

Enhancing The Nutrition Improvement Program in China: Assessing The Role of Social Environmental Support from Teachers' Perspectives

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Abstract

This study aims to explore the perspectives of teachers on the Nutrition Improvement Program (NIP) implemented in primary schools. The teachers' perspectives are seen in terms of social environment support which includes aspects of school environment support, teachers group support, parent support, training support and social media support. This research employs a quantitative technique and a survey research design. In this paper, 400 teachers those who run the Nutrition Improvement Program (NIP) for 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 0.835. The data of the study were analyzed using Statistical Package for the Social Sciences (SPSS) Version 23 software. The findings showed the level of social environmental support in the implementation of the NIP in primary schools in China is at a moderate level. All aspects of social environmental support, including school environment support, teachers' group support, parents support, training support, and media social support are at a moderate level. The results showed that there is a significant difference for social environment support from the aspects of school environment support, teacher's group, parents support, training support, and media social support based on province. Qing Hai Province is higher than other provinces in all aspects and this shows that the implementation of the NIP is satisfactory and it should be emulated by other provinces. The social environmental support contributes as much as 59.5 percent towards NIP implementation. This study underscores the significance of social environmental support in the successful implementation of health promotion programs in primary schools. By addressing regional variations and leveraging collaborative networks, policymakers and

educators can enhance the effectiveness of NIP implementation efforts, ultimately contributing to improved student health outcomes and well-being.

Keyword: Nutrition Improvement Program, Social Environment Support

Introduction

Human capital investment in terms of education and economy is the key of a country's progress (Jones & Brown, 2019). In Education, all countries in the world have undergone several changes in the past to ensure that their education system is in line with the needs of society and in line with the current era of digital globalization. Therefore, most countries have already introduced compulsory education system to ensure education is fair for all. For China, where education starts from the early of civilization in the world, it has a unique history including the development of the education system. China population of China which has the largest population in the world which currently reaching 1.3 billion and has 22 provinces. Economically, China is a big power and becomes the world's second largest economy nominally (or the world's largest according to purchasing power parity) and a permanent member of the United Nations Security Council (Chen et al., 2019).

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 themselves to enter 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 it's reform and opening up (Li et al., 2017).

However, there are some challenges and weaknesses in the education system in China. Luo and Jamieson (2018) found that there is still a huge difference in educational achievement between urban and rural areas in China. In addition, students' dropout in the academic field also occurs especially among rural students due to the increasement in the cost of schooling, improper living conditions, transportation problems and 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 assure 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.

To run the Nutrition Improvement Program (NIP) at the school level, teachers need to play a role so that the implementation of the program can be carried out effectively. The teachers involved in this program will explain about healthy meals and will use various materials to explain to the students about the importance of the NIP program in the personal development of individuals or students, especially at the primary school level. Apart from that, teachers need to monitor and evaluate the students who are involved in this program. The role of the teacher is important to make sure that the implementation of the NIP achieves the goals that have been set up to help improve the physical, emotional, and intellectual health of the students.

The findings of this study are expected to provide detailed input regarding teacher supports, role of the teachers that can be used to strengthen and complete this program towards helping children excel in academics through healthy eating. Apart from this, it is hoped that this study can help various parties, especially the Ministry of Education, NGOs and others to form policies, 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 outstanding performance of underprivilege students. This study aims to explore the perspectives of teachers on the Nutrition Improvement Program (NIP) implemented in primary schools. The teachers' perspectives are seen in terms of social environment support which includes aspects of school environment support, teachers group support, parent support, training support and social media support.

Literature Review

Hamulka (2018) found that the nutrition program is a program that can greatly benefit the poor students who are less fortunate to get balanced food, especially for early childhood or primary school students. Duan et al (2013) also asserted that, this healthy and balanced nutrition program can't only help the physical development, but also have an impact on emotional balance and intellectual intelligence in education, especially for children at the early age stages, and at the primary school level. Chen et al (2011) also stated that early childhood nutrition programs for poor students, especially in rural areas, need to be done continuously because they have a long-term impact both physically and socially among the students until they reach adult-age. According to Ji et al (2017), a healthy and balanced diet can guarantee an individual or student physical and intellectual development and positive behavior in a good school environment, peers, and family.

