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## STUDY RESULTS ON THE ROLE OF PARENTS IN THE OVERWEIGHT PREVENTION IN SCHOOL-AGE CHILDREN

**Resume.** The article presents the survey results of school-age children's parents to determine the factors influencing their role in the overweight prevention in school-age children. The target groups were parents of school-age children assigned to the Unitary Enterprise based on the Right of Economic Management of the City Polyclinic No. 10 in Almaty. Analysis of the main results of the sociological study showed that one in six children is overweight, parents do not control the nature of their diet and do not encourage them to be physically active enough.

**Keywords:** children, overweight, risk factors, prevention.

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## МЕКТЕП ЖАСЫНДАҒЫ БАЛАЛАРДАҒЫ АРТЫҚ САЛМАҚТЫҢ АЛДЫН-АЛУДАҒЫ АТА-АНАЛАРДЫҢ РӨЛІН ЗЕРТТЕУ НӘТИЖЕЛЕРІ

**Түйін.** Мақалада мектеп жасындағы балалардың артық дене салмағының алдын-алудағы рөліне әсер ететін факторларды анықтау үшін мектеп жасындағы балалардың ата-аналарына сауалнама нәтижелері келтірілген. Балалардың семіздігінің себептері әртүрлі гендік ауытқуларда немесе дұрыс тамақтанбауда ғана емес, сонымен қатар ата-ана тәрбиесіне де байланысты. Мақсатты топ ретінде Алматы қаласының ШЖҚ МКК №10 ҚП тіркелген мектеп жасындағы балалардың ата-аналары қатысты. Әлеуметтанулық зерттеудің негізгі нәтижелерін талдау көрсеткендей, әрбір алтыншы баланың артық салмағы бар, ата-аналар олардың тамақтану сипатын бақыламайды және оларды жеткілікті физикалық белсенділікке ынталандырмайды.

**Түйінді сөздер:** балалар, артық салмақ, қауіптілік факторлары, алдын-алу.

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## ИЗУЧЕНИЕ РОЛИ РОДИТЕЛЕЙ В ПРОФИЛАКТИКЕ ИЗБЫТОЧНОЙ МАССЫ ТЕЛА У ДЕТЕЙ ШКОЛЬНОГО ВОЗРАСТА

**Резюме.** В статье представлены результаты анкетирования родителей детей школьного возраста для определения факторов, влияющих на их роль в профилактике избыточной массы тела у детей школьного возраста. В качестве целевых групп выступили родители детей школьного возраста прикрепленных к ГКП на ПХВ ГПН№10 г.Алматы. Анализ основных результатов социологического исследования показал, что у каждого шестого ребенка имеется избыточный вес, родители не контролируют характер их питания и не стимулируют их к достаточной физической активности.

**Ключевые слова:** дети, избыточная масса тела, факторы риска, профилактика.

**Introduction.** One of the most important public health challenges of the 21st century is overweight among school-age children because of its increasing prevalence and negative impact on health. Three hundred and forty million children and adolescents between the ages of 5 and 19, according to the WHO in 2016, were overweight or obese [1]. These children tend to become obese in adulthood and are more likely to develop non-communicable diseases such as type 2 diabetes and cardiovascular disease in the future. Obesity is named by WHO a new non-communicable epidemic of our time, which is dangerous because it significantly worsens the health of the population.

The formation of a healthy lifestyle is part of the state policy of the Republic of Kazakhstan. The number of the child population in Kazakhstan is about 4,295,692 million people, i.e. every 4th inhabitant of the republic is a child

[2]. Schoolchildren are one of the most numerous and socially active groups in the population. Studies by the Kazakh Academy of Nutrition show that one in five children in the country between the ages of 1 and 14 (21.5%) is overweight, and it turns into obesity in half of the cases [3, 4].

A large number of changes occur in children that are not perceived by parents as harbingers of pathological conditions. These changes include overweight and obesity, the incidence of which has recently been steadily increasing [5, 6]

Adult obesity often originates in childhood, so the prevention of being overweight is particularly relevant in children [7]. The role that parents play in the development of appropriate behavior in their child, especially related to nutrition, is crucial. The parental role, therefore, requires



careful consideration in the prevention of overweight in children.

