

Assessing the Effects of a Statewide Training Initiative on Local School Wellness Policies

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Local district wellness policies are designed to ensure that schools support student health by providing a healthy nutrition environment and opportunities for physical activity. The Kansas State Department of Education (KSDE) developed a 5-year initiative to strengthen wellness policies across their state by offering regional wellness workshops and providing coaches to work with individual districts. KSDE also developed the Wellness Impact Tool (WIT), a self-report measure districts use to document their practices at each school level related to Nutrition, Nutrition Promotion, Physical Activity, and Integrated School-Based Wellness. Kansas districts (N = 286) completed the WIT annually over a 5-year period. The current study evaluates the KSDE wellness initiative by examining the changes in WIT scores over time and by school level, and testing whether greater engagement with wellness supports (i.e., workshops attended and coaching sessions received) predicts higher WIT scores. The findings indicate that district WIT scores increased over the 5-year initiative. Overall, high schools scored higher than elementary or middle schools on Nutrition items, and elementary schools scored higher than other school levels in the domains of Nutrition Promotion, Physical Activity, and Integrated School-Based Wellness. The number of wellness supports utilized by districts each year were significant predictors of subsequent WIT scores. The KSDE's initiative to support Kansas school districts was associated with significant improvements in the quality of wellness practices across the state and provides a model for consideration by other states.

Keywords: nutrition; health promotion; physical activity/exercise; school health

► BACKGROUND

Local school district wellness policies are designed to ensure that schools provide a healthy nutrition environment and opportunities for physical activity to support student health. School wellness policies have been required since 2006 by federal law for all districts participating in federal school meal programs (Child Nutrition and WIC Reauthorization Act of 2004). In compliance with the Healthy Hunger-Free Kids Act, additional regulations for wellness policies were released in 2016 (Food and Nutrition Service, U.S. Department of Agriculture, 2016). Current regulations require that districts create a committee of stakeholders and write a policy that addresses multiple domains of health promotion, including nutrition education, school meals, food sold or served outside of school meals, physical education, opportunities for additional physical activity, limits to unhealthy food marketing, and a plan to review and

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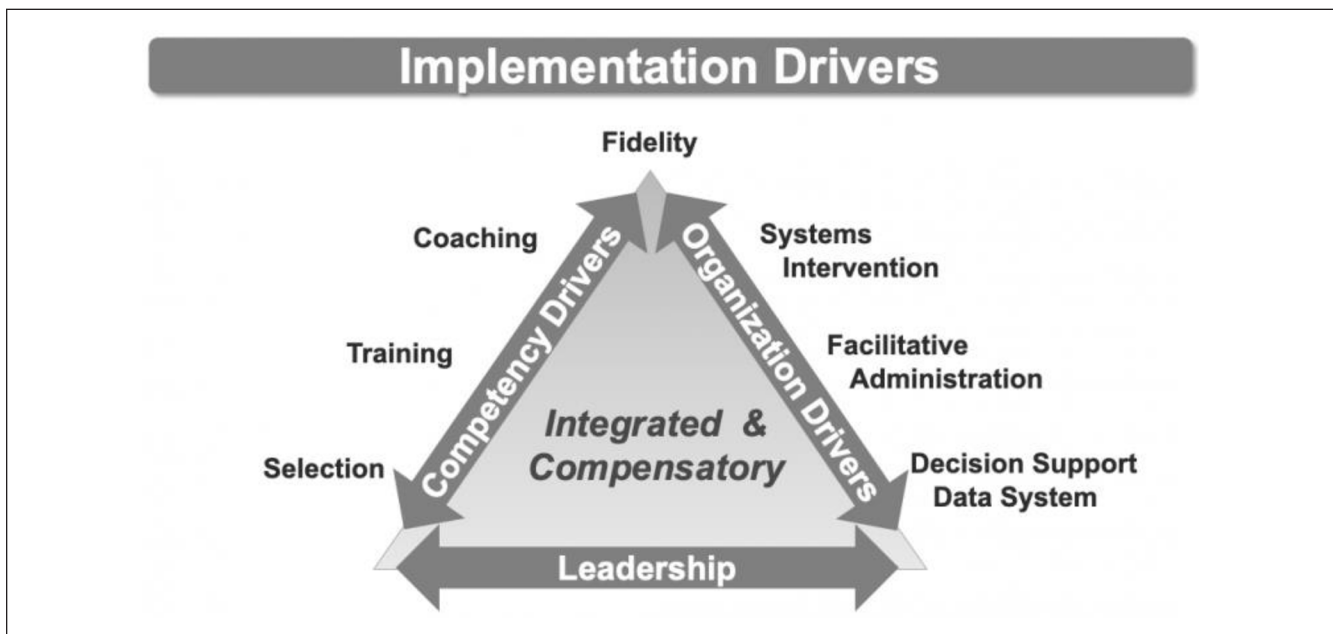


