

Parents' Preference and Perception for Childhood Obesity Prevention Strategies in China : A Survey-Based Experiment

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Introduction:

Childhood obesity constitutes a grave public health issue, experiencing a disconcerting surge in China. According to the National Health Commission of the PRC, the prevalence of overweight and obesity among children aged 6-17 has dramatically risen, soaring from 6.6% to nearly 20% within the past two decades.

Despite its urgency, the existing research on parental preferences for tackling this issue remains insufficient. This study aims to comprehensively evaluate and quantify parents' preferences concerning strategies to prevent obesity in China.

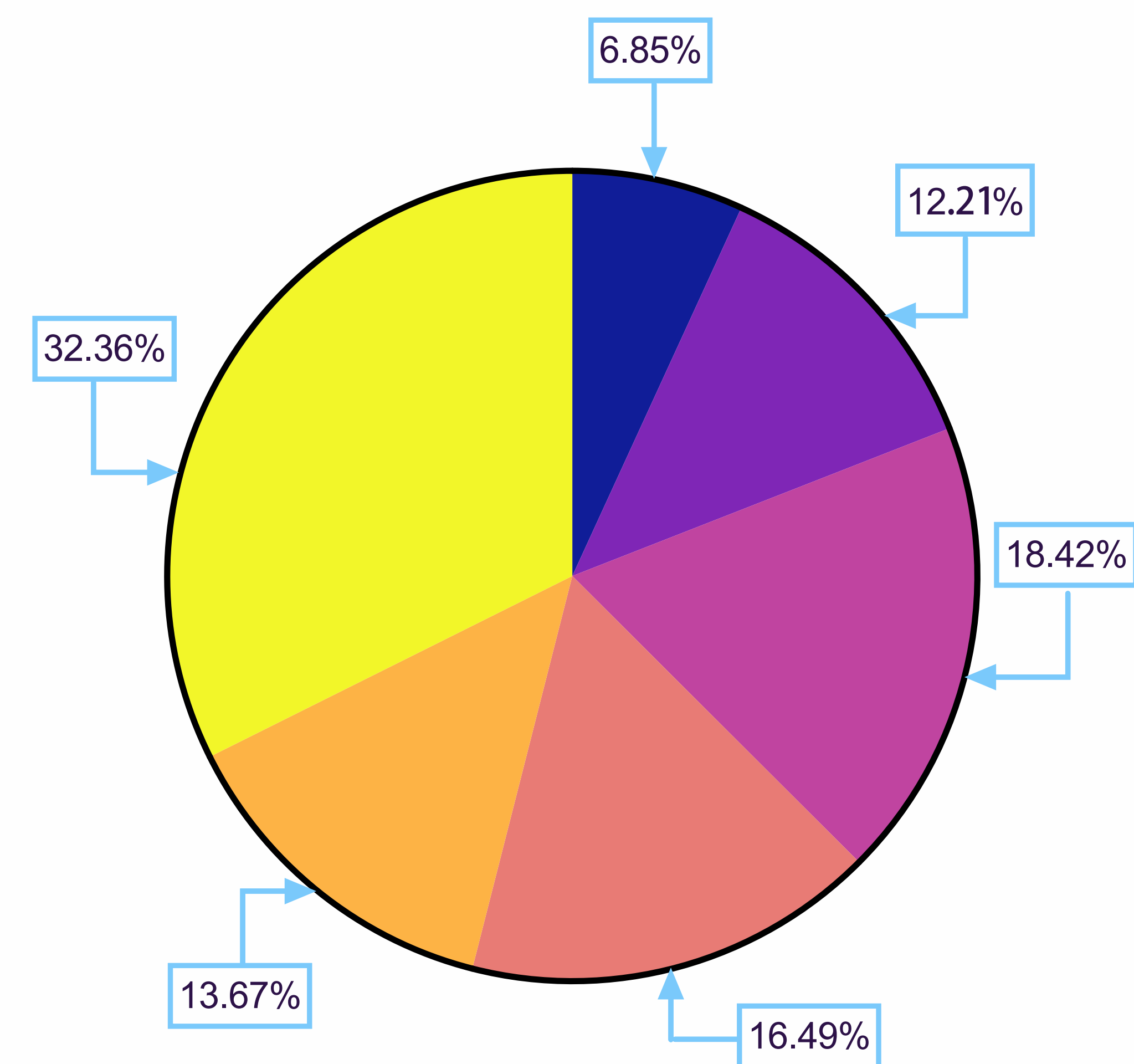
Methods:

A discrete choice experiment (DCE) was administered to assess parents' preferences for various weight control plans and to explore the determinants influencing their choice of approaches. Multinomial logit models (MNL) and latent class models (LCM) were employed for statistical analysis. The Children's Eating Behaviour Questionnaire (CEBQ), a parent-report instrument, was also utilized to evaluate variations in eating styles among children systematically.