The organization of rational nutrition both within the family and at school performs an important pedagogical function, showing children an example of healthy eating [8, 9].

Ukrainian researchers have found that an effective measure to prevent obesity can be the widespread introduction of health-preserving technologies in educational institutions based on the formation of a healthy lifestyle and sufficient physical activity with the active involvement of the family institution in this process. This study showed a positive impact of health-preserving technologies named "Learning to Move" on the preservation of physical development harmony and the prevention of obesity in elementary school students by provision of sufficient physical activity and rational nutrition [10, 11].

A child's family environment forms his or her food hygiene. The practice of scientists from Moscow and the Altai region shows that transfer of the child to dietary nutrition is ineffective if the whole family continues to consume junk food. Rational nutrition, optimal physical activity and friendly intra-familial relationships remain the most important areas for prevention of obesity in children and adolescents [12].

There are a number of requirements for the design and implementation of similar childhood and adolescent obesity prevention programs in Europe: they should include parents and teachers as well as children in the target groups; a multifactorial approach (provoking physical activity, rational diet with anthropometric monitoring); a multicomponent approach that considers environmental and human behavior changes; partnership both within school (children, parents, teachers) and outside school; involvement of community opinion leaders in prevention programs; the use of modern information technology; the need to keep food diaries for daily control of diet and daily physical activity; active implementation of the prevention program in each school for at least 1-2 years [13]. The Healthy Lifestyles Program (HELP) developed by experts in the United Kingdom is a creative and interactive way to inform school children to prevent

Table 1 - Sample population

No.	Respondents	Sampling
1.	Parents of school-age children attached to the Unitary Enterprise based on the Right of Economic Management of the City Polyclinic No. 10	400 (sample population)

The parent questionnaire was developed after studying various relevant literature sources. The questionnaire consists of 26 questions and is aimed at obtaining an objective situation. All questions are divided into a passport part, the study of the level of health of schoolchildren, and the nature of their nutrition.

The sample of parents was statistically calculated with the 95.0% confidence level traditionally used for this kind of research and with a marginal sampling error of 5%.

Mathematical and programming methods were used to enter, process, and obtain results.

396 respondents took part in the sociological study (400 people were surveyed, but as a result of the rejection of completed questionnaires, 396 questionnaires were analyzed) from the parents of school-age children assigned to the Unitary Enterprise based on the Right of Economic Management of the City Polyclinic No. 10 Almaty Department of Public Health.

BMI and obesity. The program was developed taking into account children's school behavior, family environment, and in-school environment [14].

The HELP represents the implementation of 3 key objectives: reduction of the consumption of sweetened carbonated beverages; increase in the proportion of healthy snacks consumed; and reduction of sedentary lifestyles. Parents were involved for facilitation. Strategies were proposed to promote healthy eating and active behaviors directly (through parenting) or indirectly (through creating a supportive environment). The number of children involved in the program increased several times, regardless of socioeconomic background within 2 years. The number of children with an elevated BMI decreased by 10 percent [15].

The purpose of this study is to examine the role of parents in the prevention of overweight in school-age children.

#### Materials of the study.

The study was conducted based on the Unitary Enterprise based on the Right of Economic Management City Polyclinic No. 10 of the Almaty Department of Public Health. The research program was developed, which included several stages and consisted of solving tasks at each stage.

1. To conduct a sociological survey of parents of school-age children assigned to the Unitary Enterprise based on the Right of Economic Management of the City Polyclinic No. 10 in Almaty on the knowledge and skills to prevent the overweight.

2. To determine the factors influencing the role of parents in the prevention of overweight in school-age children by a questionnaire survey of parents.

The research methods used were a questionnaire analysis among parents of school-age children to determine the factors affecting their role in preventing overweight in school-age children.

The target groups were: parents of school-age children attached to the Unitary Enterprise based on the Right of Economic Management of the City Polyclinic No. 10 in Almaty.

