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Research Article

The Association between Organizational Factors of Health Promoting Schools and Teachers' Health Lifestyles: A Multilevel Analysis

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ABSTRACT

BACKGROUND: Schools are both learning environments for students and workplaces for faculty. Recognizing the role of organizational factors in staff health in school environments, the study aimed to explore which factors, including transformational leadership, teachers' perceived management support and HPS accreditation awards, were most associated with promoting a healthy lifestyle for teachers.

METHODS: A cross-sectional study was undertaken of 137 elementary schools in 2014, involving 433 directors and 2090 teachers. Data were collected using an anonymous structured questionnaire. Hierarchical linear modeling was used to analyze both teacher- and school-level factors associated with health-promoting lifestyles.

RESULTS: There was a significant positive correlation between teachers' overall health-promoting lifestyle profile (HPLP-II) scores and both perceived management support (coefficient = .98, $p < .001$) and transformational leadership (coefficient = .38, $p = .039$). All 6 HPLP-II subscales also showed significant positive correlations with perceived management support (coefficients .12-.24, $p < .001$).

CONCLUSION: Supporting a healthy working atmosphere and strong principal transformational leadership are keys to enhancing teachers' health-promoting lifestyles. Future research could explore how transformational leadership and management support influence teachers' health behaviors and identify effective strategies and interventions.

Keywords: transformational leadership; perceived health management; health-promoting lifestyle profile (HPLP-II); teacher; hierarchical linear modeling.

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The World Health Organization's (WHO) Regional Office for the Western Pacific defines a healthy workplace as a place where everyone works together to achieve an agreed vision for the health and well-being of workers and the surrounding community. School is not only a learning setting for students but also a workplace for its faculty. According to the WHO's Global School Health Initiative, a health promoting school (HPS) can be characterized as a school that constantly strengthens its capacity to be a healthy setting for living, learning, and working.[1]

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The concept of an HPS is a whole-school approach aimed at engaging schools, families, and communities to promote health and educational attainment, and improve the overall health and well-being of students, teachers, and other members of the school community. In 2021, the WHO proposed the HPS International Standards. One of these standards, related to the school curriculum, emphasizes that school staff should demonstrate knowledge and understanding of students' physical, social, and psychological development, and how these factors may influence learning and behaviors.[2] As key role models, teachers play a critical role in shaping students' health and overall well-being.[3] Teachers' observable health behaviors can have both positive and negative effects on students' health and behaviors.[4] Additionally, associations have been found between teacher well-being and student well-being, but also, conversely, between teachers and students experiencing psychological distress.[5]

Schools are not only education entities, but also organizational entities. By fostering a healthy workplace, schools can support the health of their staff and advance their broader educational mission. However, several studies have indicated that teachers at all levels—elementary, secondary, and university—experience chronic diseases (eg, cardiovascular disease, hypertension) which are linked to unhealthy lifestyle habits, such as frequently eating out, skipping breakfast, low levels of physical activity, alcohol consumption, and poor sleep quality.[6,7] In the context of COVID-19, insufficient physical activity and enforced isolation among secondary school teachers were found to adversely impact both their emotional well-being and physical health.[8] Previous research has also explored the health behaviors of teachers and related influencing factors. Some studies have focused on the relationship between teachers' health knowledge, attitudes, or literacy and oral health[9] and eating behaviors.[10] Other research has examined the distribution of teachers' HPLP-II scores[11] or the association between teachers' characteristics (eg, gender or marital status) and habits (eg, taking courses on health promotion or accessing information on healthy living) and health-promoting behaviors.[12]

When the school setting is viewed as a workplace, a few studies have focused on impacts of the school work environment on teachers' workload and the effects of job demands on their mental health.[13-15] A workplace environment is significantly influenced by the role of the worksite leader, who is responsible for fostering a positive work climate and providing health resources that enhance staff well-being and job performance.[16-19] Chen et al[20] showed that school principals who received a gold award HPS status demonstrated a strong commitment to enhancing a healthy school environment, establishing connections with community health resources, and offering comprehensive health services for both students and staff.

