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The Implementation of the Nutrition Improvement Program (NIP) and Its Contribution to Students' Physical Health and Wellness

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Abstract:
This study aims to explore the perspectives of students in terms of the acceptance of aspects in the NIP implementation construct. Besides, this study also attempts to identify the extent of the contribution of the aspects in the variable in NIP Implementation towards students' physical health and wellness in the NIP program. This research employs a quantitative technique and a survey research design. In this paper, 800 Grade 5 primary school students, were selected as the sample by using stratified random sampling. This study using questionnaire as the main instrument to collect the data. Cronbach Alpha analysis on the relevant dimensions or constructs can be used to do this. Cronbach alpha analysis shows that the item correlation value with the overall aspect which is 0.914. The data of the study were analyzed using Statistical Package for the Social Sciences (SPSS) Version 23 software. The findings showed the level of implementation of the Nutrition Improvement Program (NIP) in elementary schools in China, based on students' perspective, is at a moderate level. There are four aspects of the Nutrition Improvement Program (NIP) implementation at a moderate level, namely NIP Implementation Techniques, Information Transfer of Healthy Meal, Monitoring, and Evaluation. However, the aspect of Use of Various Materials is at a high level. The results showed that the stepwise multiple regression analysis in Tables 2 and 3 shows that the independent variables, namely evaluation, information transfer of healthy meal, use of various materials, NIP implementation technique, and monitoring, are predictors that have significant correlations and influence, contributing to 56.8 percent of variance in physicals' health and wellness in primary schools in China. This study underscores the importance of engaging techniques, diverse resources, and robust evaluation mechanisms for promoting healthy habits and improving student well-being.

Keywords: *Nutrition improvement program, students' physical health and wellness*

1. Introduction

China has created various new technological innovations in various fields, such as aerospace, communication, agriculture, and robotics, and various inventions have been produced and used by people all over the world. While in the education system, China has now implemented various innovations and new technologies in the curriculum and teaching at the school and at higher education levels. The development has made China potentially the biggest power by some academicians (Behzad et al., 2018). The Chinese government has made education a strategic priority and proposed the strategic decision to "develop the country through science and education," which has continuously deepened the education system reformation and has also implemented nine-year compulsory education. Governments at all levels continue to increase investment in education and encourage multiple channels and forms of schooling. "Facing modernization, facing the world and facing the future" is the direction of China's education development and the guide for education reform and construction. However, since the population is too large and the land area is too wide, there is still a gap in the education system in China, especially among the underprivileged students in rural areas who are still experiencing constraints and problems in education, especially at the primary school level.

China declared the Compulsory Education Law of the People's Republic of China in 1986 and has provided free compulsory education for its citizens since 2006. The school system in China is divided into three main levels, and each student must pass an examination at each level to qualify to enter a higher level. Children in China will start their education as early as the age of 4 at the Pre-School level for three years, then follow the primary school level for five years and the secondary school level for six years. After that the students are free to choose higher education in various fields. This implemented policy has achieved significant educational returns and economic results since its implementation and has been a major factor in China's significant increase in labor productivity and rapid economic growth since its reform and opening up (Carroll et al., 2016). However, there are some challenges and weaknesses in the education system in China. Chen et al. (2011) found that there is still a huge difference in educational achievement between urban and rural areas in China. In addition, students dropping out in the academic field also occurs, especially among rural students, due to

the increase in the cost of schooling, improper living conditions, and transportation problems, including the lack of food resources (Cao et al., 2020). Currently, the nutritional status of students in China faces challenges. The Chinese National Health and Family Planning Commission, in its report, pointed out that a certain percentage of children in China still suffer from malnutrition, and the malnutrition rate of children in poor rural areas has reached 18.4%; and the problem of insufficient intake of children's micronutrients, such as vitamin A, calcium, and others, still exists.