FIGURE 1 The Implementation Drivers Framework of the Active Implementation Frameworks (National Implementation Research Network, 2020)

revise the policy in regular intervals (Food and Nutrition Service, U.S. Department of Agriculture, 2016).

The state agency that administers the federal school meal programs oversees district compliance with wellness policy requirements and often offers technical assistance. This support is needed because many districts have substantial room to improve (Metos & Nanney, 2007; Piekarz et al., 2016). One strategy employed by several states is creating a model policy; however, the research suggests that this does not improve the strength and comprehensiveness of district wellness policies (Eggert et al., 2018; Smith et al., 2012). Recently, Meendering and colleagues assessed the model policies from 34 states and found that although most of them addressed the federal regulations, many lacked language that reflects best practices, resulting in low scores on a measure of wellness policy strength (Meendering et al., 2021).

Another technical assistance strategy is to evaluate district policies and provide individualized feedback. In Wisconsin, a team of researchers working with the state education agency collected and scored district policies using a standard measure called the WellSAT (Schwartz et al., 2020), and sent reports to districts with tailored policy improvement recommendations (Skalitzky et al., 2022). Similarly, the state SNAP-Ed agencies in Arizona score policies with the WellSAT and provided tailored feedback to districts (LeGros et al., 2019). There is

evidence that this process has resulted in stronger policies over time (LeGros et al., 2020).

Implementation science provides a framework to guide state-level efforts to improve district wellness policies. Specifically, the Active Implementation Drivers Framework suggests that Leadership, Organization, and Competency Drivers are necessary for successful implementation (see Figure 1; National Implementation Research Network, 2020). Engaged leadership that supports the implementation process is the foundation of this framework. Organization Drivers create a supportive environment in which the implementation can take place. These include creating systems to collect and analyze data about the implementation process and outcomes that can be used in decision-making (Decision Support Data Systems); providing administrative support for implementation and removing internal barriers (Facilitative Administration); and working with systems outside of the organization to remove external barriers (Systems Interventions). Finally, Competency Drivers increase individuals' ability to advance the implementation process. These include recruiting individuals who have the skills and knowledge necessary for implementation (Selection); providing staff with the skills and knowledge needed (Training); providing ongoing support following training to staff who are learning new skills (Coaching); and assessing the extent to which

TABLE 1
Alignment of Components of Kansas' Initiative to Strengthen Wellness Policies With Selected Implementation Drivers From the Active Implementation Drivers Framework

<i>Implementation drivers</i>	<i>Components of Kansas initiative</i>
Organization Drivers	
Decision Support Data Systems	<ul style="list-style-type: none"> • Develop Wellness Impact Tool • Require annual reporting • Require districts self-evaluate progress toward model practices and policies
Facilitative Administration	<ul style="list-style-type: none"> • None identified
Systems Interventions	<ul style="list-style-type: none"> • Facilitate panel discussions at regional workshops in which districts identify barriers to improving wellness policies and practices and collaborate on solutions to overcome those barriers
Competency Drivers	
Selection	<ul style="list-style-type: none"> • None identified
Training/Professional Learning	<ul style="list-style-type: none"> • Provide workshops to teach districts how to improve their wellness policies and practices
Coaching	<ul style="list-style-type: none"> • Train wellness coaches • Offer coaching to districts
Fidelity	<ul style="list-style-type: none"> • Require districts to self-monitor wellness practices by requiring annual completion of the Wellness Impact Tool
Leadership Drivers	
Technical	<ul style="list-style-type: none"> • Obtain funding to pay coaches and support initiative
Adaptive	<ul style="list-style-type: none"> • Provide support and time (through regional workshops) to solve problems relating to improving wellness policies and practices

the implementation is occurring as intended (Fidelity Assessment).