Studies on NIP have also been carried out in China, including Zhan (2019) who conducted a study on students from rural area schools and found that the NIP program greatly improved their physical health. While Yefu et al (2018) who had conducted a study in the Hunnan Province on children at the primary school level had found that there are several weaknesses in the implementation of the program especially from the aspect of infrastructure facilities, transportation, parental support which causes many of the students were unable to follow the program systematically in a long term. While a study by Xu (2022) who studied the involvement of teachers in food nutrition programs carried out in China found out that the role of teachers is important in helping to improve students' understanding of eating healthy through the NIP nutrition program at the school level. Apart from that, this study suggests that studies related to the implementation aspects of teachers related to monitoring and

evaluation aspects need to be done periodically and continuously because to ensure that the NIP program implemented in rural areas, especially in China, can be implemented effectively.

Huang (2021) stated that the problem of healthy eating among students, especially in rural areas in China where some of them lack nutritious food from such as grains and vegetables in their daily lives. This is in line with the China National Nutrition Survey (CNS) 1982, 1992, 2002, and 2010-2012 and the report and China Health and Nutrition Survey (CHNS) 1989-2015 found that rural communities since childhood still face a lack of nutritious food especially in terms of vegetables and ingredients from animal meat. This matter is important to be addressed in a continuous manner that involves various sectors at the primary school level in rural areas.

Studies related to the Nutrition Improvement Program (NIP) have also been conducted abroad, including in Kenya by Kilemi (2005) who found that food shortages among children are quite significant, causing the attendance rate of children to school to be at a worrying level. Therefore, the Government has taken an intervention step by giving free meals at school which in the end not only succeeded in providing knowledge about eating a balanced meal but also reduced the rate of truancy among school pupils.

A study in the Philippines by Magbuhat et al (2011) found that the Ministry of Education of the Philippines also held a program for the underprivileged students to provide and encourage students to eat healthy food, especially vegetables, which can increase the growth and intelligence of students, involving teachers, mothers and fathers. and peljar himself by running the "Sayuran Saya" campaign to cultivate eating vegetables among students.

The NIP program was also carried out in Iran, Behzad (2018) where this program was implemented by the Ministry of Education through a nutrition assistance program for underprivileged students at the school level. This program is implemented at the school level and is also sponsored by the Ministry of Health to ensure that all food supplied to students meets healthy eating standards. This is in line with the Global Action Plan of the World Health Organization (WHO) which states that various sectors need to carry out a series of interventions at various levels to help provide healthy food to communities in need.

Whereas in other developed countries, NIP programs are also implemented for the students in the United States. Karen et al (2008) found that there are still many disadvantaged or poor students who are still unable to eat a balanced diet in their daily lives and the factors this also causes them to experience less healthy self-growth, and some also remain in education due to the constraints of their lives.

Study done by Dollahite (2014) found that the food nutrition program has a lot of impacts on students - rural students or even low-income students and helps them to get healthy food and can improve physical and intellectual health as well as improve student performance in education. A study by Fernández-Alvira et al (2013) who conducted a study among poor and marginalized children implemented by the Government and Non-Government Organization (NGO) found that parental support is important in implementing this program because at this stage children are greatly influenced by their families and parents to ensure that the NIP runs smoothly. This study also suggests that parents also need to be

given knowledge and information about nutrition programs. This is to ensure that the planned program can meet the set goals.