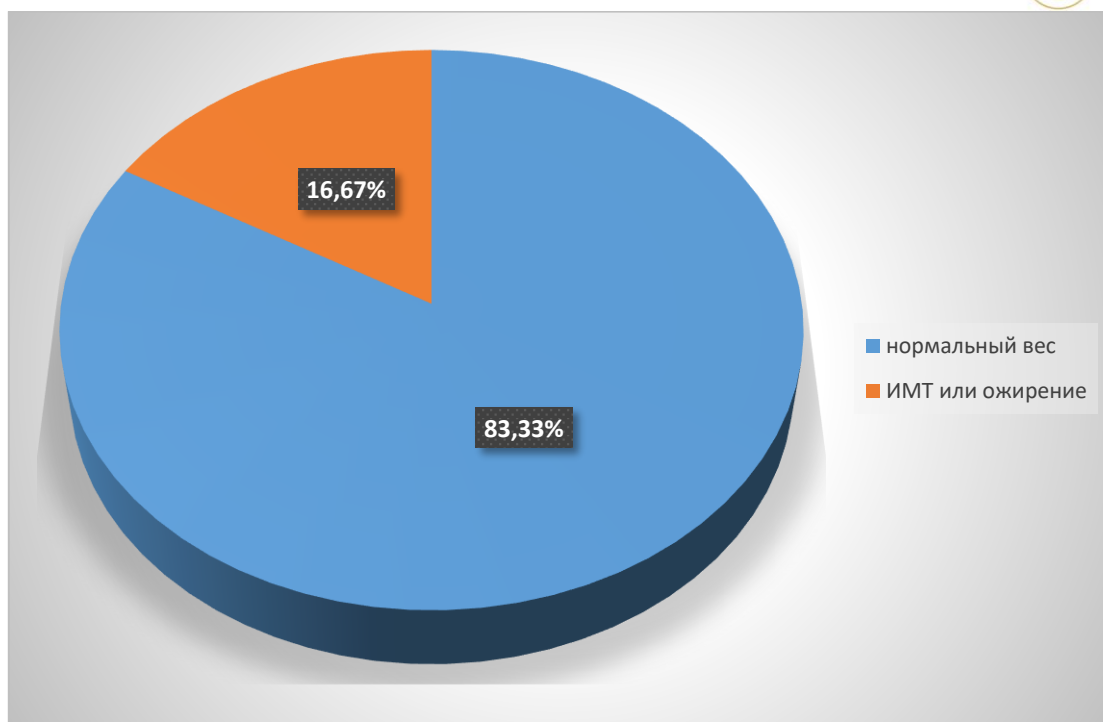
The following sampling frame was formed in order to obtain statistically reliable results of the study (Table 1):

Parents of 182 (45.96%) boys and 214 (54.04%) girls participated in the study by gender.

The situation by age range was as follows: parents of 7-year-olds participated in 14 (3.54%), parents of 8-year-olds in 58 (14.65%), parents of 9-year-olds in 75 (18.94%), 10-year-olds in 63 (15.91%), 11-year-olds in 61 (15.40%), 12-year-olds in 56 (14.14%), 13-year-olds in 53 (13.38%) and 14-year-olds in 16 (4.04%) (Figure 1).

Parents indicated the weight and height parameters of their children in the questionnaires. The presented indicators were calculated, with the help of special centile tables of correlation between the height and weight of children.

The analysis showed that 330 (83.33%) of the children were of appropriate weight for their age, and 66 (16.67%) were overweight or obese (Figure 1)