The Kansas State Department of Education (KSDE) developed a comprehensive system for providing technical support to school districts in tracking and strengthening their wellness policies (Brinkman & Ladd, 2015; Rieger & Brinkman, 2019). To understand the theoretical underpinnings of how this initiative might work, we examined it through the lens of the Implementation Drivers Framework described above, classifying their efforts as Organization, Competency, and Leadership Drivers (see Table 1).

First, KSDE developed an online reporting system called the Kansas Wellness Impact Tool (WIT; Child Nutrition & Wellness, KSDE, 2018) based on the Kansas School Wellness Policy Model Guidelines (Child Nutrition & Wellness, KSDE, 2017). Districts are required to use the WIT to monitor, evaluate, and report the implementation of their wellness policies each academic year. Federal regulations require monitoring, evaluating, and reporting on local wellness policies (Healthy, Hunger-Free Kids Act of 2010), and providing tools to assist districts in this process may facilitate

wellness policy implementation (Turner et al., 2021). Thus, the WIT acts as both a decision support data system and a fidelity assessment.

Second, KSDE provided ongoing workshops throughout the state to help districts update and strengthen their policies. During the workshops, districts learned from each other how to overcome barriers such as providing local foods in urban areas. Thus, the workshops facilitated systems interventions and provided training. Third, KSDE provided a cadre of coaches throughout the state who provided additional, individualized technical assistance to districts (Child Nutrition & Wellness, KSDE, 2016). Finally, KSDE provided leadership throughout the initiative by supporting districts through technical assistance and obtaining funding.

The present study is an external evaluation of the KSDE wellness initiative. First, we analyzed the annual WIT scores to assess any changes over the 5 years of the initiative and whether WIT scores vary by school level. Second, we tested the hypothesis that districts that participated in the initiative by attending workshops and working with wellness coaches would exhibit greater WIT scores over time.

► METHODS

Measures

KSDE developed the WIT and requires each federal school meal sponsor to complete it in the spring of each academic year using an online platform. The present study uses the WIT scores for Kansas school districts ($N = 286$) over the 5 years from 2014–2015 through 2018–2019. KSDE provided all data. These analyses included only public school district sponsors and excluded other types of sponsors.

The full WIT measure is in Supplemental Appendix A. Unlike the WellSAT, which is a measure that assesses written school wellness policies (Schwartz et al., 2020), the WIT is a district self-report measure of policy implementation and practices, so we will refer to the components as policy/practice when describing the tool. The measure is organized into four subscales: (a) Nutrition, (b) Nutrition Promotion and Education, (c) Physical Activity, and (d) Integrated School-Based Wellness. Each subscale is further divided into subcategories (e.g., Nutrition is divided into General Guidelines; Other Child Nutrition Programs; During the School Day; Breakfast; Lunch; and All Food Sold in Schools) and the subcategories contain specific topics, which are listed along the left side of the table in Supplemental Appendix A. For each of these topics, the WIT articulates three levels or components of a policy/practice for each topic area. The lowest level is called Implementing; these reflect the minimum requirements based on federal and state policies. The moderate level is called Transitioning, which represent policies and practices beyond the minimum, but not yet best practices. The highest level is called Modeling; these are the strongest recommended policies and practices.

Figure 2 presents the first page of the current school wellness policy guidelines on which the WIT is based. Although the WIT levels are often progressive, districts must score themselves for each level. Therefore, the district wellness representative reviews all of the policy/practice items in each row and reports the status of their schools as (a) “policy in place” if they have fully implemented the policy/practice; (b) “developing policy” if they are working toward this policy/practice but are not entirely compliant; or (c) “not in policy,” if the activities described are not occurring in schools. Districts complete the WIT three times to report separately for elementary, middle, and high school levels.

Measure Development

KSDE changed the WIT slightly after the 2016–2017 academic year. To assess changes in wellness policies

over the full 5 years of the project, we reviewed the 150 items of the 2015–2017 WIT measure and the 168 items of the 2018–2019 WIT measure side by side and identified the items that remained the same, or had only minimal wording changes, during the full 2015–2019 period. Through this process, we identified 138 items to include in our analysis. We clustered these items into the same four subscales as the WIT: Nutrition, Nutrition Promotion, Physical Activity, and Integrated School-Based Wellness. To score the tool, we assigned points to each status level: 0 = not in policy; 1 = developing policy; and 2 = policy in place. Supplemental Appendix A contains all of the WIT items included in the current analyses.