Recently, the Ministry of Education, with the full support of the government, has introduced the Nutritional Improvement Program (NIP) to help rural area students, including primary school students, to get healthy and nutritious meals provided by the school and to ensure the students to be healthy physically health and mentally, intellectually, emotionally and social well-being which can further improve their excellence in education and compete with other students. The Nutrition Improvement Program in China, which was implemented in 2011, uses various implementation approaches, mainly involving several levels for children aged 3 to 14 years. Most of this program is done at the school level. This is aimed at helping the development of children and students' health towards educational excellence (Chen et al., 2019).

Bocheng Zhang (2022) stated that the issue of healthy eating and balanced nutrition among students in rural areas in China is a problem that has been given special attention by the government through the Ministry of Education and several other agencies to help improve the well-being of students through the NIP program. This situation is because China has the largest population in the world and has a relatively high gap in terms of poverty, especially in rural areas. Liu et al. (2015) also found that many students and communities in rural areas are still facing problems in terms of the economy, obesity, and the lack of a balanced diet in their daily food intake. This is due to their lack of economic ability and income, and some rural residents are still at the level of extreme poverty due to remote locations in the interior that suffer from transportation problems and adjustment of food aid and education.

The findings of this study are expected to provide detailed input that can help various parties, especially the Ministry of Education, NGOs and others, to form policies and make long-term plans to ensure that this NIP nutrition program can have a great impact on students and the country to achieve the goal in improving the outstanding performance of underprivileged students. This study aims to explore the perspectives of students in terms of the acceptance of aspects of the NIP implementation construct. Besides, this study also attempts to identify the extent of the contribution of the aspects in the variable in NIP Implementation towards students' physical health and wellness in the NIP program.

2. Literature Review

Zhao et al. (2023) explored the implementation of nutrition improvement programs in two rural districts in western China, which differed in geographical conditions. Studies have found that nutrition improvement programs are more effective, have wider coverage, and are more effective in districts with better transport and infrastructure conditions. On the other hand, the implementation of nutrition improvement programs in districts with complex topography and limited transport infrastructure faces challenges in logistics and supply chain management.

A study by Dean et al. (2015) found that schools in remote areas are less likely to participate in nutrition improvement programs due to difficulties in transportation and distribution. Similarly, a study by Liu and Wang (2018) found that schools that are far from food markets are less likely to implement nutrition improvement programs because they face difficulties in obtaining fresh produce.

According to a study by Liu et al. (2020), schools in remote areas often have difficulty accessing resources and support from local governments, which hinders the implementation of nutrition improvement programs. In addition, schools located far from local markets often lack access to affordable fresh food, which makes implementing effective nutrition improvement programs more difficult.

A survey of 13 provinces, including Guangxi and Guizhou, showed that the primary and secondary foods provided in school canteens for breakfast, lunch, and dinner in low-income areas were 27.9%, 51.4%, and 50.7%, respectively (Guo et al., 2019), and also revealed the problem of malnutrition among rural students in poor areas. Studies have found that almost half of rural students cannot guarantee three meals a day, 1/3 of students do not get meat, 2/3 of students do not get eggs, and 4/5 of students do not get milk in a month (Zhang & Li, 2017).

The study conducted by Dearing et al. (2009) aimed to describe and compare micronutrient deficiency status among infants in urban and rural areas in China, as well as its relationship with dietary diversity and socio-demographic characteristics. This study involved 1200 18-month-old infants from rural areas in Yunnan and urban areas in Shanghai in a cross-sectional study. Information about the type of food eaten was obtained through a 24-hour dietary recall technique. In addition, anthropometric measurements such as weight and height, diet diversity score (DDS), food variety score (FVS), and mean adequacy ratio (MAR) were also calculated and compared between the two groups of infants. The results of the study show that compared to babies in urban areas, DDS, FVS, and NAR (mean adequacy ratio for most micronutrients) for babies in rural areas are much lower. This result is compatible with the fact that rural infants also show lower physical growth scores. Findings showed that DDS, FVS, and NAR were positively related to infant anthropometric measurements. This study is the first to measure differences in dietary diversity and micronutrient status among infants in rural and urban areas in China. The results of this study can be an important guide in the development of infant feeding recommendations and appropriate feeding strategies, especially for infants in rural areas.