Results:

A total of 631 eligible respondents who completed the survey were analyzed in this study. The findings revealed that, among the various weight control plans, parents prioritized extra expenses (weighted importance: 32.36%), followed by daily sleeping duration and dietary mode. Parents favoured a sleeping time of 9 hours (OR: 1.291, 95%CI: 1.186-1.406, $p < 0.05$, reference level: 7 hours) and preferred a high-protein diet over a low-fat diet (OR: 1.114, 95%CI: 1.034-1.200, $p < 0.05$, reference level: low-fat diet). Furthermore, parents expressed a preference for their children to exercise at school rather than at fitness centres (OR: 0.837, 95%CI: 0.785-0.893, $p < 0.001$, reference level: school). LCM identified and segmented two groups of parents. Both groups prefer an early-eating diet and a high-protein diet mode. However, group 1 preferred school to be an exercise place with eight hours of sleep daily, and preferred to pay no expenses, while group 2 valued nine hours of sleep and was willing to pay RMB 200 for the weight control plan.

Overall Parents' Preferences



- Average Daily Exercise Time
- Major Exercise Location
- Average Sleep Duration
- Major Diet Mode
- Early-/Late-eating mode
- Willingness to Spend Extra Expense on Program

Figure 1a. Weighted Importance of Attributes for Overall and Latent Class

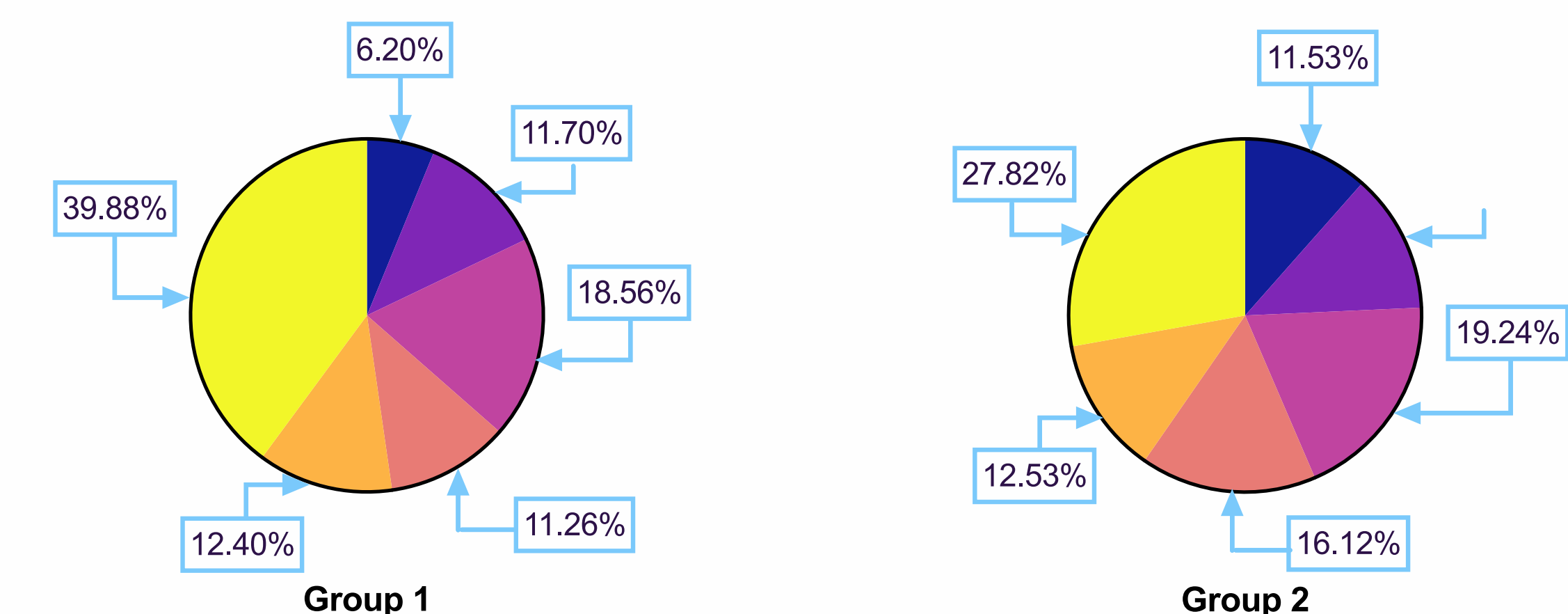


Figure 2b. Preferences Differences in Father and Mother Respondents

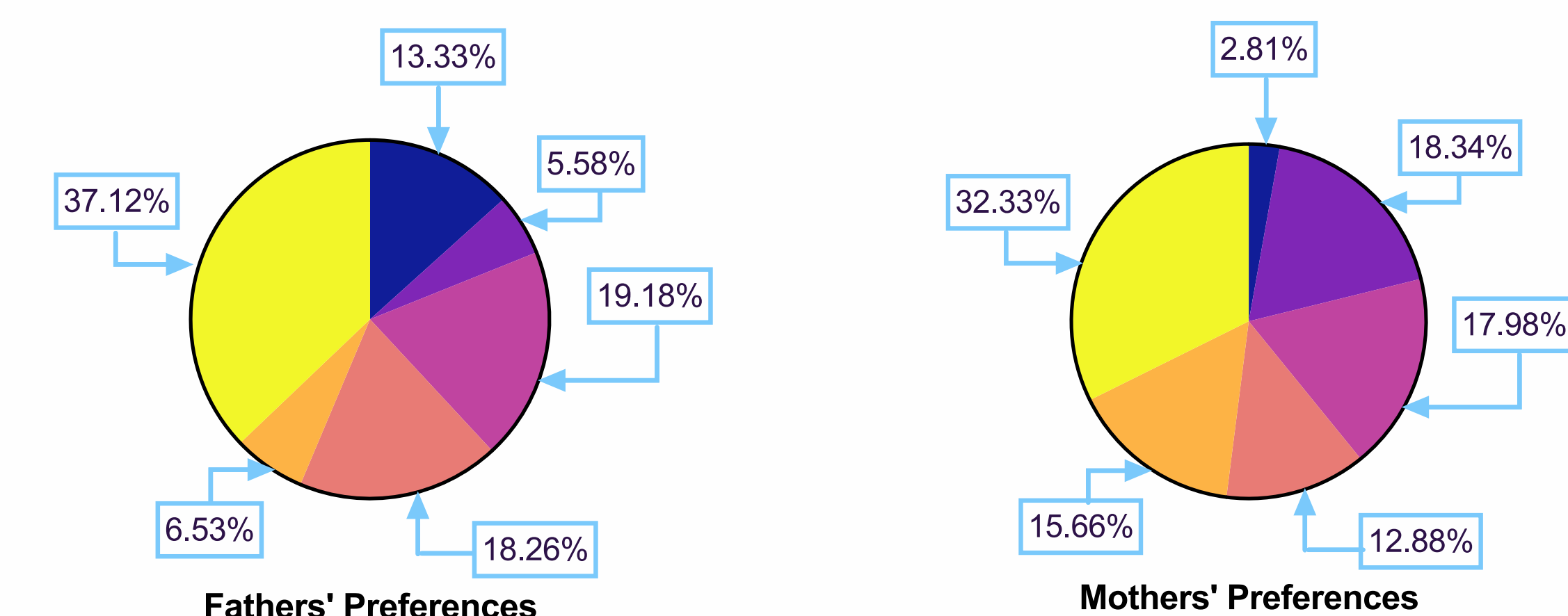
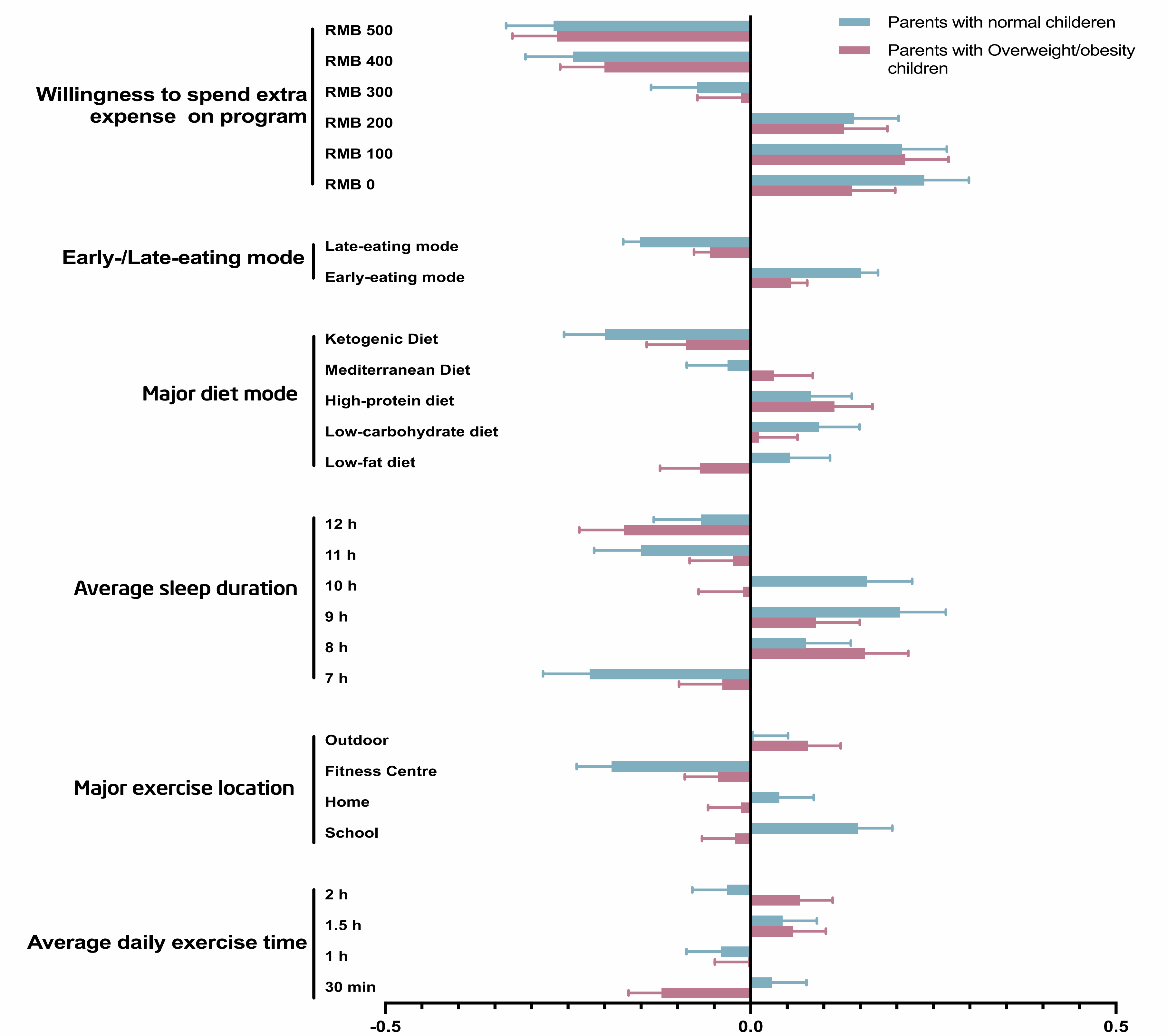
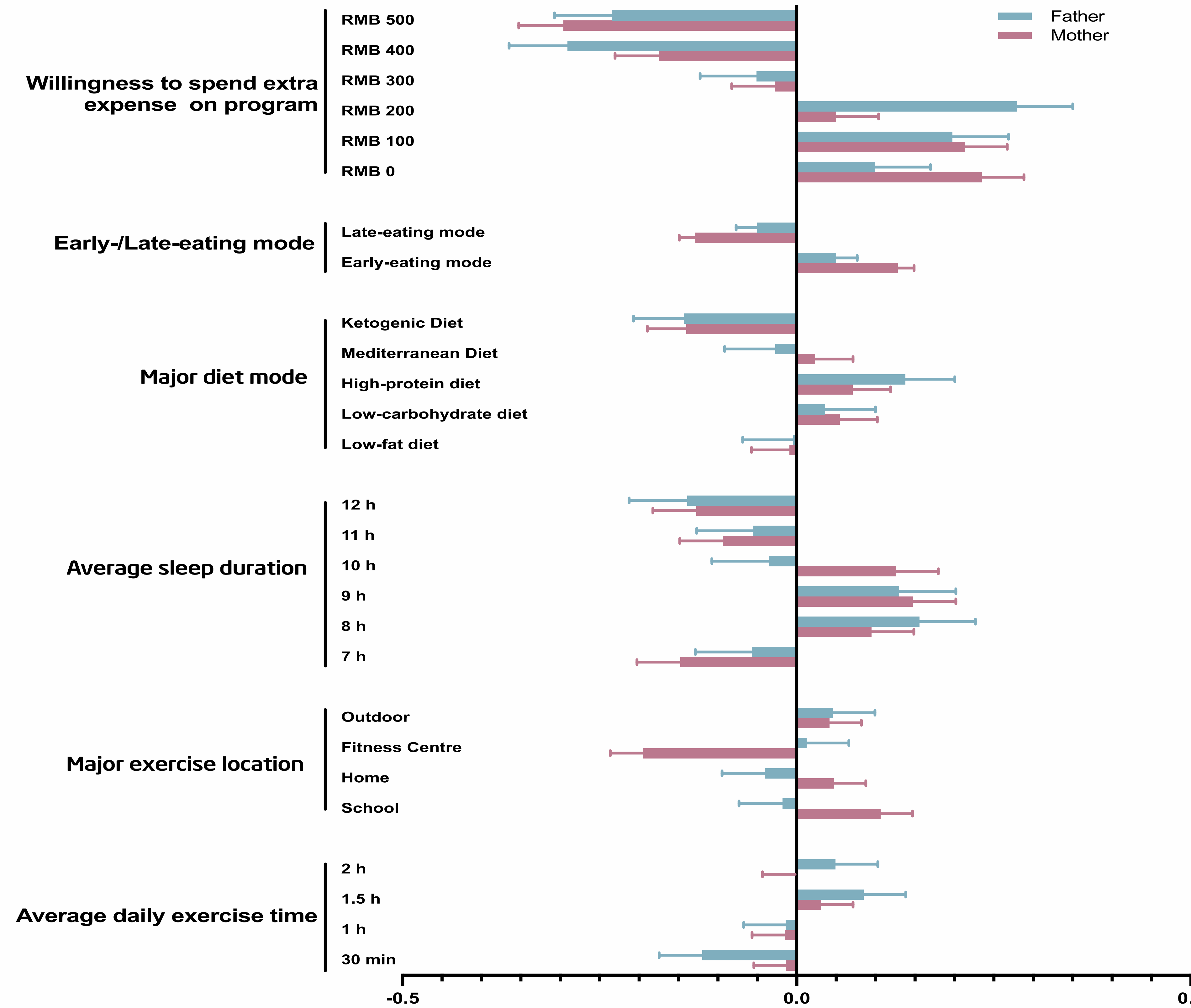
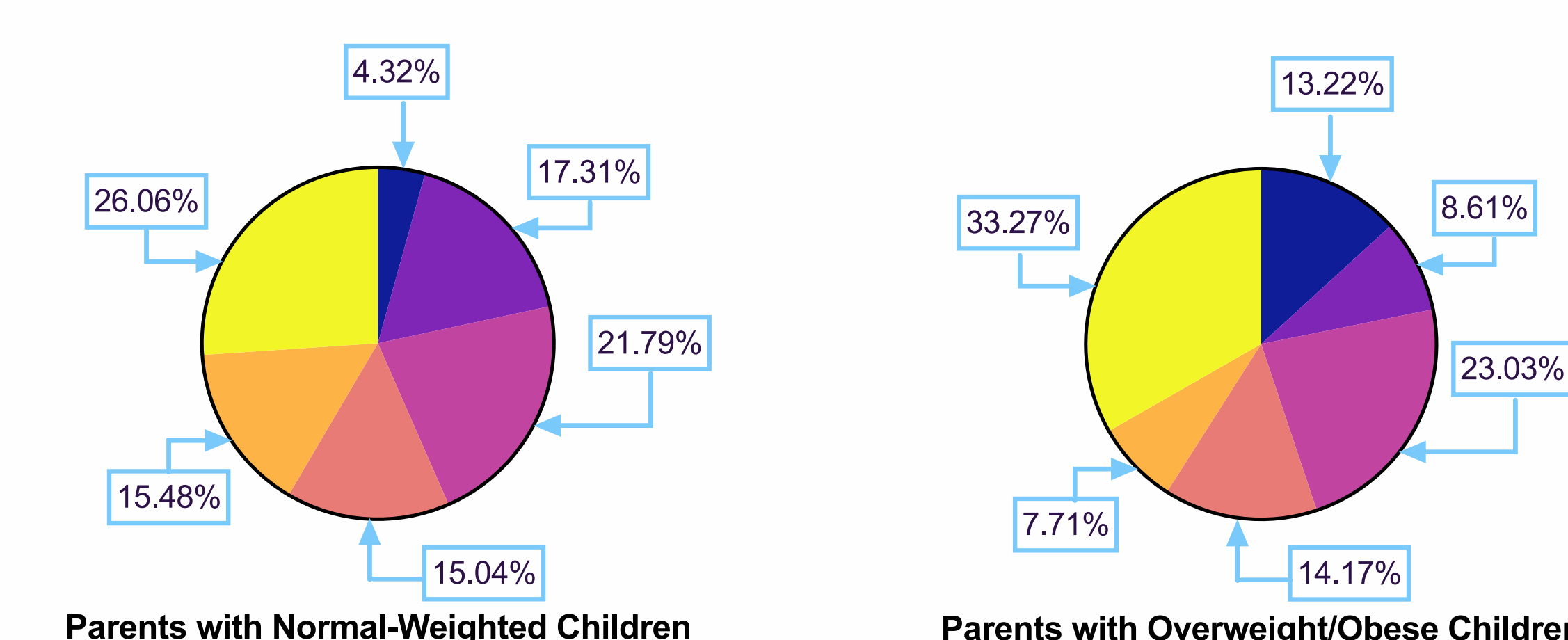