To assess internal reliability, we conducted Cronbach’s alpha tests for each subscale for each grade level. The Nutrition subscale included 50 items ($\alpha = .833-.900$); the Nutrition Promotion subscale included 19 items ($\alpha = .864-.881$); the Physical Activity subscale included 44 items ($\alpha = .899-.907$); and the Integrated School-Based Wellness subscale included 25 items ($\alpha = .891-.912$). These results indicate that the items within each subscale can be combined to capture a specific construct.

Subscale Scores—Grade Level. We calculated the subscale scores using the mean across all items on the subscale (range: 0–2) separately for the elementary (ES), middle (MS), and high school (HS) responses for each district. We used the mean instead of the sum because some items applied only to one or two grade levels and we wanted comparable scores for elementary, middle, and high school level policies.

Subscale Scores—District Level. For some analyses (as described below), we took the mean of the WIT subscale scores for each school level (i.e., ES, MS, and HS) to create one district-level subscale score.

Overall WIT Scores. Finally, we added the four district-level subscale scores to create one overall WIT score for each district.

Wellness Support Scores. Workshops were offered to districts each year and individual coaching visits were offered to districts scheduled for their triennial review each year. All Kansas districts were offered both workshops and a coaching visit at some point during the study. To measure each district’s participation in workshops and coaching, we created a cumulative score by adding up all the workshops attended and visits from a coach from the 2014–2015 school year to the year of interest.

Kansas School Wellness Policy Guidelines – Nutrition

	Implementing	Transitioning	Modeling
General Guidelines	Food safety training	All school food service personnel receive required food safety training at a minimum of every 3 years.	All school food service personnel receive food safety training annually.
	Cafeteria	The dining area has seating to accommodate all students during each serving period.	High School: Closed campus. Students must remain at school during lunch periods.
	Adults in dining area	The dining area has adequate adult supervision.	Adults model healthy eating in the dining areas and encourage students to taste new and/or unfamiliar foods.
	Student mealtime conversations	The students are allowed to converse with one another at least part of the mealtime.	The students are allowed to converse during the entirety of the mealtime.
	Discipline in dining area	Reimbursable meals and/or parts of a reimbursable meal are not withheld or denied as a disciplinary action.	Students being disciplined are NOT seated in a separate location.
Other Child Nutrition Programs	Smarter Lunchroom	One "Smarter Lunchroom" or Behavioral Economics technique is used on the serving line to encourage healthy choices by students.	Three "Smarter Lunchroom" or Behavioral Economics techniques are used on the serving line to encourage healthy choices by students.
	Identifying foods	Content of reimbursable lunch and breakfast is identified near or at the beginning of the serving line(s).	A Kansas product is served in the school meals program at least one time per week.
	Additional child nutrition program participation	Meals and snacks served under the USDA At-Risk Afterschool Meals, Afterschool Snack Program, Fresh Fruit & Vegetable Program, and/or Summer Food Service Program comply with all federal regulations and state policies.	Participate in two or more of the four programs. (At-Risk Afterschool Meals, Afterschool Snack Program, Fresh Fruit & Vegetable Program, or Summer Food Service Program)
	Drinking water	Students have access to free drinking water throughout the school day, including during meal service. Hygiene standards for all methods delivering drinking water will be maintained.	Students have clear/translucent individual water bottles in the classroom where appropriate.
	Nutrition standards for snacks	District develops nutritional standards for non-sold food and beverages made available on school campus during the school day.	Non-sold foods and beverages meet Smart Snacks in School "All Foods Sold in Schools" Standards. The focus of classroom celebrations is not on food.
During the School Day	Food as a reward	Schools provide staff information on non-food rewards.	Food is not used as a reward in district schools unless the food meets Smart Snacks in School "All Foods Sold in Schools" Standards.
	Fast food	Meals purchased at fast food outlet to be consumed at school must not be brought to school in their original containers. Caffeinated beverages are not allowed in sack lunches to be consumed in the cafeteria. (Elementary/Middle School)	No meals purchased at fast food outlets are consumed at mealtime in cafeteria.