Ying Xu et al. (2022) conducted a study on the nutritional status of rural Chinese children that has improved in recent years, but their nutritional knowledge is still relatively lacking. School-based nutrition and health education was conducted for children in three districts in China from 2018 to 2020. Students in intervention schools were given a two-

year nutrition and health education course, while control schools received no intervention. The results of the study found that school-based health education had a positive impact on the nutritional knowledge and nutritional intake of rural Chinese children. Dollahite et al. (2014) also proved that the school's intervention in efforts to convey nutrition knowledge and eating habits to high school students in the short term could lead to improvements in eating habits. However, it is still not enough to change nutrition knowledge and physical activity.

Christopher (2020) a study on the nutritional nutrition program was conducted on a group of students to identify the appropriate method of implementing the nutrition program, and the study found that the method of using resources in the form of a nutrition diary is an effective method to educate and to actively engage students. He also suggested that in ensuring that the program is related to nutrition, the participants involved in this program need to have a daily diary because by using a diary like this, they can comply with the rules that have been determined by the head of the program that implements the program and further ensure that the goals of the program can be achieved.

Duan et al. (2013) asserted that the Government's high-intensity intervention in the monitoring of nutrition programs implemented in schools in India has had a positive impact on children's health. The results of this study show that the supervision and monitoring of the school nutrition program are important factors in determining its effectiveness, and it further highlights the importance of effective monitoring and supervision in a school nutrition program. The findings of this study are supported by Rowena et al. (2022), who stated that implementing a nutrition intervention program requires monitoring to assess the achievement of program targets and goals.

UNICEF's (2018) study of the NIP program implemented in various poor countries, including in Africa and Bangladesh, found that in the process of implementing the NIP program, teachers need to continuously monitor in the form of a schedule. teachers need to monitor continuously in the form of a schedule. This is important to prevent children who are involved with the NIP program from being unable to discipline themselves due to being influenced by their daily routine at home. Apart from that, the form of monitoring that needs to be done involves not only the schedule but also peer evaluation because peers are people who are close to them and can provide information and reminders to fully follow the program properly.

3. Methodology

This research employs a quantitative technique and a survey research design. Since this study had a high sample size and used a questionnaire instrument, a survey research method was chosen. This method is more practicable when a big sample is used and data are gathered more precisely and nearly simultaneously (Chua, 2006). Survey research design, according to Cresswell and Plano (2011), is a quantitative research approach that requires the researcher to perform a survey on a sample to explain the criteria of the community represented. The descriptive statistics were used in this investigation. In China, the implementation of the Nutrition Improvement Programme has undergone a long pilot phase, with both national and local pilot counties in the pilot phase. In this paper, 800 primary school students were selected as the sample using stratified random sampling.

This study used a questionnaire as the main instrument to collect the data. The extent to which an instrument measures what it is designed to measure is referred to as its instrument validity (Jamil, 2002). The validity of a questionnaire instrument, according to Jamil (2002), can be determined by the relationship or correlation between the total score and the score of each item. Cronbach Alpha analysis on the relevant dimensions or constructs can be used to do this. Cronbach alpha analysis shows that the item correlation value with the overall aspect is 0.914.

The data of the study were analyzed using Statistical Package for the Social Sciences (SPSS) Version 23 software. The descriptive analysis involved determining the frequency and percentage values of the demographic profile of the study sample. The descriptive analysis involved finding the mean and standard deviation values to assess the level of implementation of the Nutrition Improvement Program (NIP) from the aspect of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation. Inferential analysis involving multiple regression analysis was used to determine if any aspects of the construct of implementation of NIP contributed to the students' physical health and wellness constructs.

4. Findings

The level of implementation of the Nutrition Improvement Program (NIP) is examined across five aspects: NIP implementation techniques, information transfer of healthy meals, use of various materials, monitoring, and evaluation. These aspects are presented in table 1.

