Abstract

Background: Universal infant free school meals (UIFSM) were introduced in September 2014 and are available to all key stage 1 (4-7 years) children attending state-maintained infant and primary schools in England. This paper aimed to investigate the school-based factors, child and family socio-demographic characteristics, and parental beliefs associated with UIFSM take up in an urban community.

Methodology: A cross-sectional questionnaire survey was completed in October-November 2015, amongst parents whose children attended eligible schools in Leicester, England. A questionnaire about school meals was also completed by each school.

Results: Parents reported their child did not take (non-UIFSM, n=159) or took (UIFSM, n=517) a UIFSM on most days. The non-UIFSM group were more likely to be White-British, have a higher socio-economic status, have English as a first language and involve their child in the decision over whether or not to take UIFSM, compared to the UIFSM group. Cluster analysis revealed non-UIFSM parents were either; concerned over quality of meals and what/how much their child ate, concerned only by what/how much their child ate or their child did not like the food provided. Two subsets of parents in the UIFSM group were either; very positive about UIFSM or appeared to take meals because they were free. Schools used a variety of measures to increase and maintain UIFSM take up.

Conclusions; Parents like to have control over what their child eats at school and children need to enjoy their school meals. Using a range of interventions to target sub-sets of parents may help local authorities, schools and caterers to increase UIFSM take up.

Introduction

In September 2014, the provision of universal infant free school meals (UIFSM) was introduced for all Key Stage 1 (4-7 years) children attending state-funded infant and primary schools in England (1). UIFSM entitles all eligible children to a free lunch at school on school days (around 190 days per year in England). This follows recommendations set out in the 'School Food Plan' and the success of pilot schemes in Newham, Durham and Wolverhampton (2, 3). The initiative comes amidst ongoing work to raise standards of school food and evidence suggesting a positive effect of school meals on both children and the school community (2-5).

The benefits of a school lunch are well established. School lunch contributes around a third of energy and micronutrient intake on school days, and has been shown to play a role in the

development of healthy eating habits, academic achievement, improved behaviour, and a reduction in picky eating behaviours at school (3, 6, 7). Numerous studies have also shown that, on average, school lunches are of a superior nutritional quality to the food provided as a packed lunch in UK primary schools (8-14), with fewer than 1% of packed lunches meeting the nutrient-based framework which underlies current food-based standards for school food (8).

In 2015, around 1.6 million children aged 4-15 years were registered for a means-tested free school meal (FSM), available to families with a low income or in receipt of particular state benefits (15, 16). Around 14% of those registered for FSM, however, did not claim their entitlement (15, 17). Pupils in England are less likely to claim a FSM if they are living in a more affluent area, attending schools with a lower free school meal registration rate, are White British, or are from families with a higher occupational status or a higher level of parental qualification (15).

Take up of UIFSM (85.6% in January 2015) was lower than the Government target of 87% (18). The practicalities of introducing UIFSM may have proved challenging for many schools (19). and these challenges have the potential to affect the school meal experience and bothpupil and parental perceptions of school food (6, 19, 20). Data collected from the UIFSM pilot schemes suggest a lack of meal choice may prevent children from taking their free meal (3). Furthermore, parents whose children took a UIFSM were more likely to rate meals positively, think school meals were healthier than a packed lunch, and agree that their child is willing to try new foods (3). A study by Day *et al*., (2015) explored pupils' perceptions of school meals just prior to the introduction of UIFSM. It is clear that the acceptance of school meals is important to the child but the extent to which the parent or child influences the decision is unclear (19, 21). A deeper understanding of the issues related to low UIFSM take up could be used to both facilitate an increase in take up, and enable caterers to target interventions aimed at pupils and parents.

In particular, attention needs to be paid to diverse local authorities where reasons related to non-take up may be complex. Capturing issues related to culture may be effective in helping to design appropriate interventions. One such diverse local authority is Leicester, situated in the East Midlands of England. Leicester has a high proportion of children living in poverty (37%) and 18.9% of children aged 4-18 years were registered for free school meals in 2015. FSM take up amongst nursery and primary school children was 85% whilst UIFSM take up was 81.0% (17, 22). Leicester is an ethnically and socioeconomically diverse community with 45% of the population classified as White British, 5% Other White, 28% Indian or Indian British, and 21% other ethnic groups (23). The aim of this study was, therefore, to investigate school-based factors, child and

family socio-demographic characteristics, and parental beliefs associated with UIFSM take up in Leicester, a multicultural urban community.