Child Nutrition & Wellness, Kansas State Department of Education, www.kn-eat.org

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FIGURE 2 First Page of the Current Kansas School Wellness Policy Model Guidelines, the Basis for the Wellness Impact Tool (Child Nutrition & Wellness, Kansas State Department of Education, 2017)
 Note. USDA = U.S. Department of Agriculture.

TABLE 2
Mean Wellness Impact Tool Scores Across Grade Levels and Program Years, All Kansas Public School Districts, 2014–2015 Through 2018–2019 School Years

<i>Level</i>	<i>2014–2015 M (SD)^a</i>	<i>2015–2016 M (SD)</i>	<i>2016–2017 M (SD)</i>	<i>2017–2018 M (SD)</i>	<i>2018–2019 M (SD)</i>
Overall summary score					
All	4.20 (1.23)	4.40 (1.22)	4.45 (1.19)	4.47 (1.24)	4.59 (1.22)
Nutrition					
ES	1.32 (0.29)	1.38 (0.27)	1.38 (0.27)	1.44 (0.28)	1.47 (0.27)
MS	1.32 (0.30)	1.38 (0.27)	1.39 (0.27)	1.43 (0.28)	1.47 (0.27)
HS	1.34 (0.28)	1.40 (0.27)	1.42 (0.25)	1.45 (0.27)	1.48 (0.25)
Nutrition Promotion					
ES	1.01 (0.43)	1.08 (0.43)	1.10 (0.42)	1.09 (0.43)	1.13 (0.42)
MS	1.00 (0.43)	1.05 (0.44)	1.07 (0.42)	1.07 (0.42)	1.10 (0.41)
HS	1.00 (0.43)	1.06 (0.44)	1.07 (0.42)	1.08 (0.42)	1.11 (0.40)
Physical Activity					
ES	1.18 (0.34)	1.23 (0.32)	1.24 (0.32)	1.24 (0.33)	1.27 (0.32)
MS	1.14 (0.36)	1.17 (0.34)	1.18 (0.34)	1.18 (0.35)	1.21 (0.35)
HS	1.10 (0.36)	1.12 (0.35)	1.13 (0.35)	1.14 (0.36)	1.16 (0.34)
Integrated School Wellness					
ES	0.74 (0.40)	0.79 (0.39)	0.81 (0.40)	0.80 (0.42)	0.82 (0.41)
MS	0.71 (0.40)	0.75 (0.38)	0.76 (0.39)	0.78 (0.42)	0.81 (0.41)
HS	0.70 (0.40)	0.74 (0.39)	0.76 (0.39)	0.77 (0.42)	0.80 (0.41)

Note. ES = elementary school; MS = middle school; HS = high school.

a. The range is 0 to 8 possible points for overall summary scores and 0 to 2 possible points for subscale scores.

Analytic Plan

All analyses were performed in IBM SPSS Statistics version 27. Statistical significance for all tests was set at $\alpha = .05$. To adjust for multiple planned comparisons, we used Bonferroni corrections. Missing values were excluded listwise.

We used a repeated-measures analysis of variance (ANOVA) with overall WIT scores to assess whether there was an overall improvement in wellness policies during the 5-year period. Next, we examined each of the grade-level subscale scores for (a) changes over time and (b) across grade levels using a two-way, repeated-measures ANOVA.

Finally, we used linear regression analyses to assess the effect of the intervention on WIT scores over time to assess whether districts that participated in more workshops and coaching subsequently reported higher subscale scores. The district-level subscale scores were the dependent variables, and the predictors included Wellness Support scores, the 2014–2015 baseline score for each subscale, the number of students enrolled in each district, the percent of students qualifying for free and reduced-price (FRP) lunches in each district, and

time. Data for the district characteristics were obtained from the National Center for Education Statistics (NCES) data set (U.S. Department of Education, NCES, Common Core of Data, 2020a, 2020b). The distribution of district enrollment was highly skewed, so we log-transformed the enrollment data before inclusion in the regression model. To account for the nested structure of our data (i.e., within districts), we report robust and clustered standard errors.