Nutrition Improvement Program Implementation	Mean	Std. Dev.	Interpretation
NIP Implementation Techniques	3.382	0.942	Moderate
Information Transfer of Healthy Meals	3.348	0.978	Moderate
Use of Various Materials	3.417	0.950	High
Monitoring	3.310	0.942	Moderate
Evaluation	3.325	0.952	Moderate
Overall Nutrition Improvement Program Implementation	3.355	0.690	Moderate

Table 1: Levels of the Implementation of Nutrition Improvement Program (NIP) Based on Students' Perspective

Table 1 shows that overall, the level of implementation of the Nutrition Improvement Program (NIP) in elementary schools in China, based on students' perspective, is at a moderate level (mean = 3.355; s.d. = 0.690). A detailed analysis of each aspect of the implementation of the Nutrition Improvement Program (NIP) in elementary schools in China, based on students' perspectives, indicates that there are four aspects of the Nutrition Improvement Program (NIP) implementation at a moderate level, namely NIP Implementation Techniques (mean = 3.382; s.d. = 0.942), Information Transfer of Healthy Meals (mean = 3.348; s.d. = 0.978), Monitoring (mean = 3.310; s.d. = 0.942), and Evaluation (mean = 3.325; s.d. = 0.952). However, the aspect of the Use of Various Materials (mean = 3.356; s.d. = 0.916) is at a high level.

Multiple regression analysis is used to determine the significance of the relationship and the variance contribution of the independent variables, which include the implementation of NIP covering NIP implementation techniques, information transfer of healthy meals, use of various materials, monitoring, and evaluation, on physical health and wellness in primary schools in China.

Before conducting multiple regression analysis, the researcher first ensures and confirms whether the distribution of questionnaire scores is normal and linear or otherwise. This is done by obtaining scatter plots and regression normal plot graphs, which can be obtained from the 'Linear Regression: Plots' subprogram available in the SPSS program. The results of the analysis are shown in figures 1 and 2.

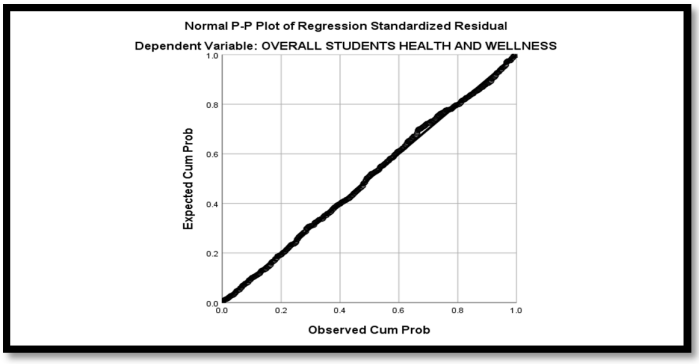

Figure 1: Regression Normal Plot

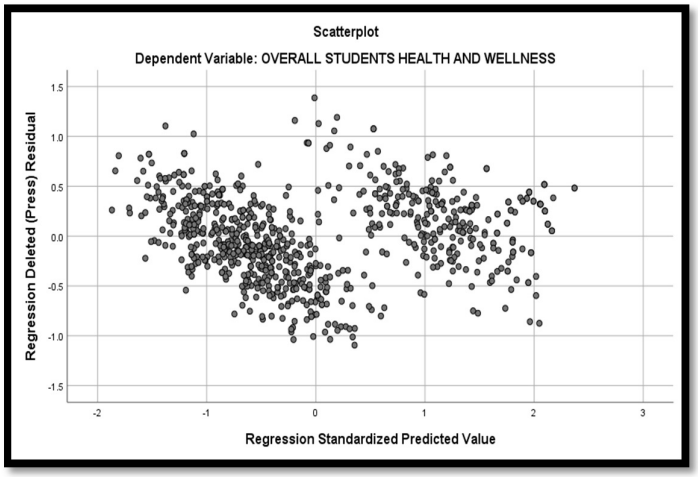

Figure 2: Residual Scatter Plot

Based on the distribution plots (Figures 1 and 2), it was found that the distribution of questionnaire scores in this study is normal and linear. Additionally, the researcher also examined the correlation between the independent variables to determine whether multicollinearity exists. It was found that there is no multicollinearity, as the Tolerance values are high (Pallant, 2002). Tables 2 and 3 show the results of stepwise multiple regression analysis involving five independent variables: the implementation of NIP covering NIP implementation techniques, information transfer of healthy meals, use of various materials, monitoring, and evaluation of physical health and wellness.