In previous research, studies have focused on the individual factors that affect teachers' health-promoting behaviors, with less exploration of workplace context factors.[10-13] Thus, it is essential and necessary, based on both practical and ethical reasons, to explore the organizational factors of an HPS that are associated with promoting healthy lifestyles to teachers. If required, the school can then propose a worksite health promotion program that can help faculty maintain their health at work.

METHODS

Participants

The research subjects were recruited from 137 elementary schools located in 20 cities/counties across 4 geographical regions of Taiwan (north, central, south, and east) that participated in the Taiwan Health Promoting School Accreditation Program in 2014.[21] Given that participation in the program was voluntary, it is likely that these schools already emphasized and promoted good health. Schools were classified into 2 categories: small (fewer than 25 classes) and medium-large (25 or more classes). In small schools, all teachers were included in this survey. For medium-large schools, 4 teachers were purposively selected from each of the 6 grades who were voluntarily participating, resulting in a maximum of 24 teachers per school. A total of 2090 teachers participated in the survey. After excluding 159 responses due to missing data on key variables (gender, age, education level, and health-promoting lifestyle profile), no statistically significant differences were found between the complete and excluded responses. Consequently, the final analysis included 1931 participants, resulting in a response rate of 93.39%.

Additionally, all school directors were invited to participate in the survey so that transformational leadership could be evaluated. The number of respondents ranged from 1 to 4 per school, culminating in a total of 433 directors.

Instrumentation

The measures in this study comprised demographic characteristics, the HPLP-II scores, and organizational factors, such as perceived management support, transformational leadership, and HPS accreditation.

Demographic characteristics. The questionnaire asked for personal information (gender, age, and education level) and the school location type, described as either urban, rural, or indigenous village, depending on the administrative area.

Dependent Variable

Health-promoting lifestyle profile. The HPLP-II[22] scale was used to measure teachers' health-promoting lifestyle. The HPLP-II is a revised version of the original HPLP developed by Walker et al.[23] This scale has been utilized in research investigating teachers' health behaviors, providing insights into the multifaceted aspects of their physical and mental health-related lifestyles.[12,13,24] It consists of 52 items, divided into 6 subscales that measure behaviors across different dimensions of a health-promoting lifestyle: Interpersonal Relations (9 items), Nutrition (9 items), Physical Activity (8 items), Stress Management (8 items), Spiritual Growth (9 items), and Health Responsibility (9 items). Example items include: ''*Question health professionals to understand their instructions*'' and ''*Get a second opinion when I question my health care provider's advice*'' (Interpersonal Relations); ''*Choose a diet low in fat, saturated fat, and cholesterol*'' and ''*Limit use of sugars and foods containing sugar (sweets)*'' (Nutrition); ''*Do stretching exercises at least 3 times per week*'' and ''*Get exercise during usual daily activities*'' (Physical Activity); ''*Take some time for relaxation each day*'' and ''*Balance time between work and play*'' (Stress Management); ''*Feel I am growing and changing in positive ways*'' and ''*Feel connected with some force greater than myself*'' (Spiritual Growth); and ''*Discuss my health concerns with health professionals*'' and ''*Get a second opinion when I question my health care provider's advice*'' (Health Responsibility).

The HPLP-II asked respondents to indicate on a 4-point Likert scale (*never*, *sometimes*, *often*, and *routinely*) how often they adopt specific health-promoting behaviors. The overall standardized internal consistency (Cronbach's Alpha) was .92. The internal consistency of the 6 subscales ranged from .78 to .95, with higher summed scores indicating a healthier lifestyle.

