prevention by offering opportunities for students to learn and enact healthy food and physical activity behaviors, and by providing a structured environment that supports the maintenance of energy balance and weight healthy lifestyle habits.[4-6] Schools have also been described as institutions that provide a powerful social context for shaping the health of the next generation of young people.[7,8] Many school-based health programs target changes in individual students' knowledge, skills, attitudes, and/or behaviors. A public health approach to promoting healthy nutrition and physical activity habits to prevent obesity targets changing the school context—implementing policies, programs, and supportive environments—to make weight healthy behaviors the default option.[6,9,10] However, to do this, school leaders and legislators need reliable data to drive decisions and support changes at local, state, and federal levels. To derive these data, practitioners need comprehensive, easy to use tools to assess school features, practices, and polices that identify where and how school environments can and should be modified to optimize weight healthy behaviors as the persistent default. The School Physical Activity and Nutrition-Environment Tool (SPAN-ET) was developed to fill this void. Applicable for research or practice, the SPAN-ET can be used to assess and direct resources and efforts to provide supportive physical activity and nutrition environments in elementary schools. The SPAN-ET was designed to link assessment of environmental features, practices, and policies with evidence-based and effective strategies for improving school supports for students' healthy eating and activity behaviors. Furthermore, the tool was developed through the lens of policy, systems, and environmental approaches for obesity prevention[10] to fill a gap in our understanding of the interplay between aspects of the school environment, diverse characteristics of students and school staff, and the consequent effect on students' physical activity and dietary behaviors, and related health outcomes (eg, obesity prevalence).

METHODS

Participants

Extension educators (N = 12) and school personnel (N = 54) from 9 rural elementary schools in Oregon were recruited to participate in the development and beta testing of the SPAN-ET.

Instruments

The SPAN-ET was developed as part of a US Department of Agriculture-funded research and Extension program targeting community, school, and family home environmental resources and strategies for promoting habitual healthy eating and physical activity to prevent childhood obesity in rural areas. An initial review of the literature revealed several existing assessment tools with food, nutrition, and/or physical activity components.[11-15] Three instruments were identified for further examination based on application to the school environment and relevance for obesity prevention. Specifically, the School Health Index (Elementary),[12] the CHANGE tool (School Sector),[13] and the Healthy Schools Inventory,[14] were selected because they included items targeting the school nutrition and/or physical activity environmental and policy contexts. The 3 instruments were used in combination and pretested in 1 local elementary school in Oregon. The purpose of the pretest was to determine whether one of the existing tools, or combination of tools and items, could be adapted as a valid measure of the school-level physical activity and nutrition environmental areas of interest specific to childhood obesity prevention research. Findings from the pretest indicated that the existing tools did not encompass assessment of all environmental areas and conditions to be targeted in an obesity prevention intervention. For example, none of the pretested tools included a systematic assessment of school gardens as a behavioral environment. Across all tools, questions pertaining to features of the school physical (built) environment were limited. Another limitation of the existing tools was the scoring mechanisms, which ranged from complicated to simplistic and allowed for subjective ratings based on descriptive statements rather than tangibly operationalized items and calculated measurement scales. The SPAN-ET was designed to be a comprehensive and sensitive instrument to objectively measure the school physical activity and nutrition contexts in 3 environmental categories: physical, situational, and policy. The SPAN-ET includes valid items relevant to supporting obesity-related behaviors at school adapted from previously developed and broadly utilized tools[12-14] and integrated with new items[16,17] designed to fill emergent gaps in existing instruments.