	Unstandardized Coefficients		Standardized Coefficients	t	Sig	R2	Contribution
Variables	**B**	**Std. Error**	**Beta**				
(Constant)	1.096	0.074		14.809	0.000		
Evaluation	0.189	0.019	0.285	10.034	0.000	.358	35.8%
Information Transfer of Healthy Meals	0.164	0.018	0.254	9.011	0.000	.485	12.8%
Use of Various Materials	0.111	0.018	0.167	6.033	0.000	.525	03.9%
NIP Implementation Technique	0.111	0.018	0.166	6.132	0.000	.548	02.4%
Monitoring	0.110	0.018	0.164	5.981	0.000	.568	01.9%

Table 2: Contribution of the Aspects of NIP Implementation towards Physical Health and Wellness

	Sum of Squares	df	Mean Square	F-Value	Sig.
Regression	181.366	5	36.273	208.617	**.000***
Residual	138.056	794	.174		
Total	319.422	799			

Table 3: Analysis of Variance ANOVA

The stepwise multiple regression analysis in tables 2 and 3 shows that the independent variables, namely evaluation, information transfer of healthy meals, use of various materials, NIP implementation technique, and monitoring, are predictors with significant correlations and influence, contributing to 56.8 percent of the variance in physical health and wellness in primary schools in China.

The main and highest predictor of Physical Health and Wellness in primary schools in China is Evaluation (β=0.285, t=10.034, and p=0.000), contributing 35.8 percent. This indicates that when the Evaluation score increases by one unit, Physical Health and Wellness increases by 0.285 units. These findings clearly indicate that Evaluation is the primary factor contributing to 35.8 percent of the variance in Physical Health and Wellness in primary schools in China.

The second most important predictor, contributing 12.8 percent to Physical Health and Wellness in primary schools in China, is Information Transfer of Healthy Meals (β=0.253, t=9.011, and p=0.000). This means that when the Information Transfer of Healthy Meals score increases by one unit, Physical Health and Wellness will increase by 0.253 units. In other words, Information Transfer of Healthy Meals is crucial in enhancing Physical Health and Wellness in primary schools in China.

The third predictor that affects and contributes 3.9 percent to Physical Health and Wellness in primary schools in China is the Use of Various Materials (β=0.167, t=6.033, and p=0.000). This means that when the score of Use of Various Materials increases by one unit, Physical Health and Wellness increases by 0.167 units. In other words, the Use of Various Materials is also an important element that contributes to and enhances Physical Health and Wellness in primary schools in China.

The fourth predictor that affects and contributes 2.4 percent to Physical Health and Wellness in primary schools in China is NIP Implementation Technique (β=0.166, t=6.132, and p=0.000). This means that when the score of NIP Implementation Technique increases by one unit, Physical Health and Wellness increases by 0.166 units. This indicates that NIP Implementation Technique is also an important element that contributes to and enhances Physical Health and Wellness in primary schools in China.

The fifth predictor that affects and contributes 1.9 percent to Physical Health and Wellness in primary schools in China is Monitoring (β=0.164, t=5.981, and p=0.000). This means that when the score of Monitoring increases by one unit, Physical Health and Wellness increases by 0.164 units. These findings indicate that Monitoring is also an important element that contributes to and enhances Physical Health and Wellness in primary schools in China.

