

The role of parents' educational background in healthy lifestyle practices and attitudes of their 6-year-old children

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Abstract

Objective: The aim of the present study was to examine parents' reported and desired frequencies (practices vs. attitudes) of their 6-year-old children's meals, nutritional intake and lifestyle components, as well as possible obstacles and desired support with respect to higher or lower educational backgrounds.

Design: Cross-sectional questionnaire study.

Setting: Five elementary schools in Uppsala, Sweden.

Subjects: Parents of 176 6-year-old pupils attending the first grade. The total response rate was 89.7%.

Results: Parents with a college degree reported that their 6-year-olds had a higher frequency of milk, fruit and vegetable intake, more physical activity and fewer hours watching television compared with parents with a secondary school degree. Congruent to these differences in reported practices, more parents with a college degree desired a higher frequency of milk, fruit and vegetable intake, more physical exercise and less television viewing for their children. Regarding parents' desired meal frequencies during the week, no differences between the groups with higher and lower levels of education were found. Despite similar attitudes, however, parents with a college degree reported that their children ate mostly all meals significantly more often during the week. Both parent groups stated lack of time as the most common obstacle in providing their children with desired lifestyle practices, although parents with a secondary school education added lack of money as a contributing factor.

Conclusions: As attitudes are not always reflected in reported practices, it seems a fruitful approach to assess both, as well as obstacles perceived by parents, before planning interventions to enhance healthy lifestyle habits in children.

Keywords

Parents

Lifestyle

Practices

Attitudes

Educational background

The rising incidence of childhood obesity and related disorders necessitates the development of effective primary prevention strategies. There is now enough epidemiological evidence to support the correlation between overweight in 4–5-year-olds and overweight and obesity in later childhood and in adult life^{1–5}. Therefore, primary prevention strategies should aim at pre-school children and their families. Because the home environment is crucial to children's health-related behaviour, knowledge about factors influencing parental practices is essential to make the implementation of primary preventive strategies for this age group possible. It seems rather consistent from the literature that parents' educational background and overall socio-economic status (SES) influence their lifestyle choices for their children in the expected direction⁶. Thus, a lower SES generally predicts a less healthy lifestyle in terms of nutrition, leisure and physical activities, resulting in

increased risk for childhood obesity and later cardiovascular risk^{7,8}. However, the pathway to these non-optimal parenting practices in low SES groups is not very clear. There is still the question of whether it is knowledge, attitudes or motivation, own unhealthy lifestyle practices, less optimal physical environment or perceived hindrances in executing plans for optimal lifestyle in their children that play the most significant role in the observed outcomes.

Family SES and children's lifestyle

Family SES seems to have an independent effect on adult health and health-related behaviour^{6–8}. Even when controlling for adult social class and current lifestyle practices, childhood SES has an independent negative effect on adult obesity and cardiovascular health. Apart from this independent risk, there are the socially differing parenting practices that influence outcomes. Children in

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high SES families, for example, drink fewer soft drinks and consume more fruits, vegetables, high-fibre bread, cereals, vitamins and foods low in monounsaturated fats than children in low SES homes^{9,10}. In addition, children of mothers with more education eat more vegetables¹¹, and parents' higher education is associated with a more desirable level of nutrient and vitamin intake in children¹². A qualitative study has pointed out that parents from lower SES groups are less likely to enforce food rules at home than higher SES parents, the former being more concerned with their children eating proper quantities of food¹³.

The Swedish context

In Sweden there is a strong social policy for promoting equity in health and social resources for the population. Therefore, primary preventive interventions and lifestyle information target parents of children broadly, as a whole group. Almost all parents (98%) attend the maternal and child health centres and receive standard information there. Therefore, it can be assumed that parents who have had access to the Swedish child health care system are quite aware of the recommended lifestyle for their children in terms of food consumption, physical exercise and healthy leisure activities. The general recommendation for young children is to eat three main meals and two to three between-meal snacks per day, including a snack around 7 o'clock in the evening if dinner was at 5. Milk, fruit and vegetables are recommended for consumption several times a day, whereas soft drinks and junk food are not encouraged. Candy is recommended to be reserved for weekends. However, the way information is perceived and processed within the family will be highly influenced by the social and cultural context, as well as personal values of the parents.