Methods

Data on current UIFSM take up, at all 64 state-maintained, local authority-catered infant and primary schools in Leicester city local authority area were obtained from the Spring 2015 school census (18). Schools were ranked by current UIFSM take up (percentage), low, through high. The first twenty schools from the list, with the lowest UIFSM take up were selected. A letter and information sheet was sent to the head teacher at each school in September 2015, inviting them to participate in the study. Follow-up phone calls were made one week later by a member of the research team. If a school declined to participate, the next school on the list was selected. A total of 27 schools were contacted and 19 schools agreed to participate within the data collection period.

At each school, every key stage 1 child (in foundation, year 1, and year 2 classes) aged 4-7 years was given an information sheet (detailing the purpose of the study) and a paper-based questionnaire to take home to their parents/carers (we will subsequently use the term 'parents' to refer to parents, carers or relatives who complete the questionnaire). Consent was assumed where questionnaires were returned. Questionnaires were distributed to and collected from schools by a researcher in October and November 2015. The school was responsible for the distribution and collection of the questionnaires to and from parents. Parents self-completed information on demographic characteristics of the parent and the child, the extent to which various family members were involved in the decision to take UIFSMs, and one of two sections, dependent on whether or not their child took a UIFSM; categorised as UIFSM and non-UIFSM. For children categorised as UIFSM, parents were asked to respond yes or no to 28 statements representing possible reasons for taking a UIFSM along with open questions for additional reasons and comments. Similarly, for the non-UIFSM group, parents were asked to respond yes or no to a list of 31 statements representing possible reasons for not taking a UIFSM. The statements in both sections were informed using previous studies on FSM, and input from researchers and the local authority caterer (3, 15, 21). Data were entered by two researchers and 10% of all data entry was double checked. A short questionnaire was also completed by a member of staff at each school, about characteristics of the school and the lunch service. The study was approved by the University of Nottingham Research Ethics Committee, School of Biosciences (SBREC150101A).

Socioeconomic status was estimated by coding parental occupation using the Office for National Statistics Standard Occupational Classification coding tool (24) and National Statistics Socioeconomic Classification code (NS-SEC) (25). NS-SEC codes were collapsed into 4 groups (I

Managerial and professional occupations, II Intermediate occupations, III Routine & manual occupations, IV never worked or long term unemployed). The highest NS-SEC code was assumed where occupation was provided for more than one parent.

Statistical analyses were carried out in SPSS v 22 (26) and significance was set a 0.05. Data were screened for missing data, univariate outliers, and normality. Chi-squared or Fisher's exact tests with a Bonferoni adjustment were used to examine differences between those children who did and did not take a UIFSM for categorical variables (followed by *post hoc* tests where appropriate), and t-tests were used for continuous variables (as normality was confirmed by a Shapiro-Wilk test). Two-step cluster analyses were used to identify natural groupings of respondents (UIFSM or non-UIFSM) on the basis of their endorsement of all/selected statements relating to the decision about taking USIFM. Participants were first pre-clustered into small subclasses, then clustered into an appropriate number of larger classes, based on respondents with similar profiles (27). Degrees of association between clusters of 0.5 or greater were considered important, similar to the analysis undertaken by Fleury et al. (2015). Cluster analyses were followed by ANOVA to test for any differences in demographic characteristics of resultant clusters.

Results

A total of 2964 questionnaires were distributed and 782 were returned, giving an overall response rate of 26.4%. Thirty one questionnaires were excluded as only demographic information had been completed, questionnaires were also excluded if key data were missing; it was not possible to tell if the child took a school meal or not (n=2), if parents had completed the wrong section of the questionnaire for their child's school meal status (n=12), which school a child attended (n=5), or if child's age, child's year group, child's ethnicity, if English was not the child's first language, it was not clear who completed the questionnaire, or if the family's socioeconomic status could not be determined (n=58). Participants excluded during list-wise deletion were significantly more likely to have one or more children registered for UIFSM, were more likely to have a child for whom English was not their first language, were less likely to be White British, and the questionnaire was less likely to be completed by the child's mother (data not shown; $p<0.01$). Missing data on other demographic variables were treated in a pair-wise deletion manner. A total of 676 questionnaires were therefore included in the analysis, 159 (23.5%) non-UIFSM and 517 (76.5%) USIFM (Table 1).

The non-UIFSM group were significantly more likely to be White British, to have a family NS-SEC of Class I or Class II, or to have English as their first language. Non-UIFSM children were less likely to be registered for FSM (Table 1). There was no significant effect of year group, having an

older sibling, if the child had a food allergy (which may prevent children from taking school meals), other ethnicities, or a trend in the % children registered for a FSM at the school.