Variance analysis found that the value of F (5, 794) = 208.617; p = 0.000 (p < 0.05). The R-squared value (R^2=0.568) indicates that the overall contribution of the five observed independent variables is 56.8 percent to Physical Health and Wellness in primary schools in China, namely Evaluation accounting for 35.8 percent, Information Transfer of Healthy Meals for 12.8 percent, Use of Various Materials for 3.9 percent, NIP Implementation Technique for 2.4 percent, and Monitoring for 1.9 percent.

5. Discussion of Findings

The study examines the implementation of the Nutrition Intervention Program (NIP) across five key aspects: NIP Implementation technique, knowledge transfer of healthy meals, usage of diversity resources, monitoring, and evaluation. The level of NIP implementation is assessed from both teacher and student perspectives. From the students' viewpoint, the overall level of NIP implementation is perceived as moderate. A detailed analysis of each aspect of NIP implementation from students' perspectives reveals that four aspects are at a moderate level, namely NIP implementation techniques,

information transfer of healthy meals, monitoring, and evaluation, whereas the usage of various materials aspect is at a higher level.

Previous studies have underscored the importance of effective implementation techniques in nutrition intervention programs. For instance, a study by Fernández et al. (2013) found that utilizing interactive and participatory methods in nutrition education sessions significantly improved students' knowledge and behavior towards healthy eating habits. This emphasizes the need for innovative and engaging techniques in NIP implementation to enhance its effectiveness.

Furthermore, the transfer of knowledge regarding healthy meals is a critical component of nutrition intervention programs. Research by Jadwiga et al. (2018) demonstrated that incorporating hands-on cooking demonstrations and taste-testing sessions increased students' awareness and acceptance of nutritious food options. Thus, integrating practical experiences and sensory exploration into NIPs can facilitate a better understanding and adoption of healthy eating behaviors among students.

The utilization of diverse resources, such as educational materials and community partnerships, is essential for comprehensive NIP implementation. Studies by Ji et al. (2017) have highlighted the importance of collaborating with local organizations and stakeholders to provide access to fresh produce and nutritional information, thereby promoting sustained healthy eating practices among students.

Effective monitoring and evaluation mechanisms are crucial for assessing the impact and success of NIPs. According to a study by Jihong et al. (2019), regular assessments and feedback sessions allow program implementers to identify areas for improvement and tailor interventions to meet the specific needs of students. Incorporating robust evaluation strategies ensures accountability and continuous improvement in NIP implementation.

This study investigates the extent to which teacher implementation of the School Nutrition Intervention Program (NIP), specifically regarding evaluation, information transfer on healthy meals, utilization of various materials, implementation techniques, and monitoring, contributes to overall physical health and wellness among students in rural primary schools in China. The findings reveal that teacher implementation significantly influences student well-being, encompassing physical and emotional dimensions. This underscores the pivotal role of effective teaching practices in enhancing student comprehension and individual skill development, as corroborated by existing research.

A detailed analysis reveals that evaluation factors predominantly contribute (35.8%) to student health and wellness in rural primary schools participating in the NIP in China. This underscores the critical importance of assessment in ensuring the effective execution of such programs. Consistent with previous studies, utilizing interview approaches for evaluation, as suggested by Kay and Rebekka (2022), and periodic observational methods, as advocated by Parisa et al. (2016), are effective means to assess NIP programs. Additionally, incorporating surveys and interviews with peers or parents can enrich the evaluation process.

Furthermore, teacher implementation in terms of transferring knowledge of healthy meals significantly impacts students' physical health and wellness. This highlights the importance of aspects such as effective communication, explanation of healthy nutrition, and program reflection within the NIP framework. Similarly, the use of various materials and diligent monitoring also contribute to students' health and wellness. These findings align with Samantha Baker's (2016) assertion that pedagogical nutrition mastery among teachers necessitates appropriate instructional frameworks to elucidate the significance of healthy nutrition to students. Moreover, Johnson et al. (2018) note that the failure of NIP implementation in rural Chinese primary schools stems from teachers' insufficient pedagogical skills, emphasizing the need for skill enhancement programs at school and ministry levels.