Parental practices vs. attitudes

Thus, family SES, as well as the social and cultural context, have an impact on parenting practices and the role models parents give to their children. However, we know less about the role of SES in parents' *attitudes* concerning the lifestyle of their children. Most studies tend to investigate actual parenting practices, whereas attitudes do not receive attention as often. An increasingly prevalent notion in the health behaviour literature, however, is that attitudes – more so than knowledge – influence behaviour. Attitudes are psychological tendencies that are expressed by evaluating a particular entity with the same degree of favour or disfavour. They are not directly observable but can be inferred from observable responses, behaviours and practices¹⁴.

One would therefore expect that differences in behaviour will be mirrored by differences in attitudes, and vice versa. Thus, given that lifestyle-related practices for their children differ between parents of high and low SES, so could lifestyle-related attitude. Therefore, investigating parental attitudes and how they do or do not

become translated into actual practices depending on the family's SES can provide us with key information in terms of targets for prevention interventions. It is also of interest to obtain information on what parents consider positive and negative circumstances to reach the goals of a healthy lifestyle for their children.

Methods

Subjects

Subjects were parents of 176 pupils attending the first grade in five different schools located in a school district of Uppsala. The schools were chosen to represent different social backgrounds. Parents ($n = 213$) of 158 children had answered the questionnaire: 42% had 12 years education or less and 58% had more than 12 years of education. Parents' age was distributed as follows: 20–30 years (7.6%), 31–40 years (58.2%), 41–50 years (32.2%) and 51–60 years (2.0%). There were 63 (39.9%) children who had a non-Swedish-speaking background. The study population represented 10% of the total number of 6-year-old children in Uppsala during this particular period. The study was approved by the Ethical Committee of the Faculty of Medicine, Uppsala University, Sweden (D.no. 03-537).

Instruments

The survey included 49 questions, both structured and open-ended, divided into four sections (Table 1). The questions were formulated to examine parents' reported practices and attitudes as follows: 'How many times per week *does* your 6-year-old child have breakfast?' and 'How many times per week do you think that your 6-year-old child *should have* breakfast?', respectively. The last part of the questionnaire included questions examining possible obstacles experienced by the parents and their desired support to reach healthy lifestyle goals for their children (Table 1).

The questions concerning meal patterns and nutrition intake have been used in a previous study among children and adolescents¹⁵. In this study, the questions were altered for use with parents; a pilot study using 12 participants was performed to test the functionality of the instrument. These participants were not included in the study. Respondents in the pilot study perceived that when they had to disclose their attitudes first and then their practices, social desirability strongly influenced their answers to the latter. Therefore, the order of these questions was switched.

Procedure

The school nurse at each chosen school was informed about the study and was asked to participate. Each school nurse handed out information letters, questionnaires and a return envelope to the pupils with instructions to give these to their parents. The parents were instructed to fill in the questionnaire, put it in the envelope and return it to

Table 1 Questions and possible answers to the questionnaire in the different sections