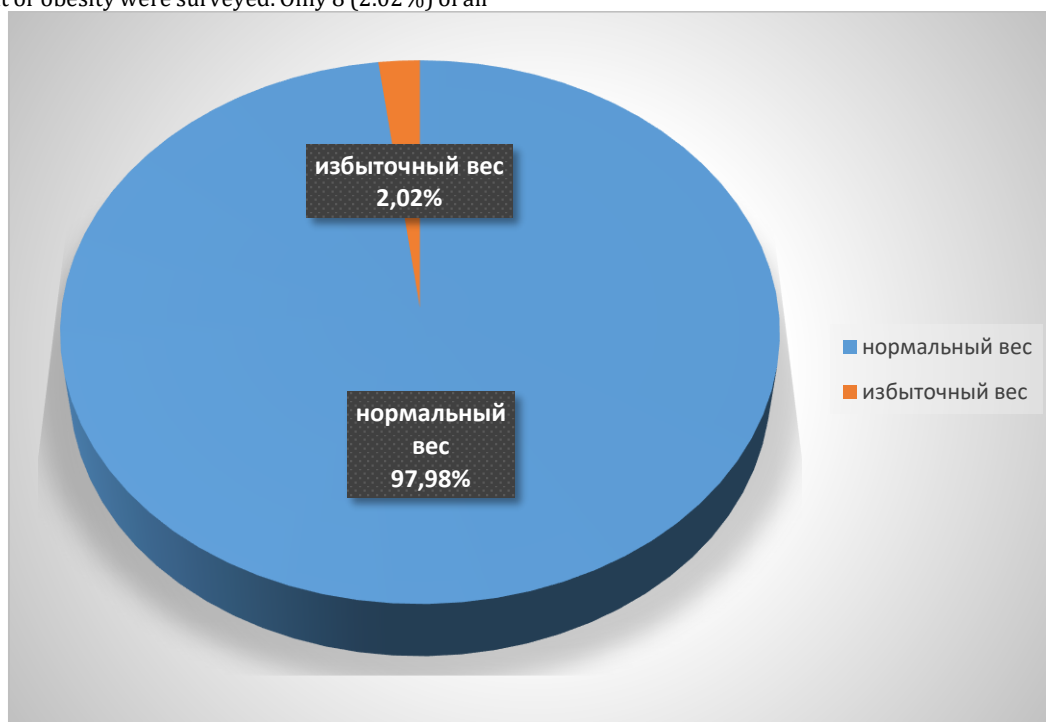
**Figure 1 - Distribution of Children by Normal Weight or Overweight**

We also analyzed children's weight by age group. Overweight or obesity was observed in 5 (35.71%) children at age 7, 6 (10.34%) at age 8, 12 (16.00%) at age 9, 4 (6.35%) at age 10, 19 (31.15%) children at age 11, 3 (5.36%) at age 12, 16 (30.19%) at age 13, and 1 (6.25%) child at age 14.

Figure 2 Distribution of respondents' answers regarding whether their children are overweight

Parents' opinions regarding their children's perceived overweight or obesity were surveyed. Only 8 (2.02%) of all

respondents agreed that their children were overweight and 388 (97.98%) reported that their children were normal weight. Not a single respondent chose the answer options "insufficient" and "difficult to answer" (Figure 2). It should be noted that the analysis of children's weight revealed excessive body weight or obesity in 16.67% of children, which is 8.2 times higher than in this item of the questionnaire, indicating insufficient knowledge about excessive weight among parents.



**Figure 2- Distribution of respondents' responses regarding whether their children are overweight**

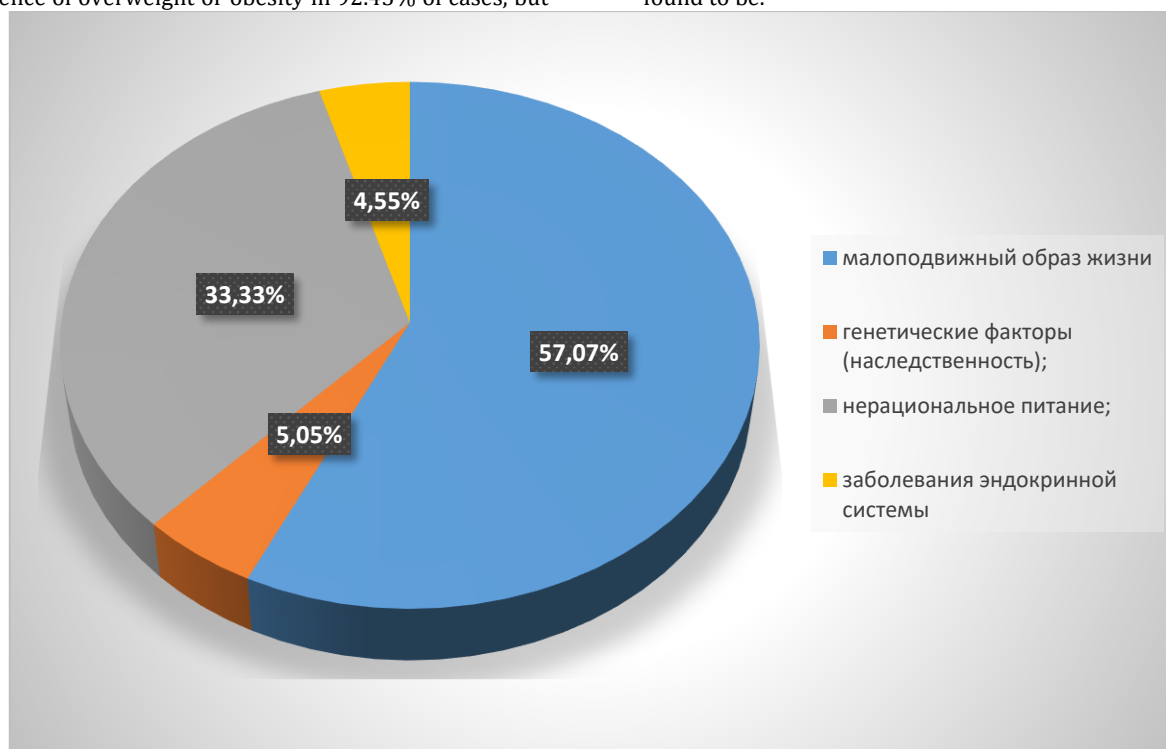
Parents were asked, "Is anyone in your family overweight?" In 100% of cases, parents of 7-year-old children believe that their children do not have overweight or obesity, however, the analysis showed that 35.71% have, 100% of 8-year-old children, although 10.34% have,

