje alkohola	Correlation ratio / Povezanost	Statistical significance / Statistična značilnost
Unorganized athletic activity during weekends and holidays vs. frequency of alcohol consumption / Neorganizirana športna dejavnost med počitnicami in vikendi glede na pitje alkohola	8,831	0,003*

Legend: * = statistical significance level of 5% (p 0.05); vs. = against.
Legenda: Z * je označena statistična značilnost pri 5-odstotnem tveganju (p ≤0,05).

Parents who are athletically active have a positive attitude towards a healthy diet

Parental attitudes towards healthy eating and their level of athletic activity were studied using the Pearson's correlation coefficient with the aim to establish a possible relationship between a composite variable labeled "healthy diet" (zdrava prehrana – ZP) (12) and the amount of time the parents devote to athletic activity (Table 4). The parents who lead an athletically active life, partaking in either organized or non-organized activities during the week and during weekends and holidays have a significantly more positive attitude towards healthy eating than the parents who are less athletically active. The association between a healthy diet and the consumption of healthy beverages is also statistically significant.

Table 4. The relationship between the amount of time the parents devote to athletic activity and their attitude towards a healthy diet.
Tabela 4. Povezanost med odnosom do športa in zdravo prehrano.

Pearson's correlation coefficient / Pearsonov koeficient korelacije	Correlation ratio / Povezanost	Statistical significance / Statistična značilnost
Healthy diet vs. athletic activity during the week (PARENTS) / Zdrava prehrana in športna dejavnost med tednom (STARŠI)	0,118	0,007 (**)
Healthy diet vs. non-organized athletic activity during weekends and holidays (PARENTS) / Zdrava prehrana in neorganizirana športna dejavnost med vikendi in počitnicami (STARŠI)	0,139	0,004 (**)
Healthy diet vs. consumption of healthy beverages / zdrava prehrana in zdrava pijača	0,232	0,000 (**)

Legend: * = statistical significance level of 5% (p 0.05); vs. = against.
Legenda: Z * je označena statistična značilnost pri 5-odstotnem tveganju (p ≤0,05), vs – versus (proti).

Children of parents who lead a motor/ athletically active life are more motor/athletically active

The levels of motor/athletic activity in parents and their children were compared using the Pearson's correlation coefficient.
Table 5 shows the relationship between the amount of time devoted by the children and their parents to non-organized motor/athletic activity during the week. The relationship was tested using the Pearson's correlation coefficient. The levels of children's and parental motor/athletic activities during the week were positively associated. Children of parents who spend more time engaging in either organized or non-organized motor/athletic activities are more motor/athletically active

as well. The same holds true for the amount of time devoted by children and their parents to motor/athletic activity during weekends and holidays.

Table 5. The amount of time devoted to motor/athletic activities by children and their parents.
Tabela 5. Povezanost med gibalno/športno dejavnostjo otrok in njihovih staršev.

Pearson's correlation coefficient / Pearsonov koeficient korelacije	Correlation ratio / povezanost	Statistical significance / statistična pomembnost
Motor/Athletic activity during the week (CHILDREN vs. PARENTS) / Gibalna/ športna dejavnost med tednom OTROCI vs STARŠI	0,194	0,001(**)
Non-organized motor/athletic activity during weekends and holidays (CHILDREN vs. PARENTS) / Neorganizirana gibalna/športna dejavnost med vikendi in počitnicami OTROCI vs STARŠI	0,377	0,000 (**)

Legend: * = statistical significance level of 5% (p 0.05); vs. = against.
Legenda: Z * je označena statistična značilnost pri 5-odstotnem tveganju (p ≤0,05), vs – versus (proti).

4 Discussion and conclusion

The aim of the study was to investigate lifestyles of preschool children and their parents, and to explore some facts about obesity, a complex and the most common mass illness of the present, which may be a consequence of unhealthy dietary habits and lack of motor/athletic activity. Children were found to spend on average less than 90 minutes per day on non-organized motor/athletic activities: 46% of the children whose parents took part in the study engage in less than 30 minutes of non-organized motor/athletic activity per day. Similar results were obtained by Zurc, Pišot, and Žerjal (17), who reported that 55.2% of the children included in their study were engaged in motor/athletic activities two to three times weekly, and that nearly 20% of the children studied were completely motor/athletically inactive. Šentič et al. (18) emphasized a decrease in the level of motor/athletic activity during the period of transition from childhood to adulthood, when a lesser amount of time is devoted to motor/athletic activities. Kropej and Videmšek (19) found that preschool children mostly engage in non-organized motor/athletic activities. Similar conclusions have been drawn by other researchers, including Štihec and Strel (20), Štihec, Karpljuk, Videmšek and Kondrič (21), and Ritgers et al. (22). Motor/athletic activities have been found to affect favourably a string of health indicators and to directly contribute to lower morbidity and mortality rates (23), lesser body weight, higher HDL-C ("good cholesterol") levels (24), increased bone density, and less insulin resistance. All activities that consitute an integral part of a healthy lifestyle should therefore be more vigorously promoted.

It is difficult to determine accurately the quality of the motor/athletic activity of the population studied, i.e. of children three to six years of age. Nonetheless the results indicate convincingly that nearly half of the children included in the study are motor/athletically active less than 60 minutes per day, i.e. less than the amount of time recommended by experts as crucial for health maintenance (26) and normal development.

The ways children spend their leisure time are often intertwined with spare time activities and habits of their parents. Studies have proven that lifestyles of parents and their children are often intertwined. Analysis of behaviours of children and youth showed that they both share an extraordinarily similar tendency to be influenced by modern lifestyles. Different studies show that the foundations of what is perceived as "lifestyle" begin to develop within a close-knit, family environment (20, 21). The results of our study showed that 35.4% of the parents surveyed devote less than two hours a week to non-organized athletic activities. Considering that experts recommend that this "input" should be at least doubled to maintain one's health, this is a worrisome situation.

Our results are compatible with those of some other Slovenian studies (26, 27, 28, 29), reporting that on average people engage in athletic activities infrequently and for too short periods of time. Recent research has shown that people are aware of the

importance of sport and athletic activity, and that they tend to increase the time devoted to athletic activity. A gap between athletically inactive individuals and those who devote most of their leisure time to athletic activity, however, has been increasing.

In addition to a motor/athletically active life, many authors (30) regard healthy eating, abstaining from tobacco, alcohol and drugs, and keeping the level of stress as low as possible as important health preserving measures. Our study has shown that children are awake for the majority of time spent in kindergarten, therefore the amount and the quality of main daily meals they take during the week are the responsibility of day care institutions. We have found that the majority of the children studied eat their breakfast, mid-noon snack, lunch, and afternoon snack in kindergarten, while dinner is prepared by their parents at home. Parents have substantially less meals, they often skip breakfast, and consume unhealthy food more often than their children. Children eat most daily meals while in kindergarten. Parents should therefore take special care to offer their children proper evening meals, and to meet their dietary requirements during weekends and holidays. The results of the study show that parental dietary habits are inferior to those of their children.

The study has confirmed the importance of regular athletic activity, showing that athletically active parents hold a more negative attitude to alcohol consumption and a more positive attitude towards healthy eating than their peers who are less inclined to engage in athletic activitities. Parents should introduce children to healthy lifestyle by setting a good example for them. Parents, educators, teachers, and all those who support children and adults during the process of their forming a personal attitude towards an active lifestyle, are responsible to act accordingly.

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