A study conducted in Australia by Dean A Dudley et al (2015) also found that the involvement of the teachers in interventions to provide knowledge and understanding to students about the NIP program requires a variety of approaches, techniques and the use of a variety of materials as well as establishing teachers' groups to ensure that the NIP program can be well received by the students where balanced and healthy food are important for physical, emotional and intellectual development. Zenebe et al (2018) stated that healthy and balanced meals among students is the main factor in determining student performance in learning in both curriculum or co-curriculum level. He then further suggested that teachers need to diversify the implementation methods in the delivery of the NIP program that is implemented.

Methodology

This research employs a quantitative technique and a survey research design. Because 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 is 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, 400 teachers those who run the Nutrition Improvement Program (NIP) for 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. 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 which is 0.835.

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 socio-environmental support. Inferential analysis involving one-way MANOVA and two-way MANOVA analysis were used to determine if any significant differences in socio-environmental support based on province.

Findings

The Social Environmental Support is examined across five aspects: school environment support, teachers' group support, parents' support, training support, and social media

support. The results of the study related to the level of Social Environmental Support are presented in Table 1.

Table 1

Level of Social Environmental Support

Social Environment Support Aspects	Mean	Std. Dev.	Interpretation
School Environment Support	3.404	0.905	Moderate
Teachers Group Support	3.373	0.926	Moderate
Parent Support	3.433	0.943	Moderate
Training Support	3.337	0.894	Moderate
Social Media Support	3.362	0.976	Moderate
Overall Social Environmental Support	3.382	0.692	Moderate

Based on Table 1, it was found that overall, the level of social environmental support in the implementation of the NIP in primary schools in China is at a moderate level (mean = 3.382; s.d. = 0.692). A detailed analysis for each aspect of social environmental support indicates that all aspects of social environmental support, including school environment support (mean = 3.404; s.d. = 0.905), teachers' group support (mean = 3.373; s.d. = 0.926), parents support (mean = 3.433; s.d. = 0.943), training support (mean = 3.337; s.d. = 0.894), and media social support (mean = 3.362; s.d. = 0.976), are at a moderate level.

To identify the comparison of the level of Social Environmental Support from the perspective of teachers based on province, One-Way MANOVA Test were used. In the MANOVA analysis, there are several types of statistical tests such as Wilks' Lambda, Pillai's Trace, Hotelling's Trace and Roy's. Each type of statistical test is used to test multivariate hypothesis for which the population means is the same. In this study, the researcher used the statistics of Wilks' Lambda because this test has been used frequently in the studies of social sciences. Table 2 shows the results of analysis MANOVA test.

Table 2

Wilks' Lambda Total Differences in Social Environmental Support Based on Province

Effect	Wilks' Lambda Value	F-Value	DK between group	DK within group	Sig.
Social Environmental Support	.707	7.151	20.000	1297.750	0.000*

* Significant at P<0.05

Based on Table 2, the value of Wilks' Lambda = 0.707, F=7.151 and p =0.000 (p<0.05). The results showed that there is a significant difference for social environment support from the aspects of school environment support, teacher's group, parents support, training support, and media social support based on province. Next, the multiple MANOVA tests have been used to record the differences in the mean score of each dependent variable in the social environmental support construct based on province as an extension of the MANOVA analysis. To control the Type 1 error for this multiple tests, Bonferroni test was used with each MANOVA test at the level of significance of 0.025. Table 3 shows the MANOVA analysis for the difference in mean scores obtained for social environmental support based on province

and Table 4 shows the Post Hoc Analysis of Difference Aspects of Social Environmental Support based on Province.