in 100% of cases, the parents of 9-year-old children deny, although 16.00% were found, in the parents of 10-year-old children there was also a negative answer, but in 6.35% it was present, in 11-year-old children it was 31.15%, but 100% of parents deny this, and the same is true of parents



of 12-year-olds, 5.36% were found to be overweight or obese. The parents of 13-year-olds disagreed with the presence of overweight or obesity in 92.45% of cases, but

the analysis showed 30.19% of positive cases, and in 14-year-olds, 75.00% also disagreed, but 6.25% of cases were found to be.



**Figure 3** - Distribution of parents' opinions about the causes of obesity

The question was studied regarding the opinion of parents about the causes of obesity. The option "sedentary lifestyle" was chosen by 226 (57.07%) respondents, "genetic factors (heredity)" - 20 (5.05%), "irrational nutrition" - 132 (33.33%), "diseases of the endocrine system" - 18 (4.55%) people chose (Figure 3).

Respondents were asked whether they monitor their child's nutrition. 357 (90.15%) parents answered positively, 6 (1.52%) - negatively, 33 (8.33%) people chose the option "sometimes".

Parents were asked the question "Which of the rules of healthy eating do you try to apply to your child?" The option "compliance with the diet" was chosen by 181 (45.71%) respondents, "the correct ratio of proteins, fats, carbohydrates" - by 174 (43.94%), "refusal of unhealthy foods" - by 41 (10.35%) respondents. No one chose the option "I don't think about nutrition".

64 (16.16%) parents allow them to eat them every day, 318 (80.30%) allow them to eat them 2-3 times a week, and 14 (3.54%) allow them to eat them several times a month, regarding children's consumption of sweets and flour.

The next section of the survey focused on active lifestyles for children. To the question "How active is your child's lifestyle?" 9 (2.27%) parents answered "mostly sits at a computer/TV", the option "attends sports sections" was chosen by 63 (15.91%) people, "walks/plays outside" - by 324 (81.82%) respondents.

The following results were obtained for the time children spend on physical activity: the option "less than 30 minutes a day" was chosen by 2 (0.51%) respondents, and "30 to 60 minutes a day" was chosen by 234 (59.9%) respondents. - 234 (59.9%), "more than 60 minutes a day" - 160 (40.40%) respondents.

Parents were asked whether they prevent obesity in their children. A total of 190 (47.98%) respondents answered

positively, 203 (51.26%) answered negatively, and 3 (0.76%) planned to do so in the future.

#### **Results and discussion.**

Parents of 45.96% of boys and 54.04% of girls participated in the study by gender. They were parents of children from 7 to 14 years old by age range.

Parents indicated their children's weight and height in the questionnaires. Calculations were made using special height and weight matching tables (centile tables) and revealed that 16.67% of children were overweight or obese, while only 2% of parents confirmed that their children had such problems. One in three children aged 7, 11, and 13 had overweight.

One in three parents indicated that overweight or obesity was present in a relative or in that family.