Content of the question	<i>n</i>	Possible answers
1. Demographic questions (gender of answering parent and their child, Swedish background or not, parents' education and age)	6	e.g. Education: (a) Primary school (b) Secondary school (c) College/University (d) Folk high-school (e) Other
2a. Parents' reported practices of children's meal patterns (breakfast, lunch, snack, dinner, evening snack)	5	Never (0) to seven (7) days per week
Parents' reported practices of children's intake practices for fruit, vegetables, milk and crisps/candy	4	(a) Never (b) Once a week (c) Several times a week (d) Every day (e) Several times a day
2b. Parents' reported practices of children's physical activity (exercise and organised activity)	5	(a) Never (b) Once every other month (c) 1–3 times per week (d) Once a week (e) Several times per week
Outdoor games and television/computer		(a) 0–1 h per day (b) 1–2 h per day (c) 2–3 h per day (d) 3–4 h per day (e) > 4 h per day
3a. Parents' attitudes towards children's meal patterns (breakfast, lunch, snack, dinner, evening snack)	5	Never (0) to seven (7) days per week
Parents' attitudes towards children's intake of fruit, vegetables, milk and crisps/candy	4	(a) Never (b) Once a week (c) Several times a week (d) Every day (e) Several times a day
3b. Parents' attitudes towards children's physical activity (exercise and organised activity)	5	(a) Never (b) Once every other month (c) 1–3 times per week (d) Once a week (e) Several times per week
Outdoor games and television/computer		(a) 0–1 h per day (b) 1–2 h per day (c) 2–3 h per day (d) 3–4 h per day (e) > 4 h per day
4a. Desired support for parents to give their children healthy meals and enough physical activity	1	Open question: What kind of support do you desire to give your child healthy meals and enough physical activity?
4b. Experienced obstacles to parents giving their children healthy meals and enough physical activity	4	Open questions: e.g. What kind of support do you want in order to give your child healthy meals and enough physical activity?

n – number of questions.

the school nurse via the pupil. The letters contained information about the study, that participation was voluntary and approved by the Ethical Committee, and that the questionnaires were coded. The reason for the code was to make it possible to send out a reminder. Reminders were sent to 38.6% of the families, and of the 68 reminders 50 questionnaires were filled in and returned to the school nurses, giving a total response rate of 89.7%. More than half (62%) of the questionnaires were filled in by the mothers, a third (34%) by both parents and 4% by the fathers.

Data analyses and statistical methods

Educational levels were merged into two groups: one contained parents with 12 years education or less (secondary school level) and the other group contained parents with more than 12 years education (college degree level). The number of meals per week was used as scale variable, whereas dummy variables were constructed for ordinal variables. Descriptive statistical methods were used to examine the answers to the structured questions, and independent *t*-tests were used to clarify differences between the groups and concerning the frequency of different meals. Fischer's PLSD (protected least significant difference) was used as a *post hoc* test to verify the significance of the dependent *t*-tests. Mann–Whitney *U*-tests were used to clarify differences in nutrition intake and physical activity between the two groups.

Reported obstacles and need of support were initially dichotomised into having reported any of the above or not. Then a qualitative content analysis was employed to examine the answers to the open-ended questions concerning the parents' thoughts about obstacles and their need for support¹⁶. The method we employed was *manifest content analysis*, designating categories based on the exact expressions used by the respondents¹⁷. We then assigned a number to each of these categories and treated them as dummy variables in the statistical analyses. Thus, the given numbers did not actually have numeric qualities, but were a tool to convert the qualitative data into a statistically useful format. χ^2 tests were used to examine differences in experienced obstacles and desired

support between the two groups with different levels of education. Linear regression equations were constructed, with reported meal patterns practices as dependent variables.

Results

Meal patterns, nutrition intake and physical activity

Parents with a college degree reported that their 6-year-olds had all meals (except dinner) significantly more often during a week than did parents with only secondary school education. However, no significant differences were found in attitudes concerning these meals (Table 2). Thus, less educated parents also thought that their children should be eating breakfast, lunch and a daytime snack every day, but this was not reflected in their reported practices.