Table 3
MANOVA Difference Aspects of Social Environmental Support Based on Province

Variable	Province	N	Mean	S. D.	Type III Sum of Squares	Df	Total Square	F	Sig.
School Environment Support	Qing Hai	80	3.9550	.86594	47.305	4	11.826	16.707	0.000*
	Yunnan	80	3.6063	.95006					
	Henan	80	3.3325	.77798					
	Shandong	80	3.1275	.80818					
	Fujian	80	2.9975	.79268					
Teachers Group Support	Qing Hai	80	3.8281	.95909	57.666	4	14.417	19.980	0.000*
	Yunnan	80	3.7953	.77190					
	Henan	80	3.2547	.90630					
	Shandong	80	3.1266	.82425					
	Fujian	80	2.8625	.76891					
Parent Support	Qing Hai	80	3.6875	.97449	35.320	4	8.830	10.926	0.000*
	Yunnan	80	3.7104	.91470					
	Henan	80	3.5229	.90075					
	Shandong	80	3.3458	.87099					
	Fujian	80	2.9000	.82745					
Training Support	Qing Hai	80	3.6604	.82866	46.535	4	11.634	16.873	0.000*
	Yunnan	80	3.6875	.85576					
	Henan	80	3.4000	.87133					
	Shandong	80	3.1646	.84423					
	Fujian	80	2.7708	.74600					
Social Media Support	Qing Hai	80	3.8450	.94667	51.711	4	12.928	15.536	0.000*
	Yunnan	80	3.6275	1.05901					
	Henan	80	3.3825	.86855					
	Shandong	80	3.1300	.90587					
	Fujian	80	2.8250	.75364					

* Significant at P<0.05

Table 4
Post Hoc Analysis of Difference Aspects of Social Environmental Support based on Province

Dependent Variable	(I) Province	(J) Province	Mean Difference (I-J)	Std. Error	Sig.
School Environment Support	Qing Hai	Yunnan	.3487	0.133	0.145
		Henan	.6225*	0.133	0.000
		Shandong	.8275*	0.133	0.000
		Fujian	.9575*	0.133	0.000
	Yunnan	Qing Hai	-.3487	0.133	0.145
		Henan	.2738	0.133	0.377
		Shandong	.4788*	0.133	0.012
		Fujian	.6088*	0.133	0.000
	Henan	Qing Hai	-.6225*	0.133	0.000
		Yunnan	-.2738	0.133	0.377
		Shandong	.2050	0.133	0.667

		Fujian	.3350	0.133	0.177
	Shandong	Qing Hai	-.8275*	0.133	0.000
		Yunnan	-.4788*	0.133	0.012
		Henan	-.2050	0.133	0.667
	Fujian	Fujian	.1300	0.133	0.916
		Qing Hai	-.9575*	0.133	0.000
		Yunnan	-.6088*	0.133	0.000
		Henan	-.3350	0.133	0.177
		Shandong	-.1300	0.133	0.916
Teachers Group Support	Qing Hai	Yunnan	.0328	0.134	1.000
		Henan	.5734*	0.134	0.001
		Shandong	.7016*	0.134	0.000
		Fujian	.9656*	0.134	0.000
	Yunnan	Qing Hai	-.0328	0.134	1.000
		Henan	.5406*	0.134	0.003
		Shandong	.6688*	0.134	0.000
		Fujian	.9328*	0.134	0.000
	Henan	Qing Hai	-.5734*	0.134	0.001
		Yunnan	-.5406*	0.134	0.003
		Shandong	.1281	0.134	0.923
		Fujian	.3922	0.134	0.076
	Shandong	Qing Hai	-.7016*	0.134	0.000
		Yunnan	-.6688*	0.134	0.000
		Henan	-.1281	0.134	0.923
		Fujian	.2641	0.134	0.426
	Fujian	Qing Hai	-.9656*	0.134	0.000
		Yunnan	-.9328*	0.134	0.000
		Henan	-.3922	0.134	0.076
		Shandong	-.2641	0.134	0.426
Parent Support	Qing Hai	Yunnan	-.0229	0.142	1.000
		Henan	.1646	0.142	0.854
		Shandong	.3417	0.142	0.219
		Fujian	.7875*	0.142	0.000
	Yunnan	Qing Hai	.0229	0.142	1.000
		Henan	.1875	0.142	0.783
		Shandong	.3646	0.142	0.162
		Fujian	.8104*	0.142	0.000
	Henan	Qing Hai	-.1646	0.142	0.854
		Yunnan	-.1875	0.142	0.783
		Shandong	.1771	0.142	0.817
		Fujian	.6229*	0.142	0.001
	Shandong	Qing Hai	-.3417	0.142	0.219
		Yunnan	-.3646	0.142	0.162
		Henan	-.1771	0.142	0.817
		Fujian	.4458*	0.142	0.045