► RESULTS

Of the 286 districts included in our study, nine (3%) were in cities, 11 (4%) were suburban, 70 (24%) were in towns, and 196 (69%) were rural. Mean enrollment was 1,739 ($SD = 4\,486$). The mean percentage of students qualifying for FRP lunches was 47% ($SD = 14.8$).

Changes Across Time and Between School Levels

The average overall scores across time are displayed in Table 2. The variable Time was significant, $F(1.46, 410.17) = 11.40$, $p < .001$, indicating that total scores increased over the 5-year intervention. Pairwise

comparisons revealed that compared with 2014–2015, WIT scores were significantly higher in 2015–2016 ($p < .001$); 2016–2017 ($p < .001$); 2017–2018 ($p = .007$); and 2018–2019 ($p < .001$). Scores also increased significantly from 2017–2018 to 2018–2019 ($p = .001$).

The average for each subscale score (range: 0–2) across time and by grade level are in Table 2. The effect of time was significant for all four subscales, revealing that scores increased over the 5 years of data collection. The effects of grade level, and the interaction between grade level and time, varied for each analysis and are described below by subscale.

For the Nutrition subscale, there was a significant effect of time, $F(1.75, 453.26) = 30.95$, $p < .001$, and of level, $F(1.70, 440.66) = 8.31$, $p = .001$. Pairwise comparisons revealed that high schools scored higher than elementary or middle schools ($p = .005$ and $p < .001$, respectively), and that Nutrition scores for all levels increased over time for all years except for 2015–2016 to 2017–2018 ($p > .99$; 2015–2016 to 2018–2019, $p = .02$; 2016–2017 to 2018–2019, $p = .05$; $p < .001$ for all other comparisons). There was no significant interaction between time and grade level, $F(3.42, 885.18) = 2.14$, $p = .09$, indicating that the effects of time did not differ across grade levels.

The Nutrition Promotion subscale showed a significant effect of time, $F(1.46, 377.09) = 6.67$, $p = .004$, and of level, $F(1.67, 433.17) = 10.13$, $p < .001$. Pairwise comparisons revealed that elementary schools scored higher than middle and high schools ($p < .001$ and $p = .02$, respectively), and that Nutrition Promotion scores for all levels increased from 2014–2015 to 2015–2016 ($p < .001$), 2016–2017 ($p < .001$), and 2018–2019 ($p = .001$). There was no significant interaction between time and grade level, $F(3.35, 867.43) = .78$, $p = .52$, again indicating that the effects of time did not differ across grade levels.

For the Physical Activity subscale, there was a significant effect of time, $F(1.62, 418.90) = 4.06$, $p = .03$, and of level, $F(1.77, 456.08) = 86.03$, $p < .001$. Pairwise comparisons revealed that elementary schools received the highest Physical Activity scores (ES vs. MS, $p < .001$; ES vs. HS, $p < .001$), while high schools received the lowest scores (HS vs. ES, $p < .001$; HS vs. MS, $p < .001$). Scores for all levels increased from 2014–2015 to 2015–2016, 2016–2017, and 2018–2019 ($p = .02$, $p = .01$, and $p = .03$, respectively), and from 2017–2018 to 2018–2019 ($p = .05$). There was no significant interaction between time and grade level, $F(3.57, 921.81) = 1.62$, $p = .17$, indicating that the effects of time did not differ across grade levels.

For the Integrated Wellness subscale, there was a significant effect of time, $F(1.45, 366.11) = 5.08$, $p = .014$, and

of level, $F(1.46, 369.97) = 45.30$, $p < .001$. Furthermore, there was a significant interaction between time and grade level, $F(3.07, 776.82) = 5.24$, $p = .001$. Examination of the estimated marginal means and profile plots revealed that elementary schools started with higher scores than middle and high schools, but middle and high school scores increased faster over time.

Effect of Workshops and Coaching on WIT Scores

The range in Wellness Support scores at the end of the study was 0 to 8 and the mean score (i.e., number of workshops and coaching visits) was 3.8 ($SD = 1.7$). Of 286 districts, 284 (99.3%) had received at least one wellness support by the end of the study.

In the regression analyses for the Nutrition and Integrated Wellness subscales, we found that the cumulative Wellness Support score was a significant predictor of WIT scores (Table 3). The more times a district received a wellness coaching visit or attended a wellness workshop over time, the higher their scores were likely to be in each WIT category.

