Knowledge, attitude, and practice of healthy eating among public school teachers in Kuwait

Hashem Kana'An,1 Rami Saadeh,1 Ahmed Zruqait,2 Manar Alenezi1

1Department of Public Health and Community Medicine, Faculty of Medicine, Jordan University of Science and Technology, Irbid; 2Director of Al-Ramtha Health Area, Al-Ramtha, Irbid, Jordan

Abstract

Background: Healthy food is essential for strengthening the body and protecting it from diseases. Conversely, unhealthy food can cause severe diseases in children and adolescents. The present study aimed to assess the level of knowledge, attitude, and practice among teachers about healthy food and to examine the associated factors.

Design and methods: A cross-sectional study was conducted using a questionnaire distributed to 300 teachers in the Hawalli and Al-Jahra educational areas in Kuwait over approximately six months in 2019.

Results: Those who participated in a course had significantly greater knowledge than those who did not (p=0.005). The respondents in Hawalli had a significantly lower mean attitude than Al-Jahrah teachers (7.9±1.5 vs 8.2±1.5, respectively; p=0.03).

Conclusions: Limited knowledge combined with a low level of positive attitude suggests an ongoing educational workshop should be established to promote healthy nutrition.

Introduction

Eating unhealthy food is problematic behavior, especially among children and adolescents. Several lines of evidence suggest that chronic conditions such as cardiovascular disease, obesity, hypertension, and diabetes can be traced back to eating unhealthy food during childhood and adolescence.1-4 These findings suggest the need to spread awareness of healthy eating habits.5

Family and school have profound effects on children and adolescents. Teachers can contribute positively to the knowledge, attitude, and practices (KAP) of healthy eating and significantly impact children’s and adolescents’ health behaviors. KAP of healthy eating among teachers is transmitted by teachers to children and adolescents and affects school policies toward selecting types of available foods in school cafeterias. KAP of healthy eating among schoolteachers can be attributed to age, gender, experience, geographical area, nationality, type of school, and professional training.6 According to the literature, a balanced diet contains essential nutrients in appropriate quantities required for growth or maintenance of health.7 Nutritional interventions may alter students’ eating behaviors, especially because they are growing.8 Teachers’ knowledge of good eating habits may transmit a favorable attitude toward healthy foods.9

Teachers’ knowledge of healthy eating might improve their students’ quality of healthy eating. In most cases, teachers must undertake interventions to promote healthy eating.10 There is a growing body of evidence to suggest that unhealthy dietary choices resulting from a lack of knowledge and misconceptions about healthy foods cause some health problems such as obesity.9 A study showed that a teacher’s nutrition education gained greater acceptance among children than information transmitted by an outside nutrition expert.10

A study in 2013 assessed the nutrition-related knowledge among teachers and found that only 10% correctly identified food groups that should be consumed most often (grains), and 68% correctly identified groups that should be consumed least often (fats and oils). Only 39% correctly identified the recommended daily servings of fruits and vegetables, 8% of the teachers knew the recommended percentage of daily energy from fats, and 48% knew which macronutrient contained the most energy.11 An exploratory study of teachers’ perspectives on food and nutrition in kindergarteners analyzed teachers’ discussions on seven internet message boards regarding various food and nutrition experiences in their classes, this study found a need to increase teachers’ nutritional knowledge about such subjects as healthy snacks, food restrictions, and fast food brands, increasing knowledge alone will have little impact if the many other intervening factors are not addressed.12

The present study was the first in Kuwait to assess the level of knowledge, attitudes, and practice among teachers about healthy eating and to examine the associated factors.

Design and methods

This study was conducted between June 2019 and November 2019 in the Hawalli and Al-Jahra public school districts in Kuwait. These are male and female schools, divided into primary, preparatory, and secondary schools. The study used a cross-sectional design among teachers at these schools.

Significance for public health

This study the first study in Kuwait to assess the knowledge, attitude and practice among teachers, focusing on the weak points of teachers regarding the healthy nutrition can affect improve both teachers' and students' nutrition and reflects in decreasing the diseases risks.
Sample size

For a confidence level of 95%, α is 0.05, and the critical value is 1.96; delta is the difference between the means of the two populations, which is 0.25; p is the underlying proportion in the group which is between 0 and 1, and 0.05 was chosen, and 300 subjects needed to achieve statistically significant results.