There were no significant differences between non-UIFSM and UIFSM parents with respect to the extent to which the respondent or their partner made the decision over whether the child takes a meal, but respondents were more likely to agree that children were involved in the decision in the non-UIFSM group (figure 1).

Among non-UIFSM, a two-step cluster analysis revealed three clusters of responses in relation to the reasons for their decision. Cohesion was poor (0.2) using the silhouette measure of cohesion and separation (26) but the ratio of the larger to smaller cluster was 2.19 (good) (27). Four reasons were of importance amongst these parents (Table 2), 'I don't like the current menu' and 'I like to know how much food my child eats', 'I like to know what food my child eats' and 'I think school meals are of poor quality'. Cluster one (20%) endorsed all four of these statements but the order (1-5) indicates the areas of most concern were with the current menu and the quality of the food on offer (what and how much food children ate was of concern but not of the greatest importance). These parents also agreed they could provide a healthier packed lunch from home, but this was not significant in the cluster analysis (0.33). Only two reasons were important to cluster two (38%); concerns about what and how much their child eats. Parents within this cluster did not agree that they had any concerns about the quality of the current menu (100%) or the quality of the food on offer (94.1%). Cluster three (43%) did not have any clear reasons for their child not taking UIFSM. The only factor ticked was 'My child does not like the food provided' but this was rated of low importance overall (0.06).

ANOVAs examining differences between clusters, found respondents in cluster 3 of the non-UIFSM group were most likely to disagree that they ($F(2, 127) = 3.111$, $p = 0.042$) or their partner ($F(2, 149) = 3.248$ $p<0.05$) made the decision over whether their child took UIFSM. There were no significant differences between clusters in terms of ethnicity, socio-economic status, year group, if the child suffered from an allergy, if the child had a sibling, if English was not the child's first language, if either the respondent or their partner were working, or if the child made the decision over whether they took a meal (data not shown).

Two clusters of parents within the UIFSM group were also identified (Table 3). Cohesion amongst this group was fair (0.3) using the silhouette measure of cohesion and separation (26) and the ratio of the larger to smaller cluster was 1.17 (good). Respondents in the first cluster answered yes to a variety of questions, including 'there is enough choice each day', 'the dining room environment is pleasant', 'the variety of food on offer is good' and 'dining room staff are friendly/encouraging'.

Respondents in the second cluster answered no to most questions and did not seem to have any clear reasons for taking school meals, other than their child being encouraged to try new foods, which was rated of low importance overall (0.37).

ANOVAs examining differences between clusters in the UIFSM group found no significant differences between clusters for any of the variables described above (data not shown).

The school questionnaire revealed (figure 2) that most schools allowed children to choose meals at the point of service or switch from UIFSM to packed lunch freely. Most schools encouraged children to try new foods and monitored packed lunches. Few schools, however, engaged children in school food issues via a school nutrition action group (SNAG) or other method.

Discussion

This study was undertaken to explore why the take up of UIFSM was lower than government targets in Leicester local authority, England. Results suggest children may not take UIFSM as either they do not like the food provided or their parents are worried about what or how much their child eats. A minority of families also have concerns about the food on offer. Parents whose children took UIFSM were happy with many aspects of their child's meals and experience in the dining room or appeared content for their child to take a meal at school, as it was free. Children of respondents who were not working or were of lower socioeconomic status were more likely to take a UIFSM and evidence suggests most schools are working to ensure a flexible and well-managed meals service.

In the current study, the child not liking meals was the most frequently cited factor in non-UIFSM, but parental concerns over the quality or variety of food was less of an issue than in earlier pilot studies (3). This is possibly to do with improvements in school food or efforts by caterers involved. The cluster analysis, however, revealed the child not liking meals was not of great importance and subsets of parents existed, differing in their responses about UIFSM. Namely; those who have a variety of specific concerns over the food provided and their child's own experience, those whose only concern was what or how much their child eats, and those who have no concerns about school food except that their child does not like the food provided. These subgroups are comparable to those reported by Kitchen et al., (2013) who classified those not taking UIFSM based on who made the decision; joint-led (similar to our first cluster), parent-led (similar to our second cluster) or child-led (similar to our third cluster). Overall, parents in the non-UIFSM group were more likely to involve the child in the decision making process, similar to previous studies of non-take up of school meals or FSM (3, 4, 21, 28).