Organizational Factors: Teacher-Level

Perceived management support. The scale used in this study was adapted from 3 subscales of the developmental scale by Della et al. (2013),[25] consisting of 9 questions with 5 response options ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The original scale by Della et al. includes 4 subscales aimed at assessing organizational support and management engagement in workplace health promotion (WHP). However, the subscale ''awareness of the economics of health and productivity'' was excluded, as it was deemed less applicable to the school context. Three items measured the organization's alignment with health promotion objectives. Statements included: ''*My school health promotion programs are aligned with our school vision*,'' ''*My school goals and plans advocate for the improvement of employee health*,'' and ''*My school objectives for promoting employee health improvement are set annually*.'' A 3-item scale assessed the worksite support for health promotion: ''*My school offers incentives for staff to stay healthy, reduce their high risk behaviours, and/or practice healthy life styles*,'' ''*My school's health and welfare initiatives for staff integrate disease prevention and health promotion*,'' and ''*My school's work teams provide support for participation in health promotion programs*.'' A 3-item scale assessed leader support for health promotion: ''*The school principal provided our site leaders training on the importance of employee health*,'' ''*My principal view the staff health and well-being as one important indicator in promoting school performance*,'' ''*My principal is committed to health promotion as an important investment in human capital*.'' To measure perceived management support, teachers were asked to rate how well their school promoted and supported healthy lifestyles. The overall standardized internal consistency (Cronbach's Alpha) was .92.

Organizational Factors: School-Level

Transformational leadership. Transformational leadership is positively associated with employee health and job performance.[18] This study invited each school director to assess their principal's transformational leadership based on 7 items modified from Carless et al' s transformational leadership scale.[26] There are 7 items in the scale, with 5 response categories ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The statements include: ''*Communicates a clear and positive vision of the future*,'' ''*Treats staff as individuals, supports and encourages their development*,'' ''*Gives encouragement and recognition to staff*,'' ''*Fosters trust, involvement and cooperation among team*,'' ''*Encourages thinking about problems in new ways and questions assumptions*,'' ''*Is clear about his/her values and practices what he/she preaches*,'' and ''*Instils pride and respect in others and inspires me by being highly competent*.'' The overall standardized internal consistency (Cronbach's Alpha) was .95.

HPS accreditation awards. HPS accreditation awards were classified into 5 categories: gold, silver, bronze, no award, and no participation.

Data Collection

Before conducting the survey, a letter was sent to the principals of sample schools which detailed the research purpose and data collection procedures and encouraged their participation. After acquiring the consent of the participating schools, a pack was posted to each participating teacher and director that consisted of a questionnaire, a consent form, and a return envelope. All participants provided informed consent before the process began and all responses were anonymous to maintain their confidentiality. Finally, interviewers visited the schools to collect all the returned envelopes.

Data Analysis

Statistical analysis was performed using SAS version 9.4 and hierarchical linear modeling (HLM). The descriptive results of categorical variables, such as gender, education level, school location, and HPS award, were expressed as the number and percentage of each category. Continuous variables, such as age, teachers' HPLP-II, perceived management support, and transformational leadership were expressed as mean and standard deviation (SD). This study utilized a 2-level design, necessitating the use of multilevel analysis to validate the research framework. HLM was employed as the appropriate statistical technique, given the nested structure of the data, where individual observations (eg, teachers) are nested within higher-level units (eg, schools). The HPLP-II total score and its 6 subscale scores served as the outcome variables. Independent variables included teacher-level factors (gender, age, education level, and perceived management support) and school-level factors (school location, transformational leadership, and HPS accreditation). HLM effectively managed random effects, allowing for variability in the influence of school-level factors, and accurately accounted for random variations at both the teacher and school levels. The intraclass correlation coefficient (ICC) of .195, derived from the null model in this study, indicates significant variation between schools, thereby affirming the appropriateness of HLM for analyzing the influence of school-level contextual factors on individual teacher outcomes within a nested data structure.