The SPAN-ET includes a total of 27 items, referred to as ''Areas of Interest'' (AI), which are organized in 2 main component classifications representing targeted behavioral environments: physical activity and nutrition. Each AI is also categorized as belonging to 1 of 3 environmental groupings: physical, situational, or policy. The SPAN-ET model (Figure 1) considers the multidimensional and interactive nature of the school milieu. The model provides an evaluation framework for quantifying the quality of the school physical activity and nutrition contexts across the 3 environmental categories as evidence-based influencers of students' physical activity and/or dietary behaviors at school.[7,8,10] For example, the *Physical* environment category assesses the quality of the available outdoor and indoor built or tangible features of the school site, such as playground, gymnasium, cafeteria,

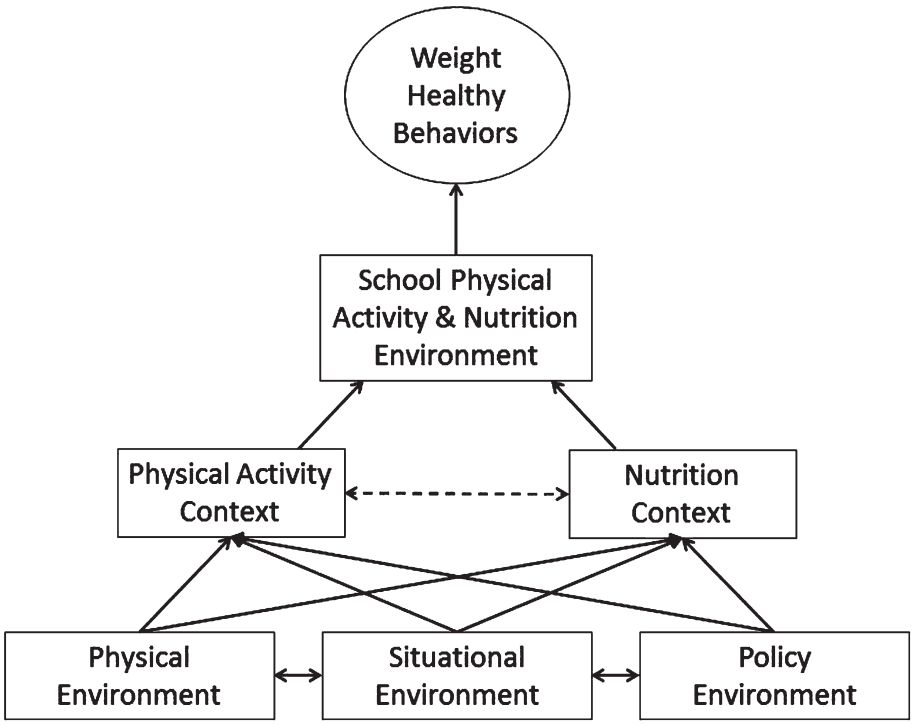
gardens; the *Situational* environment category examines the human-to-environment interactions related to the physical features, such as students use of play structures for physical activity, and human-to-human interactions in the physical environment, such as adult modeling/reinforcing salad bar visits; the *Policy* environment considers the written policies and rules that regulate how the *Physical* and *Situational* environments support weight healthy behaviors, such as breakfast after the bell or recess before lunch decrees written into the school wellness policy. The literature confirms that school environmental influencers of physical activity and nutrition vary by study and purpose.[6,12,14,17] When developing the SPAN-ET specifically for examining the elementary school weight-healthy behavioral context, we saw that there were numerically more observable AIs related to physical activity environments than food environments. Table 1 provides the resulting list of 16 AIs in the Physical Activity component and 11 AIs in the Nutrition component organized into the 3 environmental categories.