Figure 3c. Preferences Differences in Parents' Respondents with Normal or Overweight/Obesity Children



Conclusion:

1. Develop targeted education campaigns that emphasise the benefits of balanced and diverse diets, meeting children's nutritional needs while addressing concerns about the potential risks associated with certain weight loss diets.
2. Collaborate with schools to prioritise offering adequate sports and fitness facilities, providing a secure environment for children's exercise activities, and adjusting school schedules to promote healthier sleep patterns.
3. Implement cost-effective and practical obesity prevention strategies that consider the financial constraints of families while maximising health outcomes for children.
4. Encourage active parental involvement in children's eating behaviours, emphasising the importance of combining appropriate exercise time with customised nutrition intake to promote a more comprehensive approach to addressing childhood obesity.
5. Acknowledge and address the heterogeneity in parental focus on exercise time and location, considering mothers' and fathers' distinct preferences and concerns when devising policies and interventions.

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Standardised Factor of Child Eating Behaviour Questionnaire (CEBQ) and t-test results for normal group and overweight group

	Normal (n=307)	Overweight (n=324)	t-test result		
	Mean (SD)	Mean (SD)	Mean-diff	t	P value
Enjoyment of food	-0.05 (0.64)	0.05 (0.64)	-0.10*	-2.00	0.02
Desire to drink	0.00 (1.04)	-0.00 (0.97)	0.01	0.09	0.46
Satiety responsiveness	0.05 (0.52)	-0.05 (0.52)	0.10*	2.40	0.01
Food fussiness	-0.03 (0.53)	0.03 (0.53)	-0.06	-1.33	0.09
Food responsiveness	-0.08 (1.03)	0.07 (0.97)	-0.15*	-1.87	0.03
Slowness in eating	0.07 (1.01)	-0.07 (0.99)	0.14*	1.70	0.04
Emotional over-eating	-0.04 (1.01)	0.04 (0.99)	-0.08	-0.96	0.17
Emotional under-eating	0.01 (0.95)	-0.01 (1.05)	0.01	0.15	0.44

Note: *** $p < .001$, ** $p < .01$, * $p < .0.05$

Moreover, the PCA results revealed that overweight and obese children experienced significantly higher levels of enjoyment and responsiveness to food than their normal-weight peers.