	Fujian	Qing Hai	-.7875*	0.142	0.000
		Yunnan	-.8104*	0.142	0.000
		Henan	-.6229*	0.142	0.001
		Shandong	-.4458*	0.142	0.045
Training Support	Qing Hai	Yunnan	-.0271	0.131	1.000
		Henan	.2604	0.131	0.416
		Shandong	.4958*	0.131	0.007
		Fujian	.8896*	0.131	0.000
	Yunnan	Qing Hai	.0271	0.131	1.000
		Henan	.2875	0.131	0.311
		Shandong	.5229*	0.131	0.004
		Fujian	.9167*	0.131	0.000
	Henan	Qing Hai	-.2604	0.131	0.416
		Yunnan	-.2875	0.131	0.311
		Shandong	.2354	0.131	0.523
		Fujian	.6292*	0.131	0.000
	Shandong	Qing Hai	-.4958*	0.131	0.007
		Yunnan	-.5229*	0.131	0.004
		Henan	-.2354	0.131	0.523
		Fujian	.3937	0.131	0.063
	Fujian	Qing Hai	-.8896*	0.131	0.000
		Yunnan	-.9167*	0.131	0.000
		Henan	-.6292*	0.131	0.000
		Shandong	-.3937	0.131	0.063
Social Media Support	Qing Hai	Yunnan	.2175	0.144	0.686
		Henan	.4625*	0.144	0.038
		Shandong	.7150*	0.144	0.000
		Fujian	1.0200*	0.144	0.000
	Yunnan	Qing Hai	-.2175	0.144	0.686
		Henan	.2450	0.144	0.578
		Shandong	.4975*	0.144	0.019
		Fujian	.8025*	0.144	0.000
	Henan	Qing Hai	-.4625*	0.144	0.038
		Yunnan	-.2450	0.144	0.578
		Shandong	.2525	0.144	0.548
		Fujian	.5575*	0.144	0.005
	Shandong	Qing Hai	-.7150*	0.144	0.000
		Yunnan	-.4975*	0.144	0.019
		Henan	-.2525	0.144	0.548
		Fujian	.3050	0.144	0.348
	Fujian	Qing Hai	-1.0200*	0.144	0.000
		Yunnan	-.8025*	0.144	0.000
		Henan	-.5575*	0.144	0.005
		Shandong	-.3050	0.144	0.348

* Significant at P<0.05

Based on Tables 3 and 4, there is a significant difference in the level of school environment support in the implementation of NIP based on province ($F=16.707$, $p=0.000$). Post hoc tests indicate that the level of school environment support in Qing Hai province is high and significantly different from Henan, Shandong, and Fujian provinces. The level of school environment support in Yunnan province is also high and significantly different from Shandong and Fujian provinces. However, there is no significant difference in the level of school environment support between Qing Hai and Yunnan provinces, between Henan and Yunnan provinces, between Henan and Shandong provinces, and between Henan and Fujian provinces.

There is a significant difference in the level of teachers' group support in the implementation of NIP based on province ($F=19.980$, $p=0.000$). Post hoc tests indicate that the level of teachers' group support in Qing Hai province is high and significantly different from Henan, Shandong, and Fujian provinces. The level of teachers' group support in Yunnan province is also high and significantly different from Henan, Shandong, and Fujian provinces. However, there is no significant difference in the level of teachers' group support between Qing Hai and Yunnan provinces, between Henan and Shandong provinces, between Henan and Fujian provinces, between Henan and Yunnan provinces, and between Fujian and Shandong provinces.