Instrument

The researcher visited the school, met with the headmaster, explained the purpose of the study, and provided 25 questionnaires to administer to teachers using a convenience sampling technique. The researcher gathered the completed questionnaires from the headmasters at a later visit. The first stage included Hawalli and Al-Jahra provinces (one urban and one rural). The second stage included a list of all schools in each of the two provinces. Schools were categorized into male and female schools, and each was categorized into primary, preparatory, or secondary schools. This self-administered survey was administered to teachers during regular working hours. Almost all completed the survey. There was no financial incentive to participate. The final sample size was 300 teachers.

Data were collected using a structured self-administered questionnaire, and mostly closed-ended questions were used. The questionnaire consisted of two sections. The first gathered data on demographic variables (age, gender, nationality, and years of experience). The second gathered data on KAP among teachers about healthy eating in public schools.

The following is a typical question: “Which food group should be consumed most? To correct for guesses, each item included an “I do not know” option. For each item, a score of 1 was given for correct answer. Attitudes toward healthy eating were assessed using six items using a three-point Likert scale. A typical statement was “learning the relationship between food and health is important” (agree or disagree, or “I do not know”). A score of 1–3 was given, with higher scores indicating more favorable attitudes. The coding for all attitude score items was similar (agree = 3, disagree =2, I do not know =1). The scores were then summed.

Teachers’ practices regarding healthy eating were assessed using a 13-item sample. A typical question was, “How many times did you consume vegetables yesterday?” Scores of 1–3 (0 times, 1 time, ≥2 times) were given higher scores indicating more frequent practice. The Sharma survey instrument from which our items of KAP were taken was not validated for teachers; however, it has been validated in low-income, minority populations at the fourth-grade reading level. The questionnaire was translated from English into Arabic by an expert, and then two independent native Arabic speakers translated the questionnaire back to English to maintain the equivalence of the questionnaire in the target language.

Statistical analysis

Descriptive statistics were used for continuous and categorical variables. For categorical variables, frequency and percentage were calculated for age, gender, and location. For quantitative variables, arithmetic means, standard deviations, medians, minimum, and maximum values were used for attitude and knowledge scores. The Kolmogorov-Smirnov test of normality was applied, and bivariate analysis was used to determine the relationship between knowledge and attitude and each sociodemographic variable using the Student’s t-test as required. Multivariate logistic regression analysis was used to assess the effect of each independent variable (gender, age, school location, nationality, years of experience, school type, and previous training course) on the dependent variables (knowledge and attitude) after controlling for the effect of other variables included in the model. The level of significance of the association between variables was set at p<0.05. All calculations and analyses were carried out using SPSS (Statistical Package of Social Sciences Demo Version 22.0, Chicago, IL, USA).

Results

Demographic characteristics

A total of 325 surveys were distributed in several schools in Kuwait in two areas. A total of 300 surveys were completed for a response rate of 92.3%. Most respondents were Kuwaiti (71.3%). The age of the enrolled sample was distributed into two categories; 72.3% were less than 40 years old, and 27.7% were ≥40 years old (Table 1). Most respondents had more than 5 years of experience (64.7%). There was a higher percentage of more than 5 years’ experience in Hawalli (53.1%) compared to 46.9% in Al-Jahrah. A total of 14.7% of teachers reported previously participating in professional course training, of which 54.5% were in Al-Jahra, and 45.5% were in Hawalli.

Knowledge among the respondents

The knowledge of the respondents was assessed using five items. The first item assessed the foods recommended to consume most often (bread, cereal, and rice). More than half of the respondents responded correctly (57.7%). The second item concerned foods recommended to be consumed least often; 210 respondents responded correctly (70%). Regarding the number of servings of fruits/vegetables should eat daily, 54.3% responded correctly. Regarding the percentage of daily calories that should come from fat, 40.7% of the respondents answered the question correctly. Regarding the most caloric food, 43.3% of the respondents responded correctly (Table 2).