RESULTS

The Teacher-Level Variables Distribution

Table 1 presents the distribution of the teacher-level characteristics (n = 1931). Overall, 81.05% of teachers were female, about 45.93% were aged 40-49, and 60.69% had a bachelor's degree. Teachers' perceived management support mean score (range 9-45) was 31.75 (SD 6.03), indicating that they perceived that their school actively supported health promotion. The mean scores of total HPLP-II (range 69-208) was 136.97 (SD 18.10), showing that teachers' healthy lifestyle was above the medium level. In addition, the 6 subscales—Interpersonal Relation, Nutrition, Physical Activity, Stress Management, Spiritual Growth, Health Responsibility—were slightly above the middle of the scale range.

The School-Level Characteristics Distribution

Table 2 provides the distribution of school-level variables (n = 137). In terms of school location, 59.12% of the sample schools were in urban areas, 32.76% in rural areas, and 8.76% in indigenous villages. A total of 81.02% of the sample schools participated in the HPS accreditation program, with the following results: 3 schools (2.19%) were awarded gold, 8 schools silver (5.84%), 65 schools bronze (47.45%), 35 schools no award (25.55%), and 26 schools non-participating (18.98%). The average score for principal transformational leadership (range 7-35) was 28.79 (SD 3.07), indicating a positive perception of leadership across the schools.

Table 1. **Distribution of Background Variables at the Teacher Level (n = 1931)**

Categorical Variables	N	%	
Gender			
Male	366	18.95	
Female	1565	81.05	
Age (years old)			
Less than 40	787	40.76	
40-49	887	45.93	
50-65	257	13.31	
Education level			
Bachelor	1172	60.69	
Master/doctoral	759	39.31	
Continuous Variables		**Mean**	**SD**
Perceived management support (range = 9-45)		31.75	6.03
Health-promoting lifestyle profiles (range = 69-208)		136.97	18.10
Interpersonal relations (range = 13-36)		25.86	3.71
Nutrition (range = 9-36)		24.06	3.62
Physical activity (range = 8-32)		18.69	4.45
Stress management (range = 11-32)		21.53	3.73
Spiritual growth (range = 9-36)		25.26	4.34
Health responsibility (range = 9-36)		21.56	4.45

Table 2. **Distribution of School-Level Variables (n = 137)**

Categorical Variables	N	%	
School location			
Urban	81	59.12	
Rural	44	32.76	
Indigenous villages	12	8.76	
HPS accreditation awards			
Gold	3	2.19	
Silver	8	5.84	
Bronze	65	47.45	
No award	35	25.55	
Non-participating	26	18.98	
Continuous Variables		**Mean**	**SD**
Transformational leadership (range = 7-35)		28.79	3.07

The Association between Teacher Demographic Characteristics and HPLP-II

Table 3 presented the teachers' characteristics that were significantly associated with the HPLP-II subscales. Women scored higher than men in Interpersonal Relations and Nutrition, while men scored higher in Physical Activity and Stress Management. There were also significant differences in terms of

Table 3. **The Association Between Teacher Demographic Characteristics and Health-Promoting Lifestyle Profile-II Scores (n = 1931)**

Variables	HPLP-II		Six Subscales											
			IR		N		PA		SM		SG		HR	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Gender (*t*)	.89		4.98***		2.39*		7.43***		2.24*		.40		.12	
Male	137.7	19.8	25.0	4.0	23.6	4.0	20.3	4.7	21.9	3.8	25.3	4.6	21.5	4.8
Female	136.8	17.7	26.1	3.6	24.2	3.5	18.3	4.3	21.4	3.7	25.2	4.3	21.6	4.4
Age (years) (*F*)	4.71**(3>2)		10.92***(1>2)		1.27		10.71***(3>2,1)		1.58		2.83		3.31*(3>1)	
<40	137.2	19.3	26.3	4.0	24.0	3.9	18.5	4.5	21.6	4.0	25.3	4.6	21.4	4.7
40-49	136.0	17.5	25.5	3.5	24.0	3.5	18.5	4.4	21.4	3.6	25.1	4.3	21.5	4.4
50-65	139.9	15.9	25.8	3.1	24.4	3.1	19.9	4.4	21.8	3.3	25.8	3.6	22.2	4.0
Education level (*t*)	3.58***		.26		1.16		4.00***		2.95**		3.49***		3.46***	
Bachelor	135.8	17.7	25.8	3.8	24.0	3.5	18.4	4.3	21.3	3.7	25.0	4.3	21.3	4.4
Master/Doctoral	138.8	18.6	25.9	3.8	24.1	3.8	19.2	4.6	21.8	3.8	25.7	4.3	22.0	4.5