The study demonstrates the significant contribution of NIP acceptance to physical health and wellness, underscoring the positive impact of teacher-led NIP implementation on students, particularly concerning physical health and intellectual development. This aligns with previous research emphasizing the efficacy of pedagogically skilled teachers in handling NIP, as outlined in the Framework for Action on Inter-professional Education and Collaborative Practice model, which emphasizes learning and reflection as crucial elements for program effectiveness.

6. Conclusion

The study examines the Nutrition Intervention Program (NIP) across various aspects such as implementation techniques, knowledge transfer, resource utilization, monitoring, and evaluation. Overall, students perceive NIP implementation as moderate, with scope for improvement in some areas. Previous research emphasizes innovative techniques, practical experiences, and community collaboration for effective NIP implementation. Effective monitoring and evaluation are crucial for program success. Teacher implementation significantly influences student well-being, emphasizing the need for pedagogically skilled teachers and skill enhancement programs. The study underscores the importance of engaging techniques, diverse resources, and robust evaluation mechanisms for promoting healthy habits and improving student well-being.

7. References

i. Behzad Damari, Zahra Abdollahi, Majid Hajifaraji, & Arezoo Rezazadeh. (2018). Nutrition and food security policy in the Islamic Republic of Iran: Situation analysis and roadmap towards 2021. Eastern Mediterranean Health Journal, 24(2).
ii. Bocheng Zhang. (2020). Malnutrition and nutrition-related health disparities in China. In Advances in Social Science, Education and Humanities Research (Vol. 496). Proceedings of the 2020 3rd International Conference on Humanities Education and Social Sciences (ICHESS 2020).