Table 1. Demographic characteristics of the respondents.

| Characteristics                          | n   | %  |
|------------------------------------------|-----|----|
| Gender                                   |     |    |
| Male                                     | 150 | 50 |
| Female                                   | 150 | 50 |
| Age                                      |     |    |
| <40                                      | 217 | 72.3|
| ≥40                                      | 83  | 27.7|
| Nationality                              |     |    |
| Kuwaiti                                  | 214 | 71.3|
| Other                                    | 86  | 28.7|
| Experience                               |     |    |
| <5                                       | 106 | 35.3|
| ≥5                                       | 194 | 64.7|
| Location                                 |     |    |
| Hawalli                                  | 150 | 50 |
| Al-Jahra                                 | 150 | 50 |
| Type of the school                       |     |    |
| Primary and intermediate                 | 200 | 66.7|
| Secondary                                | 100 | 33.3|
| Participating in health professional course previously |     |    |
| Yes                                      | 44  | 14.7|
| No                                       | 256 | 85.3|
| Total                                    | 300 | 100%|
Attitudes and beliefs

Six items were used to assess attitudes and beliefs related to healthy nutrition. Regarding the relationship between food and health, 96.7% of the respondents agreed, while 2% answered disagree, and 1.3% responded that they did not know. Only 89% believed that there was a relationship between food and heart disease. Around half of the respondents (44%) disagreed that it is difficult to obtain accurate nutrition information. Regarding the relationship between overweight and health problems, 91.3% agreed, 6.0% disagreed, and 5.0% responded that they did not know. Regarding whether they needed to change eating habits, 39% of the respondents agreed, 52% disagreed, and 9% responded that they did not know. Regarding the adverse effect of skipping meals, 79.3% agreed, 13.3% disagreed, and 7% responded that they did not know (Table 3).

There was no significant difference in knowledge and attitude scores concerning gender, age, experience, type of school, or nationality (Table 4). Respondents in Hawaii had a significantly

Table 2. Frequencies distribution of responses on the items of the knowledge scale (n=300).

| Nutrition knowledge question                                                                 | Correct n | %   | Incorrect n | %   | Total n |
|---------------------------------------------------------------------------------------------|-----------|-----|-------------|-----|---------|
| Which food group should be consumed most? (bread, cereal, rice, etc.)                       | 173       | 57.7| 127         | 42.3| 300     |
| Which food group should be consumed fewest? (fats, oils, sweets)                           | 210       | 70.0| 90          | 30.0| 300     |
| How many servings of fruits/vegetables should you eat per day? (at least five)            | 163       | 54.3| 137         | 45.7| 300     |
| What percent of your daily calories should come from fat? (30%)                           | 122       | 40.7| 178         | 59.3| 300     |
| What has the most calories: protein, carbohydrate, or fat? (1 g fat)                      | 130       | 43.3| 170         | 56.7| 300     |

Table 3. Frequencies distribution of responses on the items of the attitude scale (n=300).

| Nutrition attitudes and beliefs                                                                 | Agree/ true n | %   | Disagree/ false n | %   | Total n |
|------------------------------------------------------------------------------------------------|----------------|-----|-------------------|-----|---------|
| Learning the relationship between food and health is important                               | 290            | 96.7| 10                | 3.3 | 300     |
| What you eat can affect your chances of getting heart disease                               | 267            | 89.0| 33                | 11.0| 300     |
| People who are overweight have a higher risk of health problems                            | 274            | 91.3| 26                | 8.7 | 300     |
| Its hard to know what nutrition information to believe.                                     | 125            | 41.7| 175               | 58.3| 300     |
| The foods I eat/drink are healthy, so I do not need to change                               | 117            | 39.0| 183               | 61.0| 300     |
| Skipping meals affects my ability to do well in the day                                     | 238            | 79.3| 62                | 20.7| 300     |

Table 4. Student's t-test distribution of means of attitude and knowledge scores with respect to specific demographic characteristics (n=300).