There is a significant difference in the level of parent support in the implementation of NIP based on province ($F=10.926$, $p=0.000$). Post hoc tests indicate that the level of parent support in Qing Hai province is high and significantly different from Fujian province. The level of parent support in Yunnan province is also high and significantly different from Fujian province. Additionally, the level of parent support in Henan province is high and significantly different from Fujian province. However, there is no significant difference in the level of parent support between Qing Hai and Yunnan provinces, between Yunnan and Henan provinces, between Yunnan and Shandong provinces, between Henan and Shandong provinces, and between Fujian and Shandong provinces.

There is a significant difference in the level of training support in the implementation of NIP based on province ($F=16.873$, $p=0.000$). Post hoc tests indicate that the level of training support in Qing Hai province is high and significantly different from Shandong and Fujian provinces. Similarly, the level of training support in Yunnan province is high and significantly different from Shandong and Fujian provinces. Additionally, the level of training support in Henan province is high and significantly different from Fujian province. However, there is no significant difference in the level of training support between Qing Hai and Yunnan provinces, between Qing Hai and Henan provinces, between Yunnan and Henan provinces, between Henan and Shandong provinces, and between Shandong and Fujian provinces.

There is a significant difference in the level of social media support in the implementation of NIP based on province ($F=15.536$, $p=0.000$). Post hoc tests indicate that the level of social media support in Qing Hai province is higher and significantly different from Henan, Shandong, and Fujian provinces. Similarly, the level of social media support in Yunnan province is higher and significantly different from Shandong and Fujian provinces. Additionally, the level of social media support in Henan province is high and significantly different from Fujian province. However, there is no significant difference in the level of social

media support between Qing Hai and Yunnan provinces, between Yunnan and Henan provinces, between Henan and Shandong provinces, and between Shandong and Fujian provinces.

Discussion of Findings

The findings indicate that the Social Environmental Support towards the Implementation of NIP, encompassing aspects such as school environment support, teachers' group, parents, training, and social media support, overall, are only at a moderate level. This situation suggests that these aspects have not yet reached a satisfactory level to provide support to teachers in implementing the NIP program at the primary school level in rural areas in China. It underscores the need for comprehensive school environment preparations to assist effective NIP implementation. Teachers and parents need to be made aware to ensure continuous cooperation in enhancing the effectiveness of NIP implementation at the school level. Similarly, teachers need to be trained and exposed to social media to acquire additional information to further strengthen NIP implementation at the school level. These research findings are also consistent with studies by Behzad et al (2018), who found that partnerships between local environmental support and local community support, as well as training, are crucial to improving program effectiveness at the school level. This study aligns and reinforces Bronfenbrenner's theory (1985), which outlines environmental layers involving family, peers, and social environments that greatly influence various forms of individual change in implementing a program. Additionally, the study by Carroll et al (2016); Chen et al (2019), which conducted research on social environments, yielded similar findings that social environmental support significantly influences students' motivation and achievement in education.

The finding that there is a significant difference in social environment support across different aspects based on province underscores the importance of considering regional variations in the implementation of health promotion programs in schools. This result suggests that the level and quality of support may vary depending on the geographic location of the schools, which could have implications for the effectiveness and outcomes of such programs. Past studies have also highlighted the influence of contextual factors, including regional differences, on the implementation of health promotion initiatives in educational settings. For example, a study by Johnson et al (2018) examined variations in school health policies and practices across different states in the United States and found significant differences in the availability of resources and support for health promotion programs. Similarly, research by Chen et al (2019) investigated regional disparities in the implementation of nutrition education programs in schools in China and identified variations in the level of support and resources available to schools.

The significant difference observed in the level of school environment support in the implementation of the Nutrition Improvement Program (NIP) based on province highlights the importance of considering regional variations in educational settings. This finding suggests that the quality and availability of support in the school environment may vary across different provinces, which could influence the success of NIP implementation and ultimately impact student health outcomes. Past studies have also emphasized the significance of contextual factors, such as regional differences, in shaping the implementation of health promotion programs in schools. For example, research by Smith et al (2017) examined

variations in school environments and found that factors such as funding allocation, infrastructure, and community partnerships varied across different regions, influencing the implementation of health initiatives.