Each of the SPAN-ET AIs are described and operationally defined for measurement based on systematically observed criteria reflecting the current research-based, performance-based, or emerging practice elements for each AI. By way of example, Figure 2 presents AI 18: Garden Features, described as ''school has orchards, greenhouses, in-ground gardens, raised beds, and/or container gardens to grow edible produce,'' which is part of the Physical environment category under the Nutrition component classification. For this specific AI, the item description is operationalized by 2 measurement criteria (A and B). Each criterion states 1 observable element of edible gardens that is supportive of nutrition-related experiences or behaviors. In AI 25: Nutrition and Wellness Policy, 2 criteria (H and I) set the policy conditions for how garden features are utilized for student and staff participation in growing edible plants and how edible gardens are integrated the larger school nutrition/nutrition education agenda. In contrast, AI 5: Garden Features, which is part of the physical environment category under the Physical Activity component classification, is operationalized by three measurement criteria. Each criterion allows for measurement of a unique structural characteristic of garden features described as: gardens and landscaping include a variety of ''plants/plantings,'' ''growing environments,'' and ''topographic conditions.'' Item AI 13: Gardening, in the situational environment category, assesses how students and teachers, in person-to-environment or person-to-person interactions in the environment to enable gardening behavior—a physical activity, use the physical features of the school gardens and landscaping. The SPAN-ET includes measurement criteria (ranging from 2 to 15 criteria per AI) that reflect current practice standards for school environments that support obesity preventing dietary and physical activity behaviors defined by content experts.[7,16] Standards vary across AIs but consistently reflect the (1) written definition, limit, or rule approved and monitored for compliance by an authoritative agency (or professional or recognized body) as a minimum acceptable benchmark or (2) concept, norm, or principle established by agreement, authority, or custom, and used generally as an example or model to compare or measure the quality or performance of a practice or procedure. A binary scoring system, designed to be sensitive to changes in criteria operationalizing each of the AIs, is used to identify each criterion as ''met'' or ''not met.'' These qualitatively coded criteria are then transformed to a numerical count and percentage score that can be used to quantify AI performance and target improvements, analyze change within schools, and explain contextual differences between schools.

Table 1. **School Physical Activity and Nutrition-Environment Tool Areas of Interest.**

No. criteria currently (used in analysis)	
Physical activity (N = 16)	106 (103)
Physical environment	*50*
AI 1: Indoor Physical Activity Space	15
AI 2: Fixed Outdoor Features/Space	9
AI 3: Shelter and Shade Structures	3
AI 4: Natural Features	4
AI 5: Garden Features	3
AI 6: Surface and Surface Markings	4
AI 7: Enclosures and Safety Features	7
AI 8: Neighborhood Features	5
Situational environment	*32*
AI 9: Portable Equipment	5
AI 10: Atmosphere/Ambiance	7
AI 11: Promoting Movement Opportunities	6 (4)
AI 12: Before/After School and Summer Extracurricular	11
AI 13: Gardening	3
Policy environment	*24*
AI 14: Physical Activity and Wellness Policy	10 (9)
AI 15: Physical Activity and Wellness Committee	5
AI 16: Structured Physical Education	9
Nutrition (N = 11)	81 (79)
Physical Environment	*7*
AI 17: Safe and Adequate Cafeteria/Meal Service Area	5
AI 18: Garden Features	2
Situational environment	*46*
AI 19: School Meals	9
AI 20: Promoting Healthy Food and Beverage Habits	7
AI 21: Healthy Food and Beverage Practices	5
AI 22: Promoting Water Consumption	8
AI 23: Cafeteria Atmosphere/Ambiance	10
AI 24: Before/After School and Summer Extracurricular	7
Policy environment	*28*
AI 25: Nutrition and Wellness Policy	15 (14)
AI 26: Nutrition and Wellness Committee	5
AI 27: Health and Nutrition Education	8 (7)

Figure 1. **School Physical Activity and Nutrition-Environment Tool Model.**



Procedure

For each school assessment, 2 trained auditors apply the SPAN-ET and utilize qualitative data collection methods to independently and simultaneously collect data. That is, auditors do the assessment together, but each auditor independently codes each item. Document review, interview, and direct observation are used to obtain and verify information from multiple sources necessary to determine whether a criterion is coded as ''met'' or ''not met.'' Auditors first review the content of various forms of documentation, including district and school wellness policies, school meal program guidelines, cafeteria menus, playground rules and regulations, school website, and others. Once all documents are reviewed and all indicators of criteria being met are noted with the associated AI number and letter (eg, AI 18-B), criteria matching the noted evidence are tentatively marked as *met* [■]. Auditors then schedule and conduct interviews with key informants, either face-to-face or via telephone conference, and complete on-site systematic observations of school conditions and situations. Site visits and interview schedules are prearranged with school administrators and staff members who agree to participate in and accommodate SPAN-ET activities. Selection of informants for each AI is accomplished by the SPAN-ET, which identifies key informants using color coding and prioritizes the interview order by proximity of color to each criterion (Figure 2). Interview questions are provided for each key informant and the interviews vary in length from 15 to 20 minutes for school staff/volunteers up to 60 minutes for administrators. Interviews with informants who are not located at the school, such as the district food service director, are conducted before the site visit. Systematic direct observations of physical and situational environments are conducted before, during, and after the school day. Once information is collected and verified with at least 2 data sources, such as written policy and direct observation of implementation, each auditor completes coding criteria as either *met* [■] or *not met* [−] for every AI. All documentation, including field notes, photographs, and print materials used as supplemental data sources, is retained as evidence and used for resolving disagreements between data sources and between independent auditors' coding to reach consensus before calculating scores. On average, trained auditors familiar with the instrument and practiced in qualitative data collection methods completed the data collection and coding process in 10-12 h (per auditor), with about half the total time spent at the school site conducting interviews and direct observations.