|                          | Mean± SD        | 95% CI  | p    | Mean± SD        | 95% CI  | p    |
|--------------------------|-----------------|---------|------|-----------------|---------|------|
| Gender                   |                 |         |      |                 |         |      |
| Male                     | 8.2±1.8         | 7.9-8.5 | 0.18 | 2.2±1.4         | 2.5-3.0 | 0.39 |
| Female                   | 7.8±1.1         | 7.6-8.0 |      | 2.6±1.3         | 2.4-2.8 |      |
| Age                      |                 |         |      |                 |         |      |
| <40                      | 8.0±1.6         | 7.8-8.2 | 0.58 | 2.6±1.4         | 2.4-2.8 | 0.15 |
| ≥ 40                     | 7.9±1.2         | 7.7-8.2 |      | 2.8±1.4         | 2.5-3.1 |      |
| Experience               |                 |         |      |                 |         |      |
| <5                       | 8.1±1.8         | 7.8-8.5 | 0.30 | 2.5±1.4         | 2.2-2.7 | 0.08 |
| ≥5                       | 7.9±1.3         | 7.8-8.1 |      | 2.8±1.4         | 2.6-3.0 |      |
| Nationality              |                 |         |      |                 |         |      |
| Kuwaiti                  | 8.0±1.6         | 7.8-8.3 | 0.53 | 2.5±1.4         | 2.4-2.8 | 0.14 |
| Other                    | 7.9±1.2         | 7.7-8.2 |      | 2.8±1.4         | 2.5-3.1 |      |
| Type of school           |                 |         |      |                 |         |      |
| Primary and intermediate | 8.1±1.5         | 7.9-8.3 | 0.60 | 2.7±1.3         | 2.5-2.9 | 0.95 |
| High school              | 7.8±1.4         | 7.5-8.1 |      | 2.7±1.4         | 2.4-2.9 |      |
| Location                 |                 |         |      |                 |         |      |
| Hawalli                  | 7.9±1.5         | 7.6-8.1 | 0.03 | 2.6±1.4         | 2.4-2.9 | 0.95 |
| Al–Jahra                 | 8.1±1.5         | 7.9-8.4 |      | 2.7±1.4         | 2.4-2.9 |      |
| Professional training    |                 |         |      |                 |         |      |
| Yes                      | 7.8±1.1         | 7.4-8.1 | 0.23 | 3.2±1.4         | 2.8-3.6 | 0.005|
| No                       | 8.0±1.6         | 7.9-8.2 |      | 2.6±1.4         | 2.4-2.7 |      |

*Student’s t-test was applied; CI, confidence interval.
lower mean of attitude than Al-Jahrah teachers (7.9±1.5 vs 8.2±1.5, respectively, p=0.03).

**Dietary behaviors**

Regarding foods that they consumed the previous day, fruits and vegetables were reported to be the most consumed (Table 5). Eating in restaurants and eating soda and white bread on the day before the survey were reported by 54.3%, 51.0%, and 76.3%, respectively. Frozen desserts were not commonly eaten by the majority (62%). About half the sample reportedly consumed doughnuts and candy, 53.3% and 54.3%, respectively.

Multivariate logistic regression analysis was performed to measure the effect of sociodemographic characteristics on attitude and knowledge scores (Tables 6 and 7). The relationship by gender was statistically significant (p=0.004). The other factors were not significant.

Multivariate logistic regression was also performed to identify factors that affected the knowledge score. Teachers who had previous training courses were more knowledgeable about healthy foods than those who did not receive training (p=0.01). The other factors in the model were not statistically significant.

**Discussion**

The purpose of this study was to assess teachers’ KAP regarding healthy eating. Teachers are furnished with professional nutrition knowledge and are considered a valuable source of information; therefore, they are well-positioned to play an essential role in improving students’ healthy nutrition behaviors.

We identified limited knowledge among teachers concerning healthy food and nutrition. Overall, only a few participants answered all the knowledge score questions correctly. This finding was comparable to a study done in the US, which showed that no respondents answered all knowledge items correctly.11 Our findings showed that gender had no significant effect on knowledge. This finding was supported by a previous study showing that gender significantly affected nutrition knowledge.13 This similarity between findings may be related to the fact that both genders have similar lifestyles in Kuwait. A study from China showed that older teachers had significantly higher knowledge than younger teachers.