A question about parents' opinions about the causes of obesity was studied. Half of the respondents cited a sedentary lifestyle, and one in three cited an irrational diet. About half of the respondents indicated that they try to observe their children's eating habits and correctly balance proteins, fats, and carbohydrates. Less than half of parents offer their children a variety of foods. 85% of parents reported that their children eat four to five meals a day. Every sixth parent allows his or her children to eat sweets and flour every day.

7 out of 10 parents allow their children to drink sugary carbonated beverages. Almost 60% of respondents indicated that their children consume fast food once a week.

A quarter of all respondents said that their children eat when they want or replace main meals with snacks, and one in three parents indicated that children simply refuse healthy foods and meals. 60% of respondents indicated that their children engage in only 30-60 minutes of physical activity per day. Only half of the parents are engaged in obesity prevention among their children.



**Conclusion.** Thus, analysis of the main results of the sociological study showed that one in six children is overweight, parents do not know measures to prevent overweight and obesity in their children, do not control the nature of their diet and do not encourage them to be physically active enough.

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#### СПИСОК ЛИТЕРАТУРЫ

- 1 Commission on Ending Childhood Obesity. – 2020г. <https://www.who.int/ru/news-room/fact-sheets/detail/obesity-and-overweight>
- 2 Dinamika chislennosti i sostava naseleniia Kazakhstana. Elektronnaia versiia biulletenia «Naselenie i obshchestvo», January 2019.
- 3 Ozhirenie u detei i podrostkov. Klinicheskie protokoly MZ RK – 2017.
- 4 Rasprostranennost izbytochnoi massy tela i ozhireniia sredi detei v Kazakhstane // Biulleten. Chelovecheskii kapital. -2014. - № 2-3 (3). -S-26-29.
- 5 Livingstone B. Epidemiology of childhood obesity in Europe / B. Livingstone // Eur. J. Pediatr. — 2009. — Vol. 159 (Suppl. 1). — P. 14-34.
- 6 WHO Obesity and overweight. WHO Media centre, Fact sheet № 311, May 2012.
- 7 WHO Obesity and overweight. WHO Media centre, June 2021.
- 8 Epidemiologicheskij nadzor za detskim ozhireniem, pitaniem i fizicheskoy aktivnost'yu v Respublike Kazahstan. Nacional'nyj otchet, 2020. / K.K. Askarov, SH.Z. Abdrahmanova, T.I. Slazhneva, A.A. Adaeva, ZH.A. Kalmakova, A.A. Akimbaeva, N.A. Sulejmanova – Nur-Sultan: NCOZ MZ RK, 2022. — 42 с.
- 9 MR 0100/8604-07-34 «Rekomenduemye srednesutochnnye nabory produktov dlia pitaniia detei 7-11 i 11-18 let». – М., 2007.
- 10 Prikaz MZ Ukrainy ot 13.09.2013 № 802 «Kriterii ocenki fizicheskogo razvitiya detej shkol'nogo vozrasta».
- 11 Beketova G.V., Savinova E.B., Dubogaj A.D., Mishcherskaya G.D., Sokolenko I.M. Rol' zdorov'e-sohranyayushchih tekhnologij v profilaktike ozhireniya i izbytochnoj massy tela u detej mladshego shkol'nogo vozrasta. Perinatologiya i pediatriya. 2019. № 1 (77). С. 69-73.
- 12 Gorelova ZH.YU., Filippova S.P., Solov'eva YU.V. i soavt. Rol' sem'i i shkoly v formirovanii pishchevogo povedeniya uchashchihsya Moskvy i Altajskogo kraja // Sbornik statej X Mezhdunarodnoj nauchno-prakticheskoy konferencii. – 2018.
- 13 Karpushkina A.V., Geppe N.A. Profilaktika ozhireniya u detei v sisteme zdavoohraneniya. // Doktor.ru – 2015. - №13. – С.8-11.
- 14 Mytton J, DiGiuseppi C, Gough D, Taylor R, Logan S. School-based secondary prevention programmes for preventing violence. Cochrane Database Syst Rev. 2006 Jul 19.
- 15 Lloyd JJ, Wyatt KM. Qualitative findings from an exploratory trial of the Healthy Lifestyles Programme (HeLP) and their implications for the process evaluation in the definitive trial. BMC Public Health. 2014; 14: 578.

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