*p < .05;
**p < .01;
***p < .001.
The 6 subscales of the HPLP-II: Interpersonal Relations (IR), Nutrition (N), Physical Activity (PA), Stress Management (SM), Spiritual Growth (SG), and Health Responsibility (HR). The *t* value by *t* test; *F*-value by ANOVA test.

age; teachers aged 50-65 had higher scores in HPLP-II scores, Physical Activity, and Health Responsibility compared to those in all other age groups. However, older teachers had lower scores in Interpersonal Relations than their younger counterparts. Teachers with a master's degree exhibited higher scores in overall HPLP-II scores, Physical Activity, Stress Management, Spiritual Growth, and Health Responsibility compared to those with only a bachelor's degree.

Multilevel Models of Health-Promoting Lifestyle Profiles

The results of the multilevel analysis, presented in Table 4, identified several significant organizational factors associated with teachers' HPLP-II scores, after controlling for demographic characteristics factors. First, at the teacher level, perceived management support was positively correlated with the total HPLP-II scores, with a regression coefficient of .98 (p < .001). Second, at the school level, transformational leadership was positively associated with teachers' health-promoting lifestyle, where higher levels of transformational leadership were linked to higher HPLP-II scores (regression coefficient .38, p < .05). However, HPS accreditation awards were not significantly associated with the total HPLP-II scores.

Table 4 also presents the associations between organizational factors and the 6 subscales of teachers' health-promoting lifestyle profile (HPLP-II). First, perceived management support was significantly correlated with all 6 subscales: Interpersonal Relations, Nutrition, Physical Activity, Stress Management, Spiritual Growth, and Health Responsibility, with regression coefficients of .17, .12, .17, .12, .16, and .24, respectively (p < .001). Second, transformational leadership positively correlated with 3 subscales: Nutrition (regression coefficient = .10, p = .005), Physical Activity (regression coefficient .08, p = .030), and Stress Management (regression coefficient .08, p = .024).

DISCUSSION

The results showed that teachers' perceived management support and principal transformational leadership were positively correlated with their overall HPLP-II scores. However, HPS accreditation awards were not significantly correlated with the profile scores. Further analysis revealed that perceived management support was significantly associated with all 6 subscales of the HPLP-II. Transformational leadership showed positive correlations with 3 subscales: Nutrition, Physical Activity, and Stress Management.

Management support is an environment-related factor. It is typically regarded as a critical factor in the success of WHP programs because it significantly impacts employee job performance.[27] Employees' perceptions of company commitment (a form of perceived organizational support) and leadership support for health promotion serve as mediators between WHP initiatives and employee well-being.[28] The 3 factors used to assess perceived management support in this study were organizational alignment with health promotion objectives, worksite support, and leader support. Our findings, indicating a positive association between perceived management support and teachers' health-promoting lifestyles, are consistent with those of DeJoy et al (2009),[16] who demonstrated that enhanced management support for health promotion leads to improved perceptions of organizational support, fostering a work environment that encourages healthy behaviors, including better nutrition, weight management, and physical activity. These results suggest that perceived management support can be used to evaluate teachers' perceptions of school management support for WHP and guide the development

Table 4. **Multilevel Analysis of Associations Between Health-Promoting Lifestyle Profile-II and Teacher- and School-Level Variables**