Once each auditor has independently coded all criteria, auditors collaborate to transform their independent qualitative coding to a numerical score that reflects 100% consensus using the SPAN-ET Scoring Protocol

Figure 2. **Nutrition Physical Environment Area of Interest 18: Garden Features. Note: Informant Color Codes, Shown Here in Shades of Gray, are Purple (School Administrator), Blue, Green, Yellow, Orange, and Red (Wellness Committee), Respective to the Informant List.**

Category: Physical Environment

Area of Interest 18: Garden Features

Required Data Sources:

- ☑ Direct Observation Time 10:30 AM / PM
- ☑ Interview
- ☐ Document Review
- ☐ Other, please specify _____

Informant:

- ☑ School Administrator
- ☑ Teacher, specifically Science coordinator
- ☐ District Food Service Director
- ☐ Meal Service Manager/Cafeteria Staff
- ☐ Classified Staff/Volunteer, specifically _____
- ☐ Wellness Committee
- ☑ Other, specifically Garden coordinator

Description:

School has orchards, greenhouses, in-ground gardens, raised beds, and/or container gardens to grow edible plants and produce.

Criteria:

- ■ **A** – Variety of indoor and outdoor features, such as in-ground gardens, raised beds, containers, and/or other landscape features, exist where edible plants can be grown and harvested across seasons.
- ■ **B -** Garden space(s)/features are used to grow a variety of edible plants, including vegetables, fruits, legumes, greens, herbs, and others.

☐ Poor Practice	☐ Fair Practice	☐ Good Practice	☒ Best Practice
0≤25% criteria met	26%≤50%criteria met	51%≤75% criteria met	76%≤100% criteria met

 # criteria met 2 / 2 total criteria = 100%

Notes: In-ground and container gardens (out/indoor) were observed; location and type of edible plants grown in gardens were labeled with permanent signs and verified by garden coordinator

and Tool. Auditors review all criteria for each AI and assign a ''1'' when both auditors have coded the criterion as ''met'' or a ''0'' when both auditors have coded as ''not met.'' For each criterion where there is disagreement, auditors discuss the evidence supporting the coding and come to agreement, based on triangulation of the data across all sources, as to whether the criterion was met or not. Auditors score the discussed criterion to appropriately reflect their consensus. Once all criteria are assigned a value, each AI is scored as a percentage, which is calculated by dividing the number of criteria scored as ''1'' by the total number of AI criteria. The average time for 2 auditors familiar with the tool and methods to complete the scoring protocol was approximately 2 hours. Scores are explained relative to a 4-level scale of ''Practice'' rankings. ''Poor'' practice is defined as the school meeting $\leq 25\%$ of the criteria used to evaluate the AI; ''Fair'' practice signifies $26\% \leq 50\%$ criteria met; ''Good'' practice signifies $51\% \leq 75\%$ criteria met; ''Best'' practice signifies $76\% \leq 100\%$ criteria met. We utilized a 4-level ranking scale to eliminate a midpoint practice category and promote a clear delineation for AIs categorized as poor or fair practices as high priority for improvement. Percentage scores are also calculated and practice ratings assigned for the Physical Activity and Nutrition components, and the Physical, Situational, and Policy environments. Figure 2 provides an example of one completed AI, including how, when, and from whom data were collected, which criteria were scored as *met* [■] or *not met* [−], and the practice level based on the percentage of criteria met of total criteria for the AI.