For the other items concerning lifestyle, significant differences were found in both reported practices and attitudes between the two parental educational groups (Table 3). Children of parents with a college degree had junk food less often, milk, fruit and vegetables more often, did more exercise and organised activities, and played more outdoor games than children of parents with only a secondary school education. Hours reported spent watching television both for weekdays and weekends were more for the less educated parental group. The difference in reported practices was reflected in parents' attitudes towards milk, fruit and vegetable consumption, exercise and television viewing on weekdays. Thus, parents with only a secondary school education thought that their children did not need to drink milk, eat fruit and vegetables, and exercise as often as was thought by the parents in the college degree group. Two-thirds of the parents in the less educated group thought 1–2 h of television on weekdays was fine, whereas the majority of parents in the well-educated group thought 0–1 h daily to be the most suitable for their children. However, there was no statistical difference between attitudes to junk food, desired frequency of organised activities, outdoor games and television viewing on weekends (Table 3).

Table 2 Differences between parents of different education levels regarding their reported practices and attitudes to their childrens' meal pattern; means (standard deviation) for to what extent the child ate/should eat the meals of the day weekly

	Parents with < 12 years education	Parents with ≥ 12 years education	<i>t</i>	<i>P</i>
Breakfast practice	4.8 (2.4)	6.8 (1.0)	07:02	0.0001
Breakfast attitude	6.9 (0.7)	7.0 (0)	01:09	NS
Lunch practice	6.2 (1.4)	6.8 (0.7)	03:53	0.0005
Lunch attitude	6.9 (0.5)	6.9 (0.4)	01:18	NS
Snack practice	6.1 (1.6)	6.7 (0.7)	03:18	0.002
Snack attitude	6.9 (0.6)	6.9 (0.5)	00:02	NS
Evening snack practice	3.3 (2.9)	4.4 (2.8)	02:49	0.01
Evening snack attitude	5.4 (2.7)	4.4 (3.3)	01:09	NS

NS – non-significant.

Table 3 The most common frequency (mode) and *P*-value for some nutrition intake and physical activities in the two educational groups

		< 12 years education	≥ 12 years education	<i>P</i>
Milk	Practice	58.2% every day	38.5% several times per day	0.001
	Attitude	77.6% every day	45.0% several times per day	0.006
Candy/crisps	Practice	68.2% several times per week	91.0% once/twice per week	0.0001
	Attitude	97.0% 1–2 times per day	98.8% once/twice per week	NS
Fruit	Practice	44.8% every day	49.5% every day	0.001
	Attitude	77.6% every day	58.2% several times per day	0.0001
Vegetable	Practice	65.7% several times per week	35.2% every day	0.0001
	Attitude	73.1% every day	50.6% several times per day	0.0001
Exercise	Practice	25.4% once per week	35.6% once a week	0.0002
	Attitude	47.8% once per week	72.5% several times per week	0.0001
Organised activity	Practice	28.4% once a week	51.7% once a week	0.0001
	Attitude	67.2% once a week	68.1% once a week	NS
Outdoor games	Practice	49.3% 1–2 h per day	64.8% 1–2 h per day	0.0001
	Attitude	38.8% 1–2 h per day	42.9% 2–3 h per day	NS
TV/computer (weekday)	Practice	37.3% 1–2 h per day	40.7% 0–1 h per day	0.0001
	Attitude	68.7% 1–2 h per day	56.0% 0–1 h per day	0.0001
TV/computer (weekend)	Practice	43.4% > 4 h per day	49.5% 2–3 h per day	0.0001
	Attitude	49.3% 1–2 h per day	55.0% 1–2 h per day	NS

TV – television; NS – non-significant by Mann–Whitney U-test.

Experienced obstacles

In total, 122 (69.3%) parents reported that their child did not eat enough healthy meals and did not get enough physical exercise, due to experienced obstacles. Of the parents who experienced obstacles, 53 (43.4%) had secondary school level education and 69 (56.6%) had a college degree (not significant). The obstacles were categorised into five different groups through manifest content analysis: child being fastidious; lack of time; lack of money; lack of time in combination with lack of money; and lack of time in combination with the fact the child did not want to play outdoors but preferred television/computer. The sixth group was those parents who did not experience any obstacles.