The significant difference observed in the level of teachers' group support in the implementation of the Nutrition Improvement Program (NIP) based on province underscores the influence of collaborative dynamics among educators in driving program success. This finding suggests that the extent of support and collaboration among teachers may vary across different provinces, impacting the effectiveness of NIP implementation efforts and ultimately affecting student health outcomes. Past research has highlighted the importance of teacher collaboration and support networks in facilitating the implementation of health promotion programs in school settings. For instance, a study by Johnson et al (2018) emphasized the role of teacher collaboration in promoting student health behaviors and outcomes, highlighting the need for strong interpersonal relationships among educators.

The significant difference observed in the level of parent support in the implementation of the Nutrition Improvement Program (NIP) based on province highlights the varying degrees of parental involvement and engagement across different regions. This finding suggests that the level of support and participation from parents may vary geographically, influencing the effectiveness of NIP implementation efforts and ultimately impacting student health outcomes. Past studies have emphasized the crucial role of parental involvement in promoting healthy behaviors and outcomes among school-age children. For example, research by Dearing et al (2009) highlighted the positive impact of parental support and engagement on children's dietary habits and physical activity levels, emphasizing the importance of fostering partnerships between schools and families.

The significant difference observed in the level of training support in the implementation of the Nutrition Improvement Program (NIP) based on province underscores the importance of tailored training initiatives to support program implementation across different regions. This finding suggests that the availability and quality of training resources and support for educators may vary geographically, influencing the effectiveness of NIP implementation efforts. Past studies have highlighted the critical role of training and professional development programs in equipping educators with the knowledge, skills, and resources needed to effectively implement health promotion initiatives in schools. For example, research by Carroll et al. (2016) emphasized the importance of comprehensive training programs for teachers to enhance their capacity to deliver nutrition education and promote healthy behaviors among students.

The significant difference observed in the level of social media support in the implementation of the Nutrition Improvement Program (NIP) based on province highlights the varying degrees of utilization and effectiveness of social media platforms in supporting program implementation across different regions. This finding underscores the potential role of social media as a valuable tool for disseminating information, engaging stakeholders, and promoting healthy behaviors among students and their families. Past research has recognized the importance of leveraging social media platforms in health promotion initiatives, including nutrition education programs in schools. For instance, a study by Vaterlaus et al (2015) highlighted the effectiveness of social media interventions in promoting healthy eating

behaviors among adolescents. By utilizing social media platforms, educators and health professionals can reach a wider audience, deliver targeted messages, and facilitate interactive discussions on nutrition-related topics.

Conclusion

In conclusion, the findings from this study shed light on the perception and significance of social environmental support in the implementation of the Nutrition Improvement Program (NIP) within primary schools in China. The moderate level of social environmental support observed underscores the importance of considering various dimensions of support, including school environment, teachers' group, parents, training, and social media, to facilitate effective program implementation. The significant differences observed in social environment support across different aspects and provinces highlight the need for tailored approaches to address regional variations in support levels. This underscores the importance of considering contextual factors, such as geographic location, in planning and implementing health promotion programs in schools. Furthermore, the findings regarding the significant differences in school environment, teachers' group, parents, training, and social media support based on province highlight the importance of considering regional dynamics in program implementation efforts. Tailoring training initiatives, fostering teacher collaboration, enhancing parental involvement, and leveraging social media platforms can contribute to more effective NIP implementation across different regions. In summary, this study underscores the significance of social environmental support in the successful implementation of health promotion programs in primary schools. By addressing regional variations and leveraging collaborative networks, policymakers and educators can enhance the effectiveness of NIP implementation efforts, ultimately contributing to improved student health outcomes and well-being.

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