**Table 5. Dietary behaviors of the respondents one day before the survey distribution.**

|        | ≥1 time | 0 times |
|--------|---------|---------|
| Fruits | 44.6%   | 55.4%   |
| Milk   | 48.9%   | 51.1%   |
| Vegetables | 70.0% | 30.0%   |
| Restaurant foods | 54.3% | 45.7%   |
| Fruit flavored drink | 53.3% | 46.7%   |
| Sodas  | 54.3%   | 45.7%   |

**Table 6. Beta coefficients, their level of significance, and 95% confidence interval of the association of attitude by certain variables.**

| Beta coefficient | p-value | 95.0% Confidence interval for B Lower bound | Upper bound |
|------------------|---------|-------------------------------------------|-------------|
| Constant         | 8.899   | 2.6×10-4                                   | 7.799       | 9.998       |
| Gender           | -0.168  | 0.004                                      | -0.845      | -0.161      |
| Age              | 0.063   | 0.963                                      | -0.410      | 0.439       |
| Experience       | -0.005  | 0.940                                      | -0.402      | 0.373       |
| School           | -0.081  | 0.158                                      | -0.616      | 0.101       |
| Nationality      | -0.045  | 0.458                                      | -0.544      | 0.246       |
| Location         | 0.104   | 0.072                                      | -0.028      | 0.646       |
| Training         | -0.093  | 0.113                                      | -0.881      | 0.093       |

Reference categories: female, ≥ 40 years, ≥ 5 years, Secondary school, Other, Al-Jahrah, yes.

**Table 7. Beta coefficients, their level of significance, and 95% confidence interval of the association of knowledge by certain variables.**

| Beta coefficient | p-value | 95.0% Confidence interval for B Lower bound | Upper bound |
|------------------|---------|-------------------------------------------|-------------|
| Constant         | 2.132   | 0.0001                                     | 1.106       | 3.159       |
| Gender           | -0.028  | 0.634                                      | -0.397      | 0.242       |
| Age              | 0.015   | 0.817                                      | -0.346      | 0.438       |
| Experience       | 0.074   | 0.247                                      | -0.149      | 0.575       |
| School type      | -0.018  | 0.760                                      | -0.387      | 0.283       |
| Nationality      | 0.055   | 0.374                                      | -0.202      | 0.536       |
| Location         | 0.000   | 0.995                                      | -0.314      | 0.315       |
| Training         | 0.231   | 0.011                                      | 0.139       | 1.049       |

Reference categories: female, ≥ 40 years, ≥ 5 years, Secondary school, Other, Al-Jahrah, yes.
ers, which is in contrast to our findings. This difference in findings is perhaps related to the fact that older teachers in China had more experience increasing their knowledge.\textsuperscript{10,14}

Our findings are supported by a study carried out in Kuwait in 2011, which showed that attitudes were almost equivalent between Kuwaitis and non-Kuwaiti.\textsuperscript{13} It appears that non-Kuwaiti Arab teachers during their stay in Kuwait adopt the food and nutrition styles of Kuwaitis because the food culture is similar, and the lifestyles in Kuwait affect citizens and residents in the same manner.

In our study, teachers who previously participated in health food professional training courses had significantly higher knowledge than those who had not. Participation in a workshop or in-service nutrition training leads to improved knowledge. The number of teachers who participated in training was higher in a previous study (68\%) than in the present study (14.6\%).\textsuperscript{16} These findings may result from knowledge obtained from professional training courses. A study from China showed that previous training significantly affected total knowledge.\textsuperscript{10} These findings support our findings, which showed that previous training courses significantly affected total knowledge scores. The reason for this similarity may be related to the effectiveness of these nutrition courses.

We found that males and females had did not differ concerning attitudes. This finding agreed with a US study but not with all studies. The similarity between our findings and the US findings may be related to the similarity between the percentage of males and females participants.\textsuperscript{11} A study from Turkey showed that female teachers judged all attitude statements significantly more positively than men. In our study, teachers had very positive attitudes toward nutrition; however, there was no significant difference between genders, and male teachers have more positive attitudes than females.\textsuperscript{14} This difference is perhaps related to the fact that Turkey and Kuwait differ in terms of nutrition lifestyles.

When evaluating dietary behaviors, we found relatively high fruit and vegetable consumption and low fried food consumption among teachers (70\%, 75\%, and 47.4\%, respectively); these findings contrast with those from a study in Texas, US, where the proportions were 28.9\%, 34.4\%, and 3.3\%, respectively.\textsuperscript{11}

Although this was the first study in Kuwait to assess teachers’ knowledge, attitudes, and practices related to healthy eating, there were several limitations. The survey was distributed in only two of six major cities, suggesting that the results might not be generalized to all Kuwaiti teachers. Nevertheless, the two cities represented urban and rural areas in Kuwait. The study did not include private schools to investigate possible differences between private and governmental schools. Nevertheless, there is no reason to believe that teacher characteristics differ between public and private schools because the Ministry of Education in Kuwait exchanges teachers among schools every semester. The study relied on self-reported data, which may influence how teachers accurately report nutrition attitudes, beliefs, and health behaviors. Other methods such as simulations or situational judgment tests might be more appropriate. Our instrument was not validated; however, the literature lacks a validated instrument for this purpose. Nevertheless, the knowledge, attitude, and practice items were validated by an expert to ensure readability, clarity, and comprehensiveness.