When comparing the kind of obstacles reported by the two parental groups, significant differences emerged. More parents with a higher education stated lack of time as the most common obstacle, compared with parents with lower levels of education, who stated lack of money and lack of time in combination with lack of money as their most common obstacles ($P < 0.001$). Significantly more parents with a high level of education reported that the behaviour and fastidiousness of the child was part of the reason for the children not having enough healthy meals and physical exercise, e.g. that the child did not want to play outdoors, but preferred the television/computer ($P < 0.001$).

Examining Swedish- and non-Swedish-speaking parents, the former significantly more often stated lack of time and behaviour of the child as their most common obstacle. Non-Swedish-speaking parents, on the other hand, more often cited lack of money as the most common obstacle in reaching healthy lifestyle goals for their children ($P < 0.005$).

Desired support

There were 104 parents (59.1%) who stated a need for support in order to be able to give their children healthy

meals and enough physical activity. The figures were fairly evenly divided between the education groups: 48 (46.2%) of parents with secondary school examinations and 56 (53.8%) of parents with a college degree stated a need for support (not significant). The desired support was categorised into six groups: more physical activity in school; shorter working day; domestic help; better food at school; more teaching about food and physical activity at school; and economic support. The seventh group described no need for support. There was no significant difference between the two parental groups and, irrespective of educational background, parents identified the school as the most commonly desired source of support. When desired support from the school was disregarded in the analysis, parents with lower levels of education significantly more often desired shorter working days and economic support, compared with parents with a higher education, who significantly more often desired domestic help ($P < 0.04$). Examining Swedish- and non-Swedish-speaking parents, Swedish-speaking parents significantly more often desired support from the school and domestic help compared with non-Swedish-speaking parents who significantly more often desired economic support ($P < 0.009$).

Linear regression analyses

Linear regression equations were constructed to explain the variance in reported practices for the different meals of the day, given that the explanation did not seem to be differing attitudes of the parents in the two different groups. Our main question was whether there were variables other than educational level that independently predicted meal patterns.

The best explained variance in reported meal patterns was for eating breakfast ($R^2 = 0.51$). Parental higher education and frequency of milk drinking were positively

related to a higher frequency of eating breakfast. Factors having a negative impact on frequency of eating breakfast were: non-Swedish-speaking background, reported ≥ 3 h of television viewing on weekdays, and reporting any kind of hindrance to healthy lifestyle choices for children. Eating lunch as a dependent variable was also positively affected by parents' educational level, but not the other meal patterns, i.e. dinner and snacks. Other variables positively influencing frequency of lunch, snacks and dinner per week were parents' perception of being able to provide their children with healthy food habits and less time allowed for television viewing daily. Thus, feelings of not being able to provide the child with healthy meals had an independent negative effect on healthy food behaviour practices, as did allowing children to view television for ≥ 3 h per day.

Fruit intake was influenced by parents' perception of being able to provide their children with healthy food habits, and vegetable intake by the amount of allowed television/computer time. As expected, parental educational level and television viewing were highly correlated ($r = 0.33$ for 0–1 h per day and $r = -0.405$ for 3–4 h per day for the group with higher education).

In summary, the regression equations supported the notion that parental education has an independent effect on the frequencies of eating breakfast and lunch (Table 4). However, the effect of parental education seemed to be mediated by television viewing for the other meal patterns as well as for vegetable intake.

An additional variable, parents' perception of being able to provide their children with healthy eating habits proved to be an independent predictor of frequencies of eating lunch, snacks and dinner, and fruit intake. Notably, this perception was not significantly correlated with parental education and thus cannot be treated as a kind of proxy for parental education, as seems to be the case with television viewing. Interestingly, those who perceived that they had the ability to provide their children with healthy eating habits reported significantly more obstacles compared with those who did not feel that they had this ability ($P < 0.003$).