In the parent-led cluster (cluster 2) of non-UIFSM, quantity and type of foods eaten is of great importance, revealing concerns over fussy eating, children being hungry whilst at school, or a need for parental control. Fussy eating has been implicated in previous studies (21) but despite being the fourth most frequently cited factor for not taking UIFSM, was of low importance in the cluster analysis. Taking a school meal may help to alleviate fussy eating (3), but parents are clearly not prepared to risk their child going hungry. Parents may worry about a loss of control in providing food for their child (28) suggesting an authoritarian parenting style, characterised by low responsiveness (involvement of the child) and high demandingness (control and supervision) by the parent (29). Providing a packed lunch may limit parental anxiety, allow parents to retain control and monitor intake.

In the child-led cluster (cluster 3) of non-UIFSM, parents had little concern about the food or the school food environment and, although of low importance, their child did not like the food provided. This may be indicative of a more permissive parenting style, characterised by high responsiveness and low demandingness (30). These parents may be associated with a lower level of routine dietary monitoring and their children may potentially receive poorer quality packed lunches with their preferred foods(31).

The joint-led cluster (cluster 1) of non-UIFSM were the only respondents to have concerns about the food,, the current menu and a belief that the quality of school meals was poor. Although UIFSM must meet the same nutritional standards (food-based standards) as all school meals in England, there is no guarantee that food is of a high standard (e.g. food could be over-cooked, under-cooked or lack flavour or visual appeal). The visual quality and standard of cooking of school meals can vary between schools and is difficult to control or measure. They believed a healthier meal could be provided from home and expected their children not to like the food on offer. These parents may be authoritative (as per the parent-led cluster), but also exhibiting a highly demanding stance with respect to the nutrient intake of their children. This group may have strong feelings about their child's diet, feel the need to monitor their child's intake and may be the hardest group to convince of the benefits of school meals (29, 32).

Parents whose child took a UIFSM reported that meals were of good quality, healthy and that their child was encouraged to eat new foods at school. Cluster analysis, however, revealed two subsets: it is likely that UIFSM parents in cluster 1 are supporters of school meals, whether (89.6% reported liking) or not their child likes the food on offer. Cluster 2 may take them just because they are free; regardless of whether or not (62.6% report not) the child likes the meals.

Parents of higher socioeconomic status (as measured by occupation) were less likely to take a UIFSM, consistent with findings from Iniesta-Martinez and Evans (2012) on FSM. Our study showed that although parents regard school meals as being healthy (71.6%), only 48.5% thought that they were healthier than a packed lunch, a view which research suggests is inaccurate (8, 10-13). More advice on the variation needed within packed lunches to create the same nutritional diversity as that of school meals (10, 33) and what constitutes a healthy packed lunches should be made available for parents,

This research also clearly highlights the need for multiple, tailored messages to promote UIFSM successfully to all groups of parents. Caterers should continue to promote meals to both parents (as the majority of parents, regardless of uptake, agreed it was their decision) and children, as recommended by the School Food Plan (34). A record of their child's meal choices, perhaps via a cashless system where available, may help to alleviate parental concerns. Being invited to eat a school meal may also prevent a disparity between perceptions of school food and reality. Some parents (e.g. cluster 1, of the UIFSM group) may need to feel they have a choice and choose the best meals for their child, not just because they are free. Some parents (e.g. cluster 2, of the UIFSM group) may need support when children move to key stage 2 (aged 7-11 years) and UIFSM's discontinue.

Most schools reported that they had a number of measures in place to support children in making food choices and were flexible in their approach to the meals service, for example, allowing children to switch between UIFSM and packed lunch. Children could be encouraged to take meals by making meals more visually appealing, by allowing children to sit with their friends who take a packed lunch and by regular tasting sessions at school (2). Allowing children some ownership of school meals, by setting up a SNAG or other group for children should be encouraged.

Furthermore, this study demonstrates that although concerns about menus persist amongst a minority of parents, that it is possible, even in a diverse area such as Leicester, to provide food that appeals to families from non-White backgrounds and which doesn't violate religious standards. Future work might usefully explore how to further engage White British families and those who still find the food unfamiliar. Finally, the money provided to schools to fund UIFSM is dependent on the average number of meals that the school serves to eligible pupils (34). Those schools with lower UIFSM will receive less money and schools with low take up of school meals mail struggle to make their catering service break even. Encouraging children to take the meals will ensure that a school meals service remains available to all children who want or need it.