Prior to implementation, the tool was field tested and refined by teams comprised of 2 trained auditors and 1 subject-matter expert in 3 elementary schools in Oregon. Findings from the field test were integrated to strengthen the face and content validity, organization, and coding and scoring mechanisms. Based on the field test results, explicit SPAN-ET instructions were written, including outlining the requirements for independence and conditions for intercoder reliability, specifying the order and explaining the methods for collecting qualitative data, utilizing and scoring the tool using a protocol that requires data verification and consensus between auditors. These components and the tool were organized into a SPAN-ET user manual,

Table 2. **Descriptive Characteristics for Elementary Schools (N = 6).**

Characteristic	County 1		County 2		County 3	
	School 1	School 2	School 3	School 4	School 5	School 6
Student enrollment	553	441	494	363	176	182
Participation in National School Lunch and Breakfast Program	Yes	Yes	Yes	Yes	Yes	Yes
Students eligible for free/reduced school meals-no. (%)	386 (69.8)	299 (67.8)	283 (57.3)	224 (61.7)	166 (94.3)	141 (77.5)
Race/ethnicity-no. (%)						
White	446 (80.7)	280 (63.5)	456 (92.3)	299 (82.4)	64 (36.4)	120 (65.9)
Hispanic	61 (11.0)	145 (32.9)	16 (3.2)	28 (7.7)	10 (5.7)	43 (23.6)
Other	46 (8.3)	16 (3.6)	22 (4.5)	36 (9.9)	102 (57.9)	19 (10.5)

which was subsequently used as a training and implementation guide. The manual includes the assessment, scoring, and reporting tools; instructions for qualitative methods; state and federal guidance documents; electronic resource guide hyperlinked to web-based resources and templates for creating reports; and references. Extension county-based educators from Oregon attended an experientially based 2-day (10 contact hours) face-to-face workshop to learn to implement and practice using the SPAN-ET, including qualitative data collection and content coding methods, following the guided instructions provided in the user manual.

Data Analysis

The SPAN-ET was beta tested in 6 geographically diverse, rural elementary schools (Table 2). For each school, 2 trained Extension educators, simultaneously and independently implemented the tool, working closely with school administrative, physical activity and nutrition personnel to assess the school physical, situational, and policy environments that support targeted energy-balance related behaviors. Once all data were collected and the site visit completed, all data sources, field documentation, completed SPAN-ET with raw data coded, and process evaluation logs were sent to the research team. Upon receipt, SPAN-ET coded criteria were assigned a numerical value (1 = met; 0 = not met), entered into an excel file, and inter-coder reliability was assessed. Percent agreement and Cohen's kappa coefficient[18] were calculated to reflect the precision between 2 independent auditors assessing a particular school prior to collaborating to transform their independent qualitative coding to a numerical score that reflected 100% agreement. Qualitative data, such as field notes, photographs, process logs, and communications from all auditors and schools were coded for AI content by the research team, and content was analyzed and triangulated with all intercoder disagreements. Results from content analyses were used to verify evidence of the criterion in question and confirm the correct numerical value for calculating SPAN-ET scores. In addition, content analyses of SPAN-ET artifacts revealed uncertainties, such as confusing terms and/or unclear criteria descriptions that led to modifications to improve reliability. For example, 1 criterion (AI 18-A) that assessed 2 different physical environment aspects of nutrition-related garden features, causing disagreement between auditors, was split into 2 (AI 18-A; AI 18-B). Additional school physical activity and nutrition best practice aspects were observed and noted but not included in the original criteria set. Modifications were made to the SPAN-ET criteria (N = 182) utilized in this study resulting in the addition of 5 criteria to the final SPAN-ET, which includes 187 total criteria (Table 1).