Results of the multiple linear regression indicated a significant collective effect of the predictors on Nutrition scores, $R^2 = .405$, $F(5, 284) = 55.74$, $p < .001$. Further analysis of the individual predictors indicated the number of wellness supports received and baseline Nutrition scores were significant. Results of the regression also indicated that there was a significant collective effect of the predictors on Nutrition Promotion scores, $R^2 = .430$, $F(5, 284) = 85.72$, $p < .001$. For these scores, only baseline Nutrition Promotion scores were significant predictors. There was a collective significant effect of the predictors on Physical Activity scores, $R^2 = .383$, $F(5, 284) = 47.13$, $p < .001$, but again, only baseline scores were significant. Finally, there was a significant collective effect of the predictors on Integrated Wellness scores, $R^2 = .410$, $F(5, 284) = 47.97$, $p < .001$, and the number of wellness supports received, FRP rates, and baseline Integrated Wellness scores were significant.

► DISCUSSION

School districts in Kansas have reported significant progress in improving school wellness policies and practices over this 5-year initiative. The KSDE provided individual wellness coaches and offered group wellness workshops annually. Most districts in the state participated in at least one of the workshops, took advantage of the individual coaching support, or both. Furthermore, the number of wellness supports received by districts was associated with modest but statistically significant improvements in wellness policies and practices, even

TABLE 3
Determinants of Districts' Wellness Impact Tool subscale Scores, All Kansas Public School Districts, 2014–2015
Through 2018–2019 School Years

<i>Regressor</i>	<i>B (95% CI)</i>	<i>p value^a</i>
Nutrition		
Number of wellness supports ^b	0.013 (0.000, 0.025)	.04
Time	0.016 (0.001, 0.030)	.04
District enrollment	0.006 (–0.008, 0.020)	.38
Percent of students qualifying for FRP lunch	0.100 (–0.017, 0.217)	.09
2014–2015 baseline Nutrition score	0.580 (0.503, 0.656)	<.001
Nutrition Promotion		
Number of wellness supports	0.014 (–0.006, 0.035)	.16
Time	0.002 (–0.023, 0.027)	.89
District enrollment	0.002 (–0.019, 0.024)	.82
Percent of students qualifying for FRP lunch	0.013 (–0.159, 0.186)	.88
2014–2015 baseline Nutrition Promotion score	0.643 (0.576, 0.709)	<.001
Physical Activity		
Number of wellness supports	0.012 (–0.004, 0.028)	.15
Time	0.001 (–0.019, 0.020)	.93
District enrollment	0.008 (–0.013, 0.029)	.45
Percent of students qualifying for FRP lunch	0.087 (–0.087, 0.260)	.33
2014–2015 baseline Physical Activity score	0.609 (0.523, 0.694)	<.001
Integrated Wellness		
Number of wellness supports	0.028 (0.005, 0.050)	.02
Time	–0.003 (–0.029, 0.023)	.82
District enrollment	0.013 (–0.009, 0.036)	.24
Percent of students qualifying for FRP lunch	0.185 (0.025, 0.346)	.02
2014–2015 baseline Integrated Wellness score	0.619 (0.518, 0.721)	<.001

Note. CI = confidence interval; FRP = free and reduced-price.

a. Values of *p* are calculated using multiple linear regressions. Bonferroni corrections are used to adjust for multiple comparisons. Statistical significance is set at $\alpha = .05$. ^b Wellness supports are the cumulative number of wellness workshops attended and wellness coaching visits received by a school district.

after accounting for baseline scores, district enrollment, and FRP rates.

We also examined the support KSDE offered through the Active Implementation Drivers framework. We found that their efforts addressed many but not all of the Organization, Competency, and Leadership Drivers components. The components that were not addressed reveal opportunities for improvement for future initiatives. For example, KSDE's initiative did not include changes to Selection, which refers to recruiting and hiring staff who can assist in implementation. Future initiatives might encourage or incentivize employees who have the knowledge, skills, or motivation to improve wellness policies and practices to join their district wellness committees. In addition, the initiative

did not engage in specific efforts to help district administration facilitate improvements in wellness policies and practices (i.e., Facilitative Administration). Future initiatives might offer support to help incoming superintendents and principals continue their predecessors' improvements to wellness policies and practices, as KSDE Child Nutrition and Wellness staff and coaches identified district administrator turnover as a significant barrier to progress in this area.