There are some limitations of this study and its applicability to other areas of the UK. The study was small and may not be representative of all parents in England. Leicester City is multicultural and school meals must cater for children from a variety of cultural backgrounds. UIFSM take up in Leicester is higher than in other areas of the England and gathering the views of parents whose children do not take the meals is challenging. Parents who did not complete the questionnaires were more likely to have lower socio-economic status, be non-white British and have English as an additional language, meaning some groups were underrepresented.

In conclusion, this study provides new evidence of subsets of parents with varying concerns about school food. This insight may help caterers and marketers of school food to use multiple strategies to target families. Addressing parental anxiety over children's food intake and creating nutritionally-balanced menus that are appealing to children remain key challenges for caterers.

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Table 1. Characteristics of parents, carers and their children.

Descriptive	All (n=676) Number (%)	Does not take UIFSM (n=159) Number (%)	Takes UIFSM (n=517) Number (%)	P
Child characteristics				
Male	327 (48.4)	91 (57.2)	236 (45.6)	0.007[a]
Year group:				
Foundation	215 (31.8)	53 (33.3)	162 (31.3)	0.700[b]
Year 1	253 (37.4)	55 (34.6)	198 (38.3)	
Year 2	208 (30.8)	51 (32.1)	157 (30.4)	
% White British	238 (35.2)	69 (43.4)	169 (32.7)	0.020[a]
EAL	266 (39.3)	51 (32.1)	215 (41.6)	0.019[a]
Food allergy	42 (6.2)	11 (6.9)	31 (6.0)	0.393[a]
KS2 sibling*	243 (35.9)	56 (35.2)	187 (36.2)	0.422[a]
KS2 sibling has a school meal**	116 (17.2)	12 (7.5)	104 (20.1)	>0.001[b]
Responder (parent or carer) characteristics				
Respondent working	333 (49.3)	90 (56.6)	243 (47.0)	0.020[a]
Partner working	364 (53.8)	99 (62.2)	265 (51.3)	0.009[a]
SES Class				
I	117 (17.3)	40 (25.2)	77 (14.9)	<0.001[b]
II	107 (15.8)	34 (21.4)	73 (14.1)	
III	270 (39.9)	58 (36.5)	212 (41.0)	
IV	182 (26.9)	27 (17.0)	155 (30.0)	
Any child registered for FSM***	92 (13.6)	12 (7.5)	80 (15.5)	0.002[a]
Questionnaire completed by:	543 (80.3)	183 (83.6)	410 (79.3)	0.648[b]
Mother	112 (16.6)	23 (14.5)	89 (17.2)	
Father	9 (1.3)	2 (1.3)	7 (1.4)	
Both parents	2 (0.3)	0 (0.0)	2 (0.4)	
Other relative	10 (1.5)	1 (0.6)	9 (1.7)	
Carer				

UIFSM, universal infant free school meal

EAL, English as an additional language

KS2 , Key stage 2 (aged 7-11 years)

SES, Socio-economic status (I Managerial and professional occupations, II Intermediate occupations, III Routine & manual occupations, IV never worked or long term unemployed).

FSM, free school meal (means-tested free school meal)

* Data missing for 9 participants

** Data missing for 12 participants

*** Data missing for 91 participants.

[a] Fisher's exact test

[b] Chi-squared test

Table 2. Two-step cluster analysis to examine patterns of parent/carer responses. Non-UIFSM group.

