

## Additional file 1 –Components of Intervention

	Center-based Intervention			Home-based Intervention	Community-based Intervention
	Physical activity Program	Staff Development	Food Service		
Objectives	<ul style="list-style-type: none"> <li>• Providing 60-90 min of structured and free play</li> <li>• Increasing intensity level</li> <li>• Developing physical fitness</li> </ul>	<ul style="list-style-type: none"> <li>• Improving staff knowledge and skills in physical activity</li> <li>• Enhance staff confidence in leading the outdoor sessions</li> <li>• Improving staff wellness</li> </ul>	<ul style="list-style-type: none"> <li>• To promote healthy eating</li> <li>• Increase the quality of food services</li> </ul>	<ul style="list-style-type: none"> <li>• Formulating healthy family environment for healthy eating and physical activity</li> <li>• Increasing health literacy on obesity, nutrition and physical activity</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing the awareness of childhood obesity and environmental support</li> </ul>
Intervention activities	<ul style="list-style-type: none"> <li>• Provision of gross motor activity equipment</li> <li>• Designed physical education curriculum for outdoor play</li> <li>• Daily 10-minute recess</li> <li>• Monitored outdoor physical activity curriculum</li> <li>• Designed and provided portable play equipment</li> <li>• Placed drawings of playing outdoor games</li> <li>• Children making their play toys</li> </ul>	<ul style="list-style-type: none"> <li>• 20-hour training sessions included child growth and development, design of physical activity and gross motor programs, pedagogical methods and instructional strategies</li> <li>• In-vivo observation and hand-on practices</li> <li>• Staff health screenings</li> <li>• Staff nutrition education</li> </ul>	<ul style="list-style-type: none"> <li>• Two training sessions included nutrition, food service management for groups, menu design following nutrition standards and regulations</li> <li>• Demonstration and hands-on practice of food preparation and cooking techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Monthly health education seminars</li> <li>• 12 newsletters for family members</li> <li>• 2 Children's Fitness and Health Handbook</li> <li>• 3 family events organized</li> <li>• Making of a simple play equipment (bi-monthly) with children</li> <li>• Interactive discussion on specialized internet website</li> </ul>	<ul style="list-style-type: none"> <li>• Training of the staff designation in the neighborhood</li> <li>• Building a 600-square meter playground</li> <li>• Ten large fixed play stations</li> <li>• Provided health education</li> <li>• Neighborhood events</li> <li>• Hosting sports day for families</li> <li>• 2 one-day health fairs</li> <li>• 1 family sport-day</li> </ul>
Development of intervention activities	<ul style="list-style-type: none"> <li>• Research team and invited experts</li> <li>• Based on the Guidelines for 3-6 Years Old Children's Learning and Development in China and the Curricular Guidelines for Preschool Education</li> </ul>	<ul style="list-style-type: none"> <li>• Research team and invited experts</li> <li>• Based on the Nursery Teacher Professional Development Standards</li> </ul>	<ul style="list-style-type: none"> <li>• Nutrition experts</li> <li>• Based on the Chinese Children's Nutrition and Feeding Guidelines and Children's Meals Management Routines in Childcare Centers</li> </ul>	<ul style="list-style-type: none"> <li>• Research team and invited experts</li> <li>• Based on the Guidelines for Family Engagement in Early Childhood Education</li> </ul>	<ul style="list-style-type: none"> <li>• Research team and community health center</li> <li>• Based on People's Republic of China Sports Law and the Recommendations on Strengthening the Work of Urban Community Sports</li> </ul>
Delivery of intervention	<ul style="list-style-type: none"> <li>• Childcare center staff</li> <li>• Research assistants</li> <li>• Nurse practitioner</li> <li>• Children and his/her parents</li> </ul>	<ul style="list-style-type: none"> <li>• Expert panel</li> <li>• Childcare center staff</li> <li>• Research staff</li> </ul>	<ul style="list-style-type: none"> <li>• Pediatric dietitians</li> <li>• Peer services workers</li> </ul>	<ul style="list-style-type: none"> <li>• Expert panel</li> <li>• Research staff</li> <li>• Childcare center staff</li> </ul>	<ul style="list-style-type: none"> <li>• Community Health Center</li> <li>• Research staff</li> <li>• Childcare center staff</li> </ul>
Training provided	<ul style="list-style-type: none"> <li>• Use of activity cards</li> <li>• Leading outdoor play activities</li> <li>• Gross motor development</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops on training and hand-on practices</li> <li>• Counseling on physical</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops on training</li> <li>• Presentation skills</li> <li>• Counseling on nutrition</li> </ul>	<ul style="list-style-type: none"> <li>• Delivery of session materials</li> <li>• Presentation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops on training</li> <li>• Installation equipment</li> <li>• Organized family events</li> </ul>

		activity and healthy eating	regulations and standards	<ul style="list-style-type: none"> <li>• Developed interactive internet website</li> </ul>	
Evaluation	<ul style="list-style-type: none"> <li>• Energy expenditure and minutes of MVPA</li> <li>• Daily activity expenditure</li> <li>• Activity intensity by heart rate</li> <li>• Children attendance (illness-related absence)</li> </ul>	<ul style="list-style-type: none"> <li>• Attendance in training sessions</li> <li>• Evaluation survey on the satisfaction and impacts of the teacher training</li> <li>• Physical fitness assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Average of total energy intake</li> <li>• Intakes of carbohydrate, protein, and vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Parent engagement in intervention activities</li> <li>• 60-item Liker-scale health knowledge test</li> <li>• Reported exercise</li> <li>• Fitness assessment</li> </ul>	<ul style="list-style-type: none"> <li>• The number of play equipment renovated</li> <li>• Footage of playground area renovated</li> <li>• Number of events hosted in the intervention community</li> </ul>