**Conclusion**

There was limited knowledge of healthy eating combined with a low level of positive attitude among Kuwaiti teachers. This situation can affect the overall knowledge of the community. Professional training is a significant factor influencing knowledge scores. These findings support the notion that educational workshops should be established to promote healthy nutrition. Therefore, future research could focus on developing and incorporating nutrition education for teachers as part of their standard training requirements to ensure their health and productivity and their ability to deliver efficacious programs to their students.

**References**

1. McCann D, Barrett A, Cooper A, et al. Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. Lancet 2007;370:1560-7.
2. Nestle M. Food politics: How the food industry influences nutrition and health. University of California Press; 2013.
3. Sekhar V, Sivsankar P, Easwaran MA, et al. Knowledge, attitude and practice of school teachers towards oral health in Pondicherry. J Clin Diagn Res 2014;8:ZC12.
4. Kaushal P, Singh T, Padda AS, et al. Impact of health education on the knowledge, attitude and practices of teachers regarding reproductive health of adolescents of Amritsar, Punjab. J Clin Diagn Res 2015;9:LC18.
5. Fulkerson JA, French SA, Story M, et al. Foodservice staff perceptions of their influence on student food choices. J Am Diet Assoc 2002;102:97-9.
6. Hoque KE, Kamaluddin MA, Razak AZ, Wahid AA. Building healthy eating habits in childhood: a study of the attitudes,
knowledge and dietary habits of schoolchildren in Malaysia. Peer J 2016;4:e2651.
7. Dickson-Spillmann M, Siegrist M. Consumers’ knowledge of healthy diets and its correlation with dietary behaviour. J Hum Nutr Diet 2011;24:54-60.
8. Al-Isa A, Alfaddagh A. Nutritional knowledge among Kuwaiti college students. Health 2014;6:65063.
9. Chavan GM, Chavan VM. Knowledge, attitude and practices of secondary school teachers regarding school health services in children. Int J Community Med Public Health 2018;5:1541-6.
10. Liu H, Xu X, Liu D, et al. Nutrition-related knowledge, attitudes, and practices (KAP) among kindergarten teachers in Chongqing, China: A cross-sectional survey. International J Environ Res Public Health 2018;15:615.
11. Sharma S, Dortch KS, Byrd-Williams C, et al. Nutrition-related knowledge, attitudes, and dietary behaviors among head start teachers in Texas: a cross-sectional study. J Acad Nutr Diet 2013;113:558-62.
12. Lynch M. Kindergarten food familiarization. An exploratory study of teachers’ perspectives on food and nutrition in kindergartens. Appetite 2015;87:46-55.
13. El-Sabban F, Badr HE. Assessment of nutrition knowledge and related aspects among first-year Kuwait University students. Ecol Food Nutr 2015;50:181-95.
14. Aktas N, Contento IR, Güldemir O, Koch P. Classroom teachers’ attitudes towards nutrition education and the school food environment: An online survey in Turkey. J Nutr Educ Behav 2013;45:S61-2.
15. Burney NA, Johnes J, Al-Enezi M, Al-Musallam M. The efficiency of public schools: the case of Kuwait. Educ Econ 2013;21:360-79.
16. Nahikian-Nelms M. Influential factors of caregiver behavior at mealtime: a study of 24 child-care programs. J Am Diet Assoc 1997;97:505-9.
17. Legesse A, Muluken A, Getasew A. A survey on awareness of consumers about health problems of food additives in packaged foods and their attitude toward consumption of packaged foods: A case study at Jimma University. Int Food Res J 2016;23:375.
18. Odeyemi KA, Chukwu EE. Knowledge, attitude and practice of school health among primary school teachers in Ogun state, Nigeria. Nigerian J Paediatr 2015;42:340-5.