Overall Importance*	Rank** (% participants ticking 'yes')	Question	Cluster 1 n=31 (19.5%) Yes/No (within cluster importance)*** % responses	Cluster 2 n=60 (37.7%) Yes/No (within cluster importance)*** Responses	Cluster 3 n=68 (42.8%) Yes/No (within cluster importance)*** Responses	
1.00	12 (14.5)	I don't like the current menu	Yes (1) 74.2	No (3) 100	No (4) 100	Significant
1.00	2 (53.5)	I like to know how much food my child eats	Yes 87.1	Yes (1) 85.3	No (1) 100	Significant
0.56	3 (50.3)	I like to know what food my child eats	Yes 74.2	Yes (2) 75.0	No (2) 90	Significant
0.54	9 (15.7)	I think school meals are of poor quality	Yes (2) 61.3	No 94.1	No (5) 96.7	Significant
0.41	14 (12.6)	The variety of the food on offer is poor	No (3) 51.6	No (5) 97.1	No 95.0	Non-significant
0.33	7 (19.5)	I can provide a healthier meal for my child as a packed lunch	Yes (4) 54.8	No 80.9	No (3) 98.3	Non-significant
0.28	15 (12.6)	There is no choice each day (restricted menu)	No (5) 58.1	No 92.6	No 96.7	Non-significant
0.23	11 (15.1)	My child has had a negative experience with school meals	No 58.1	No (4) 97.1	No 85.0	Non-significant
0.15	21 (5.0)	I think school meals are unhealthy	No 80.6	No 97.1	No 100.0	Non-significant
0.15	25 (3.8)	The dining room environment is unpleasant	No 83.9	No 100.0	No 98.3	Non-significant
0.10	16 (10.1)	My child follows a religious diet – there are no suitable options	No 74.2	No 91.2	No 96.7	Non-significant
0.10	18 (8.2)	My child has to queue for a long time	No 77.4	No 94.1	No 96.7	Non-significant
0.09	19 (6.9)	Dining room staff are not friendly/encouraging	No 80.6	No 97.1	No 95.0	Non-significant
0.08	5 (28.3)	My child wants to eat with friends who have a packed lunch	No 67.7	No 61.8	No 85.0	Non-significant
0.08	26 (2.5)	The media has influenced my decision	No 90.3	No 98.5	No 100.0	Non-significant
0.07	17 (8.8)	The school doesn't allow us to switch between school lunch and packed lunch	No 80.6	No 89.7	No 98.3	Non-significant
0.06	13 (14.5)	My child does not have time to eat their school lunch	No 77.4	No 80.9	No 95.0	Non-significant
0.06	1 (54.7)	My child does not like the food provided	Yes 74.2	No 54.4	Yes 55.0	Non-significant
0.06	6 (22.0)	The food provided is unfamiliar to my child	No 67.7	No 73.5	No 88.3	Non-significant
0.04	27 (1.9)	It implies I cannot afford a meal for my child	No 93.5	No 100.0	No 98.3	Non-significant
0.04	30 (0.6)	My child eats too much at school	No 96.8	No 100.0	No 100.0	Non-significant
0.03	23 (4.4)	I did not know about UIFSM	No 96.8	No 98.5	No 91.7	Non-significant
0.02	21 (1.3)	The ordering process is too complicated	No 100.0	No 97.1	No 100.0	Non-significant
0.02	10 (15.7)	My child is not confident in choosing a meal	No 93.5	No 82.4	No 81.7	Non-significant
0.02	4 (40.9)	My child is a fussy eater and will not try the food	No 71.0	No 55.9	No 56.7	Non-significant
0.02	24 (4.4)	My own experience with school meals has influenced my decision	No 93.5	No 94.1	No 98.3	Non-significant

0.01	20 (5.7)	My child has a special diet – there are no suitable options	No 90.3	No 94.1	No 96.7
0.01	30 (0.6)	Other parents have influenced my decision	No 100.0	No 98.5	No 100.0
0.01	22 (5.0)	Eating a packed lunch carries more kudos for my child	No 96.8	No 92.6	No 96.7
0.00	8 (18.9)	My child eats too little at school	No 77.4	No 80.9	No 83.3
0.00	31 (0.0)	Other families at the school are not taking UIFSM	No 100.0	No 100.0	No 100.0

UIFSM, universal infant free school meal

*Overall importance, rated 1.00-0.00, 1.00 being the highest, 0.00 lowest.

** Rank (order of frequency cited as a reason not to take school meals) 1-31

*** Within cluster importance. The top 5 most important reasons within each cluster are indicated.

Table 3. Two-step cluster analysis to examine patterns of parent/carer responses. UIFSM group.