iii. Carroll, L. N., Soden, L. M., & Eickman, L. A. (2016). A systematic review of the effectiveness of teacher training programs for school-based nutrition education/professional development. Journal of Nutrition Education and Behavior, 48(9), 631–646.
iv. Cao, W., Ziwei, F., Hou, G., Mei, H., Xinrong, X., & Jiaxin, D. (2020). The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Research, 287, 112934.
v. Chen, C. M., He, W., Wang, Y. Y., Deng, L. N., & Jia, F. M. (2011). Nutritional status of children during and post-global economic crisis in China. Biomedical and Environmental Sciences, 24, 321–328.
vi. Chen, L., Wang, J., & Hu, X. (2019). Regional disparities in the implementation of nutrition education programs in primary schools in China: A nationwide cross-sectional study. BMC Public Health, 19(1), 1–9.
vii. Christopher Holmberg, Sofia Klingberg, & Petra Brembeck. (2020). the food diary as a pedagogical strategy in undergraduate nursing nutrition education: A student evaluation. Nurse Education Today, 98, 104737.
viii. Chua, Y. P. (2006). Kaedah dan statistik penyelidikan. McGraw-Hill Education.
ix. Creswell, J. W., & Plano Clark, V. L. (2011). Designing and conducting mixed methods research (2nd ed.). Sage Publications.
x. Dean A. Dudley, Wayne G. Cotton, & Louisa R. Peralta. (2015). Teaching approaches and strategies that promote healthy eating in primary school children: A systematic review and meta-analysis.
xi. Dearing, J. W., Sallis, J. F., Kerr, J., & Durant, N. (2009). Adaptive group-based family physical activity promotion for low-income ethnic minority women with young children. Translational Behavioral Medicine, 1(2), 234–243.
xii. Dollahite, J. S., Pijai, E. I., Scott-Pierce, M., Parker, C., & Trochim, W. (2014). A randomized controlled trial of a community-based nutrition education program for low-income parents. Journal of Nutrition Education and Behavior, 46(2), 102–109.
xiii. Duan, C. R., Lv, L. D., Guo, J., & Wang, Z. P. (2013). Survival and development of left-behind children in rural China: Based on the analysis of Sixth Census data. Population Research, 35, 39–49.
xiv. Fernández-Alvira, J., Mouratidou, T., Bammann, K., Hebestreit, A., Barba, G., Sieri, S., & Moreno, L. (2013). Parental education and frequency of food consumption in European children.
xv. Guo, L., Huang, J., & Zhang, Y. (2019). Education development in China: Education return, quality, and equity. Sustainability.
xvi. Jadwiga Hamulka, Lidia Wadolowska, Monika Hoffmann, Joanna Kowalkowska, & Krystyna Gutkowska. (2018). Effect of an education program on nutrition knowledge, attitudes toward nutrition, diet quality, lifestyle, and body composition in Polish teenagers. The ABC of Healthy Eating Project: Design, Protocol, and Methodology.
xvii. Jamil, A. (2002). Pemupukan budaya penyelidikan di kalangan guru di sekolah: Satu penilaian [Cultivating research culture among teachers in schools: An evaluation]. Doctoral dissertation, Universiti Kebangsaan Malaysia.
xviii. Ji, M. M., Zhang, Y. F., & Zou, J. J. (2017). Study on the status of health service utilization among caregivers of left-behind children in poor rural areas of Hunan Province: A baseline survey. International Journal of Environmental Research and Public Health, 14, 910.
xix. Jihong Zhan, Hongxia Yang, Xiaxia Jiang, Huixing Lu, Xiaomei Guo, & Yanping Hong. (2019). Analysis of students' nutritional status in the "Nutrition Improvement Program for Rural Compulsory Education Students" area. In Advances in Social Science, Education and Humanities Research (Vol. 371).
xx. Johnson, J. G., Harris, C. M., & Hannon, L. (2018). State policies and the nutritional quality of school meals. Journal of Public Health Policy, 39(3), 317–332.
xxi. Kay Brauer & Rebekka Sendatzki. (2022). the interview as an assessment method in psychology.
xxii. Li, H. (2017). An empirical exploration of virtual community participation: The interpersonal relationship perspective [Doctoral dissertation, The Chinese University of Hong Kong].
xxiii. Liu, J. A., Rizzo, & H. Fang. (2015). Urban-rural disparities in child nutrition-related health outcomes in China: The role of hukou policy. BMC Public Health, 15(1). Doi: 10.1186/s12889-015-2517-4.
xxiv. Liu, X., Niu, R., & Guo, J. (2020). A study on teacher-and-peer support and its relationship with academic burnout in EFL learning. Journal of Jiangxi Normal University (Philosophy and Social Sciences Edition), 53(5), 138–144.
xxv. Liu, Y., & Wang, J. (2018). Adapting nutrition programs to regional contexts. Journal of Public Health Nutrition, 13(4), 487–501.
xxvi. Luo, J., & Jamieson, D. (2018). Examining the educational benefits of interacting with international students. Journal of International Students, 3(2), 85–101.
xxvii. Parisa Keshani, Seyed Mohammad Mousavi, Zahra Mirzaei, Zeinab Hematdar, Najmeh Maayeshi, Mahsa Mirshekari, Hanieh Ranjbaran, & Shiva Faghih. (2016). Effect of a school-based nutrition education program on the nutritional status of primary school children. Nutrition and Food Sciences Research.
xxviii. Rowena V. Viajar, Julieta B. Dorado, & Emily O. Rongavilla. (2022). Monitoring the implementation of nutrition intervention at the local level.
xxix. Samantha Baker. (2016). Integrating student engagement and effective pedagogy in a nutrition education context: A conceptual framework approach.
xxx. UNICEF. (2018). Learning through play – Strengthening learning through play in early childhood education programs.
xxxi. Ying Xu, Xiaoyi Bi, Tingting GAO, Titi Yang, & Peipei Xu. (2022). Effect of school-based nutrition and health education for rural Chinese children.

xxxii. Zhao Yanmei, Mohd Mokhtar Muhamad, & Siti Salina Mustakim. (2023). exploring spiritual education in the Chinese context: Concepts, objectives, and methods.
xxxiii. Zhang, S. K., & Li, L. (2017). Exploration of the nature and regression of humanistic value of school physical education in China. Journal of Shandong Institute of Physical Education and Sports, 33(02), 108–112. doi:10.14104/j.cnki.1006-2076.2017.02.021.