Discussion

The congruence and incongruence of parental attitudes and reported practices

There was a significant difference between the two parental education groups, with all examined lifestyle choices conducive to health in children being more common among the group with more years of education. The results are in agreement with those of a study in Stockholm of 9-year-olds showing that children in poorer areas took part in organised activities less often and spent more time using a television or computer¹⁸. It is also established in the existing literature that higher levels of education in parents correlate with healthier patterns of

Table 4 Results from the regression equations for experience with meal pattern and nutritional intake

	Parental education:			NSS back-ground:	Hours of TV allowed weekdays: 3–4 and >4 h per day compared with fewer hours	Reported hindrance to ideal lifestyle:	Frequency of drinking milk: 1–7 times per week	I think my child has healthy food habits:	Parents aged 40–50 years (compared with 20–30, 30–40 and 50–60)			Snacks: 1–7 times per week	Fruit/vegetable intake: never and once a week compared with more often
	B	P	P						B	P	B		
Breakfast $R^2 = 0.51$	0.833	0.006	0.970	0.002	-1.906, -2.599	0.000, 0.002	0.294	-0.432	0.035	0.301	0.000	0.399	0.000
Lunch $R^2 = 0.36$	0.580	0.001	0.207*	0.005*	0.000, 0.005*	0.000, 0.002	0.294	-0.931	0.000	0.301	0.000	-2.002, -1.069	0.000, 0.005
Snacks $R^2 = 0.16$			-0.328	0.000				-0.540	0.002	0.172	0.001		
Dinner $R^2 = 0.21$								0.512	0.019				
Fruit intake $R^2 = 0.15$													
Vegetable intake $R^2 = 0.23$					-0.731	0.003							

NSS – non-Swedish speaking; TV – television; B – coefficient.

*TV on weekends.

nutrition intake and physical activity in children. Also, when taking different social and cultural factors into account, parents' academic competence seems to be significant for both healthier eating patterns and for knowledge of food and nutrition^{19,20}.

The difference in reported practices was mirrored by parental attitudes regarding fruit and vegetable consumption, hours of exercise and hours allowed for television and computer use on weekdays. Thus, reported practices in these areas were *congruent* with parents' attitudes. What is intriguing in our results is that the different practices for meal patterns, organised activity and outdoor games, consumption of junk foods, and hours allowed for television and computer use on weekdays were not accompanied by differences in parental attitudes between the two educational levels. Reported practices in these areas were, thus, *not congruent* with parents' attitudes.

It seems quite clear from the above that depending on whether parental attitudes and practices are congruent or not, different types of interventions are suitable. Where parental attitudes show a preference for less healthy lifestyle choices, such as, for example, for fruit and vegetable consumption in this study, interventions addressing knowledge and attitudes might be needed. For lifestyle areas where parents seem aware of and are positive towards healthy choices, the specific obstacles and issues of parenting self-efficacy might need to be addressed. In any case, it seems a fruitful approach to assess both attitudes and reported practices when examining young children's lifestyles.

Experienced obstacles and parenting self-efficacy

Seventy per cent of participating parents experienced obstacles in reaching the desired goals for achieving a healthy lifestyle for their children, with lack of time as the main obstacle. Although there was no difference between the proportion of parents reporting obstacles between the two educational groups, significantly more parents with a lower education perceived lack of money or the latter in combination with lack of time to be the main issue. An explanation for this pattern might of course be that lower educational levels lead to jobs with lower wages and less influence on work hours.

For those with a higher education, lack of time was the most important obstacle, and the answers indicate that these parents would willingly trade their current hours performing household tasks to engage more with their children.

The concept of self-efficacy is a perception of one's ability to perform competently and effectively at a particular task or in a particular setting²¹. People with a high sense of self-efficacy will persist in a given task, whereas low self-efficacy is related to giving up prematurely. Interestingly, those parents who felt they were able to provide their child with healthy eating habits, i.e. felt successful in this particular area, reported significantly more obstacles compared with those who

felt they were not, for each hindrance category. Our question on the perceived ability to provide the child with healthy eating habits might thus be tapping into parenting self-efficacy. The 'Control', 'Boundaries' and 'Routine' subscales described in Kendall and Bloomfield's parenting self-efficacy instrument²² seem conceptually related to this item. Given the influence of this single variable on the majority of food-related practices (Table 4), it certainly seems to reflect a central mechanism influencing parenting practices.