Variable	HPLP-II			IR			N			PA			SM			SG			HR		
	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p	Coef.	SE	p
Intercept	91.73	5.65	<.001	20.34	1.08	<.001	16.42	1.07	<.001	10.85	1.26	<.001	15.44	1.10	<.001	17.37	1.30	<.001	11.30	1.23	<.001
Teacher level																					
Gender (ref = male)																					
Female	−.13	.95	.891	1.15	.22	<.001	.65	.23	.005	−1.89	.24	<.001	−.32	.21	.119	.05	.24	.837	.24	.25	.321
Age (ref = less 40)																					
40-49	−1.22	.78	.119	−.84	.17	<.001	.03	.16	.860	.04	.21	.834	−.23	.20	.243	−.26	.21	.202	.12	.21	.579
50 above	2.14	1.17	.067	−.78	.24	.002	.27	.26	.304	1.45	.31	<.001	.19	.25	.453	.37	.30	.210	.72	.28	.010
Education level (ref = Doctoral)																					
Master	3.21	.83	<.001	.08	.16	.639	.28	.17	.103	.83	.21	<.001	.48	.17	.006	.74	.21	.001	.84	.20	<.001
Perceived management support	.98	.08	<.001	.17	.02	<.001	.12	.01	<.001	.17	.02	<.001	.12	.02	<.001	.16	.02	<.001	.24	.02	<.001
School level																					
School location (ref. = Urban)																					
Rural	−.67	1.06	.526	−.57	.21	.009	−.03	.20	.898	−.01	.25	.982	.23	.20	.268	−.29	.25	.233	−.06	.27	.832
Indigenous villages	−4.49	2.80	.111	−.48	.54	.382	−.91	.55	.102	−.94	.56	.095	−.82	.46	.074	−.40	.54	.452	−1.07	.76	.158
Transformational Leadership	.38	.18	.039	−.002	.031	.940	.10	.03	.005	.08	.04	.030	.08	.03	.024	.08	.04	.075	.05	.04	.264
HPS awards (ref. = no award)																					
Gold	−.56	6.14	.928	−.53	1.02	.600	.32	.51	.526	.99	.88	.266	−.30	1.54	.847	−.89	1.39	.523	.39	1.15	.737
Silver	−2.44	2.69	.367	−.74	.57	.195	−.29	.35	.407	.13	.52	.801	.08	.47	.870	−.74	.57	.200	−.98	.56	.084
Bronze	−1.46	1.07	.178	−.34	.20	.098	−.19	.20	.343	.13	.27	.636	−.43	.20	.032	−.42	.26	.110	−.26	.27	.344
Non-participating	1.25	1.58	.431	.18	.33	.582	.24	.28	.392	.28	.32	.379	.02	.31	.940	.38	.35	.274	.16	.36	.654

The 6 subscales of the HPLP-II: Interpersonal Relations (IR), Nutrition (N), Physical Activity (PA), Stress Management (SM), Spiritual Growth (SG), and Health Responsibility (HR). Coef., Coefficient; SE, Standard Error; p = p-value.

of intervention strategies aimed at improving the organizational health climate, thereby promoting teachers' engagement in health-promoting lifestyles.

Transformational leadership focuses on intrinsic needs and motivation and directly influences subordinates' satisfaction with their leader and indirectly affects communication openness and mission and role clarity.[29] Past studies have suggested that improved school effectiveness is a result of a school principal's characteristics, including having a clear vision, providing a democratic environment for teachers, and providing incentives for teachers and students.[30] Consequently, transformational leadership is associated with reduced levels of employee depression and burnout[18] and turnover intention.[31] Similarly, Arokiasamy et al[32] and Cansoy[33] emphasized that a school principal's transformational leadership is strongly linked to teachers' job satisfaction.

Previous studies have identified work-related factors, such as hours worked per week, teaching load, teaching experience, and teacher role, as being associated with various health behaviors and psychosocial health among teachers.[34,35] When exploring the mechanisms by which changes to work-related factors can improve teachers' health, principals play a key role, particularly through: (1) social support and relationship quality, and (2) leadership style.[36] Our findings demonstrate a positive relationship between transformational leadership and teachers' high HPLP-II scores, particularly in the domains of Nutrition, Physical Activity, and Stress Management. Furthermore, this study confirmed the positive association between transformational leadership and perceived management support (see Table S1), suggesting that this relationship could be explored in greater detail in future research.