Our analysis of WIT scores across time and grade levels showed that scores on every subscale increased significantly over time. The findings concerning school level varied. For the Nutrition subscale, high schools scored higher than elementary or middle schools. For Physical Activity, Nutrition Education and Promotion, and

Integrated School-Based Wellness, elementary schools scored the highest. These findings suggest that some policies may be easier to implement at certain school levels.

The regression analyses examined the relationship between district demographics (district enrollment and district FRP rate), the number of Wellness Support activities the district engaged in, and the district-level WIT score for each subscale, with 2014–2015 WIT scores used as a baseline. The findings indicate that time and demographic variables are important. The Nutrition subscale increased over time, and districts with higher FRP rates were more likely to have higher scores on Integrated School-Based Wellness than those with lower FRP rates. The primary analysis of interest held all these other factors constant and tested the unique relationship between Wellness Support and the outcome variables and found that the more Wellness Support a district had, the higher their WIT scores on Nutrition and Integrated School-Based Wellness. This finding suggests that efforts by the KSDE to support districts led to significantly higher scores in these areas than one would predict based on demographic characteristics or time alone.

We also found very strong relationships between baseline WIT scores and later WIT scores. It is noteworthy that 2014–2015 was not a true “baseline,” as wellness coaching started during that school year and annual wellness workshops began in the 2012–2013 school year. However, by including 2014–2015 WIT scores as a predictor of subsequent WIT scores, we account for other district-level differences that may correlate with future WIT scores and participation in wellness support. It is not surprising that districts with a historical desire or ability to implement wellness practices and policies will continue to grow in this area. However, this reveals a challenge for improving wellness in schools statewide: districts that do not have the resources or the motivation to adopt strong wellness policies and implement best practices continue to trail other districts with similar enrollments and FRP rates. Future research examining the barriers to strong wellness policies and practices may provide specific recommendations for supporting districts with persistently lower WIT scores.

The absence of pre-intervention baseline data limited our study; thus, we were unable to determine any improvements made during the first year of the initiative. Our study was also limited to a single state, and thus findings may not be generalizable, especially in states with large, urban districts. Third, many of the Kansas School Wellness Policy Guidelines are worded to assess practices, but wellness committees completing the WIT are asked to indicate whether each statement is addressed “in their policy.” Other research in this field specifically distinguishes between scores of written,

board-approved wellness policies (Schwartz et al., 2019) and scores of the *implementation* of wellness practices consistent with the written policy (see Schwartz et al., 2020). The ambiguity in the WIT makes it challenging to determine which increases in scores indicate improvements in policies, practices, or both. A final limitation was the lack of a control group in our study, since this intervention was statewide.

One of the strengths of this study is the use of statewide data. All 286 public school districts in Kansas were included in our study, giving a picture of wellness policies in urban and rural districts alike. A second strength was that districts reported on elementary, middle, and high schools separately. Third, the WIT was scored by district wellness committees who might better assess the state of policies and practices within their districts than outside scorers (although they may also be at higher risk of bias than someone outside of the district). Finally, the longitudinal nature of the study enabled us to track the improvement of wellness policies over time.

► IMPLICATIONS FOR PRACTICE, POLICY, AND RESEARCH


Efforts to improve district wellness policies require attention to Implementation Drivers at district and state levels. State education departments can provide technical assistance via coaching, training, data support systems, and facilitative leadership to positively affect wellness policies and practices. To fund such projects, states might seek outside funders. School wellness stakeholders should be aware that some policies may be easier to adopt at the elementary level than at higher grade levels. Finally, future research should examine barriers to adopting strong wellness policies and seek solutions for supporting districts that struggle to improve weak policies.

► CONCLUSION

Overall, Kansas school districts have made progress in improving wellness policies and practices over the past 5 years. KSDE’s wellness coaching and workshops were well-attended by districts across the state and, the more a district participated, the more progress they made in strengthening Nutrition and Integrated Wellness in their wellness policy. States that wish to support efforts to improve local school wellness policies may consider the benefits of offering technical assistance to districts across several years.

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SUPPLEMENTAL MATERIAL

Supplemental material for this article is available online at <https://journals.sagepub.com/home/hppp>.

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