Overall Importance*	Rank** (% participants ticking 'yes')	Questions included	Cluster 1 n=279 (54.0%) Yes/No (within cluster importance)*** Responses	Cluster 2 n=238 (46%) Yes/No (within cluster importance)*** Responses	
1.00	14 (54.0)	There is enough choice each day	Yes (1) 84.9	No (1) 82.4	
0.94	16 (50.5)	The dining room environment is pleasant	Yes (2) 80.6	No (2) 84.9	
0.90	9 (60.9)	The variety of food on offer is good	Yes (3) 89.6	No (3) 72.7	
0.86	13 (54.9)	Dining room staff are friendly/encouraging	Yes (4) 83.5	No (4) 78.6	
0.83	15 (51.6)	The food provided is familiar to my child	Yes (5) 79.9	No (5) 81.5	
0.83	5 (67.9)	I am confident my child will eat the meals	Yes 94.3	No 63.0	
0.81	11 (55.7)	I like the current menu	Yes 83.5	No 76.9	
0.68	10 (60.7)	I am confident my child eats enough	Yes 85.7	No 68.5	
0.67	6 (65.6)	My child likes the food provided	Yes 89.6	No 62.6	
0.66	1 (71.6)	I think school meals are of good quality	Yes 94.3	No 55.0	
0.66	2 (71.6)	I think school meals are a healthy option	Yes 94.3	No 55.0	
0.59	7 (62.7)	School meals help my child be confident in choosing a meal	Yes 85.7	No 64.3	Significant
0.51	12 (55.1)	My child is encouraged to eat all the food on their plate	Yes 77.1	No 70.6	
0.47	8 (61.1)	My child wants to eat with friends that have a school meal	Yes 81.7	No 63.0	
0.47	4 (68.9)	My child enjoy eating the same food as other children	Yes 87.1	No 52.5	
0.37	3 (71.0)	My child is encouraged to eat new foods	Yes 87.8	Yes 51.3	Non-significant
0.34	26 (21.3)	Eating a school meal carries more kudos for my child	Yes 87.8	No 95.8	
0.30	17 (48.5)	I think school meals are healthier than a packed lunch	Yes 65.2	No 71.0	
0.27	21 (33.5)	The school has been positive about school meals	No 51.6	No 84.0	
0.26	18 (47.6)	I don't have to make a packed lunch – this saves time	Yes 63.1	No 70.6	
0.21	25 (25.0)	Other parents have been positive about UIFSM	No 63.1	No 89.1	
0.17	24 (29.0)	The media has positively promoted UIFSM	No 59.9	No 84.0	
0.16	19 (43.9)	I don't have to make a packed lunch – this saves money	Yes 55.9	No 70.2	
0.16	27 (17.8)	Other families at my child's school take UIFSM	No 73.1	No 92.9	
0.16	22 (30.4)	The school allows us to switch between PL and SL	No 58.8	No 82.4	
0.10	20 (39.8)	I enjoyed school meals as a child, this has influenced my decision	No 51.3	No 70.6	

0.05	23 (29.6)	My child follows a religious diet – suitable options are available	No 64.5	No 77.3
0.05	28 (13.3)	My child follows a special diet – suitable options are available	No 82.4	No 91.6