Although past research has indicated that teachers are willing to sustain HPS implementation with the school principal's support,[37,38] our findings showed that a school's performance in promoting the HPS program (ie, HPS accreditation awards for high-performing schools) was not significantly associated with improving teachers' health-promoting lifestyles. Lemrle (2005)[39] also noted that the HPS accreditation program focuses on students' health outcomes, not teachers'. So, although the teachers in high HPS-ranking schools experienced lower job demands and psychological distress, there were no significant differences between high or low HPS-ranking schools and teachers' healthy habits, for example, in terms of maintaining a healthy weight and good diet, undertaking physical activity and preventive health screening, and low or no alcohol consumption or smoking behaviors. In the past, the Ministry of Education in Taiwan has also primarily focused its HPS policies on students. However, for a truly effective HPS program, all teachers must possess health literacy and lead healthy lifestyles and serve as role models for their students. Taiwan's Ministry of Education and Ministry of Health and Welfare advocacy for new HPS policy emphasizes not only strengthening teachers' health pedagogical skills and administrative management abilities but also prioritizing teacher health and well-being.[40] Therefore, future research could assess how

attention to staff health outcomes in HPSs influences student health outcomes.

IMPLICATIONS FOR SCHOOL HEALTH POLICY, PRACTICE, AND EQUITY

The study results lead to several implications for school health policy and practice. Focusing on strengthening organizational elements, government education agencies could spearhead leadership development programs that empower school principals to take ownership of fostering a healthy work environment. Additionally, schools could implement strategies to enhance worksite support and utilize HPS awards as incentives for teachers who actively participate in health-promoting activities. For example, schools could allocate spaces and facilities for physical activity and stress relief for teachers, establish health clubs to foster participation, and collaborate with community healthcare services to offer affordable and convenient health check-ups for educators. By encouraging teacher participation in health promotion activities, schools may qualify for higher HPS awards. Schools could also establish robust communication channels through curriculum discussion meetings, administrative meetings, or school community platforms, while fostering collaborative efforts between school leaders and teachers on health-related issues.

Limitations

This study has several limitations. First, all participants were recruited from the Health Promoting School Accreditation Program in Taiwan, which has potentially introduced selection bias. Schools that chose to participate in the program are likely to already prioritize health promotion, which may introduce a bias toward more favorable results. Second, the voluntary participation of teachers and directors could have resulted in self-selection bias, potentially inflating the observed correlations between perceived management support, transformational leadership, and HPLP-II results. Future research could mitigate these issues by employing random sampling of schools to provide a more accurate representation of diverse educational settings. Lastly, the cross-sectional design of this study limits the ability to draw definitive causal conclusions.

Conclusion

The study revealed that a teacher's health-promoting lifestyle is significantly correlated to perceived management support and transformational leadership. This study makes a novel contribution by providing empirical evidence linking organizational management factors to teachers' health-promoting behaviors. These findings highlight the need for school principals to enhance organizational support for health promotion and strengthen the school's health climate through effective leadership and recognition initiatives like HPS accreditation. By doing so, schools can create environments that prioritize teachers' well-being, which in turn positively associates with students' health and academic performance. Future research could examine the specific mechanisms through which transformational leadership and management support influence teachers' healthy lifestyles. Additionally, studies could explore the long-term effects of health-promoting initiatives on both teachers and students, while investigating how varying school environments and leadership styles optimize health outcomes at the organizational level.

Human Subjects Approval Statement. This study was approved by the Institute Research Ethic Board of Fu Jen Catholic University (No. C102084) and consent forms were obtained from all participants.

Conflict of Interest

The authors have no conflicts of interest to disclose.

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SUPPORTING INFORMATION

The following Supporting Information is available for this article:

Table S1. Associations between perceived management support and transformational leadership.

Additional supporting information may be found online in the Supporting Information section at the end of the article.