What then is the relationship between educational background and parenting self-efficacy? Educational background explained 20–25% of the variance for most subscales in the parenting self-efficacy instrument of Kendall and Bloomfield²². In this study, parents with a lower education did not succeed in implementing practices according to their attitudes regarding most of the lifestyle items examined. It might well be that parents with lower education lack the self-efficacy required to implement their views. However, although parenting self-efficacy and educational background are interrelated, less education does not necessarily mean less self-efficacy. In this study, there was no difference depending on educational background in the perception of being able to provide the child with healthy eating habits. Neither was there a difference between experiencing obstacles on the whole. However, the type of obstacles differed. It is possible, therefore, that certain obstacles weigh more in the final pathway leading from knowledge through to attitudes to behavioural practices, where self-efficacy is a key element to success, as pointed out in a recent Cochrane review²³.

We do not claim to have measured parenting self-efficacy adequately in this study. Our aim with this discussion is to highlight the fact that parental attitudes did not differ between the educational groups for most of the lifestyle areas examined, whereas reported practices did. The explanation for this pathway was, thus, not differences in education or even knowledge *per se*, but rather something that could be seen as a confounder. A combination of practical obstacles perceived as serious and (possibly resulting) low parenting self-efficacy are both factors to do with educational level and the outcomes examined. Although there is certainly much more to learn about this topic, it is important to realise that most parents with less education in this study wanted the same for their children as those with higher formal qualifications, but the possibilities of putting attitudes into practices seemed to differ for these two groups.

Methodological considerations

The fact that the parents were asked to state both their attitudes and their practices might produce moral difficulties. To admit that you have not given your child what you believe is appropriate can be hard and may have influenced the results. There is also the issue of 'social

desirability', a term that refers to respondents giving answers that they think are expected from them. By asking parents to describe both their attitudes and practices, the social desirability of answers to reported practices might have been reduced, as indicated by our pilot study, whereas reported attitudes might certainly be affected. In addition, among parents of foreign origin, poor understanding of the subtle difference between the two lines of questions might have influenced the answers.

Although the response rate in the study was excellent, among the 18 parents (10%) who did not respond only 1% were from a school where the majority of parents had a college degree, while the schools where parents had a lower level of education had a higher drop-out rate.

Combining qualitative and quantitative methods in the same study and especially the same analysis is still considered contradictory by some researchers. Converting the categories to dummy variables was a useful strategy employed elsewhere²⁴ and did not change the character of the data as the texts were not actually quantified. By using two researchers to categorise the material (C.S. and A.S.), the credibility of the findings was increased²⁵.

Limitations

The questionnaire failed to differentiate between television viewing and time spent playing computer games. Current evidence strongly suggests that television viewing is associated with childhood obesity and aggressive play in children. However, studies thus far have not incriminated computer and video games in this aspect. In fact, it seems that computer and video games increase spatial intelligence²⁶. Thus, it is important to separate television viewing from playing video and computer games in future studies.

The context of the study is Sweden, a comparatively equitable society, where social policies explicitly have worked against social inequities for at least half a century. This means that the living standards and wages do not differ as sharply between the educational groups. The special strength of the study is, however, that 40% of participants had a non-Swedish-speaking background, which is more than in the population as a whole. This would in fact increase the generalisability of the findings for other cultural contexts.

Conclusion

The main result of the study was that parents' reported practices for their 6-year-old children regarding meal patterns, nutrition intake and lifestyle behaviours differed due to educational background but this was not shown to the same extent with regard to their attitudes. Thus, it seems to be a fruitful approach to assess parents' reported practices and attitudes as well as perceived obstacles before different types of interventions are decided upon to attain healthy lifestyle habits in children.

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