UIFSM, universal infant free school meal

PL, packed lunch

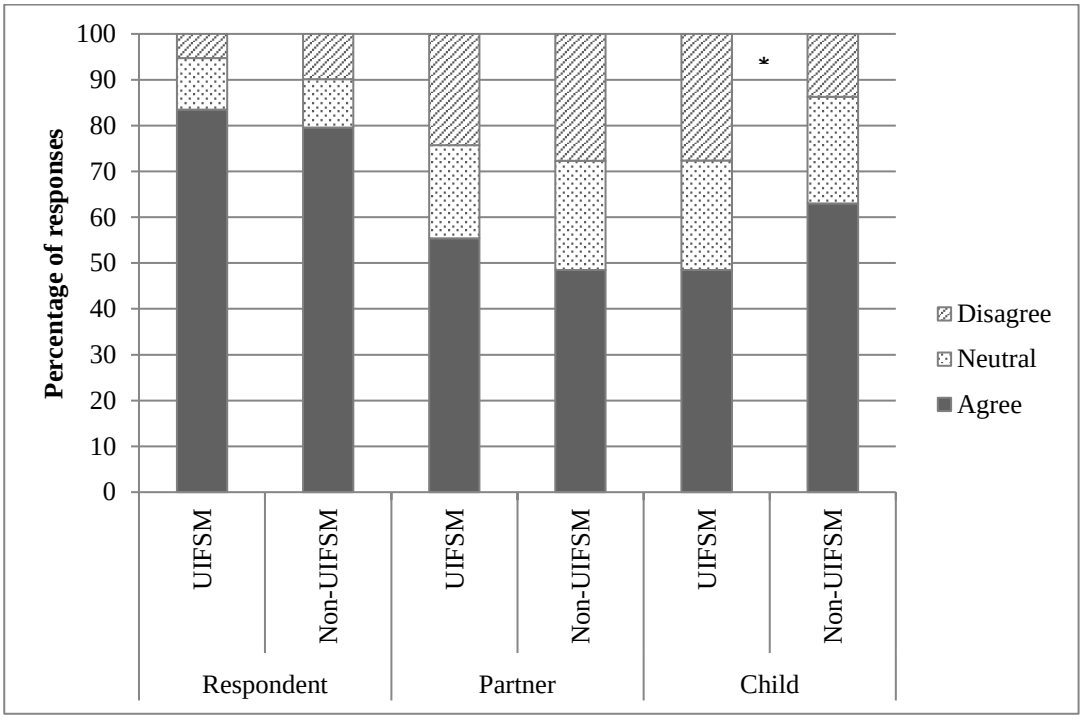
SL, school lunch

*Overall importance, rated 1.00-0.00, 1.00 being the highest, 0.00 lowest

** Rank (order of frequency cited as a reason to take school meals) 1-28

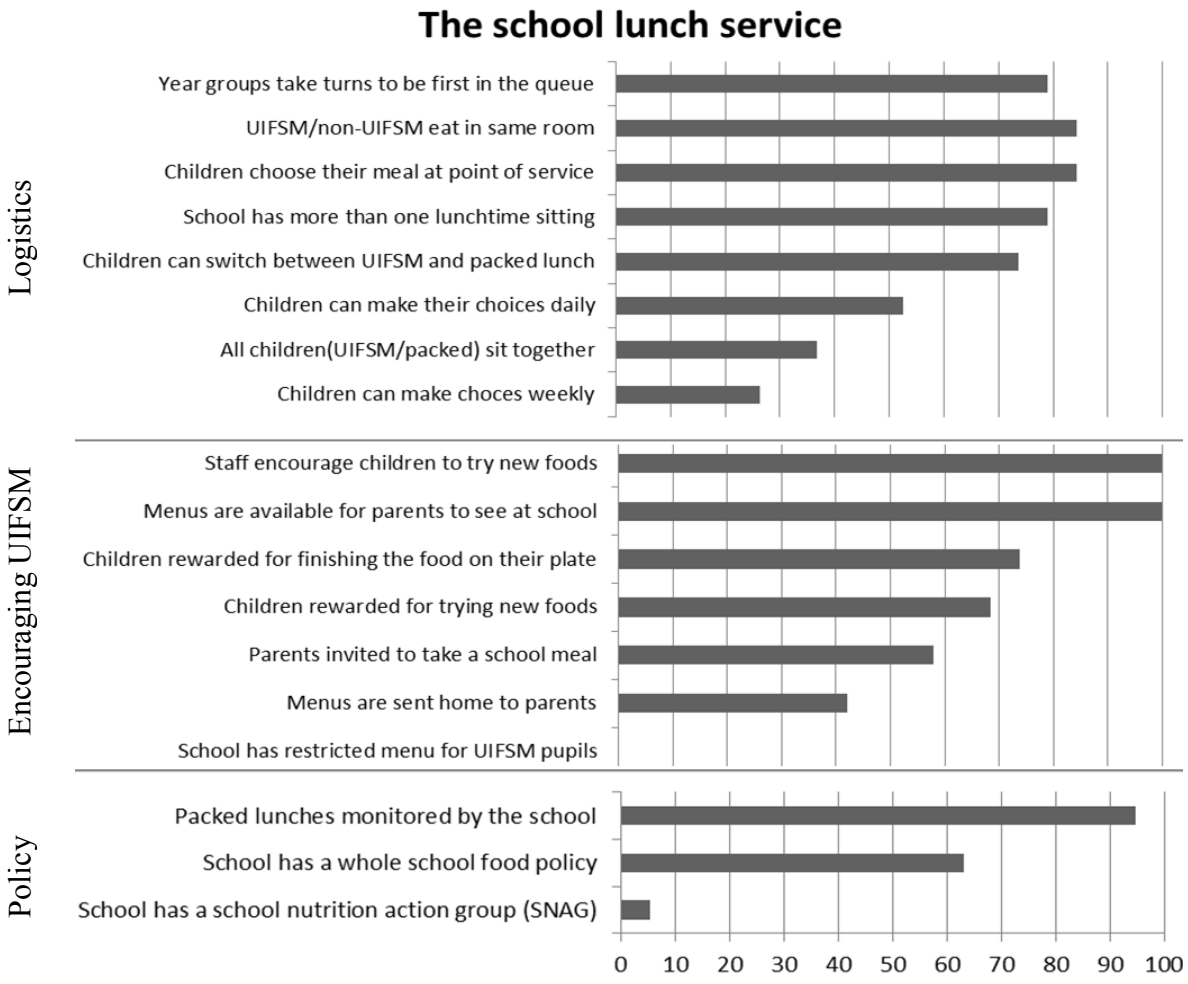
*** Within cluster importance. The top 5 most important reasons within each cluster are indicated

Figure 1. Responders who agree or disagree that that they, their partner (where applicable) or their child should decide on whether or not the child has a UIFSM.



* Between group difference using chi-squared, (2, 726) = 3.109, p=0.001

Figure 2



Percentage (%) of schools which answered yes (n=19 schools)