RESULTS

Across the schools and all SPAN-ET criteria, the percent agreement ranged from 80.8% to 96.8% (Table 3). Kappa, described using a commonly referenced scale,[18] ranged from substantial to almost perfect agreement (0.61-0.94). With respect to the physical, situational, and policy environments, percent agreement ranged from 75.4% to 98.7% and kappa ranged from moderate to almost perfect agreement (0.48-0.98). The highest levels of agreement were found for the situational environment. Percent agreement for the physical activity environment ranged from 73.8% to 96.2% and kappa ranged from moderate to almost perfect agreement (0.57-0.92); the nutrition environment percent agreement ranged from 81.5% to 97.5% and kappa from substantial to almost perfect (0.64-0.95). Results of SPAN-ET environmental scans for each elementary school are presented in Table 4. These data illustrate the quantified contextual variability within and across elementary schools in the environmental categories: physical activity, nutrition, physical, situational, and policy.

DISCUSSION

The SPAN-ET demonstrated face and content validity upon application by Extension educators working in elementary school settings and with

Table 3. **Intercoder Agreement by School for All Criteria, Physical Activity, Nutrition, and 3 Environment Categories.**

Variable	SPAN-ET criteria (N)	County 1				County 2				County 3				All	
		School 1		School 2		School 3		School 4		School 5		School 6		Range of agreement	
		Agreement (%)	Kappa	Agreement (%)	Kappa	Agreement (%)	Kappa	Agreement (%)	Kappa	Agreement (%)	Kappa	Agreement (%)	Kappa	Agreement (%)	Kappa
All criteria	182	88.8	0.79	83.4	0.69	95.2	0.90	96.8	0.94	85.0	0.73	80.8	0.61	80.8-96.8	0.61-0.94
Physical activity	103	94.3	0.89	82.1	0.66	96.2	0.92	96.2	0.92	84.9	0.73	78.3	0.57	78.3-96.2	0.57-0.92
Nutrition	79	81.5	0.64	85.2	0.72	93.8	0.88	97.5	0.95	85.2	0.73	83.9	0.66	81.5-97.5	0.64-0.95
Physical environment	57	89.5	0.72	87.7	0.74	98.3	0.96	98.3	0.96	89.5	0.78	75.4	0.48	75.4-98.3	0.48-0.96
Situational environment	76	88.5	0.78	80.8	0.63	91.0	0.80	98.7	0.98	85.9	0.73	83.3	0.68	80.8-98.7	0.63-0.98
Policy environment	49	88.5	0.77	82.7	0.60	98.1	0.97	92.3	0.85	78.9	0.66	82.7	0.63	78.9-98.1	0.60-0.97

school personnel, who additionally served as school environment subject-matter experts, and substantial intercoder reliability when implemented according to protocol by trained auditors. It is important to note that auditor familiarity with the tool and training in qualitative methods improved the reliability of the assessment. One auditor participated in the pilot, thus completing training and conducting an assessment prior to the study workshop and subsequent SPAN-ET implementation in Schools 3 and 4, which subsequently had the highest interrater reliability of the 6 schools participating in the study. The SPAN-ET user manual includes instructions for auditors to review the instrument and data collections methods thoroughly and together prior to implementation. It is our contention that the experienced auditor was more familiar with the tool and processes, and able to share experiential knowledge with a less experienced auditor to improve interrater reliability. The SPAN-ET provided a feasible and quantifiable measurement of the quality of 6 elementary schools' environmental resources and policy efforts to provide supportive school physical activity and nutrition contexts important for child obesity prevention.[7,19] Operationalizing each AI item using a list of unique, observable attributes of the environmental context allowed auditors to objectively code observed qualities into pre-determined AIs. Requiring 2 independent auditors and establishing a procedure for resolving intercoder disagreement prior to transforming qualitative data into numerical scores strengthened the reliability and validity of the measurement as an indicator of what percentage of criteria were met.

Integrating items consistently represented in widely accepted assessments[12-14] of school health factors with new items targeting specific aspects of the school context that support nutrition and/or physical activity behaviors at school, such as school gardens, strengthened the application of this assessment for targeting environmental changes. Inclusion of new items representing emerging best practices for schools, such as natural and garden environments,[16] and assessing these features in association with students' behavioral and health outcomes, will provide an opportunity to examine the relationships between environmentally enriched school contexts and students' health, behavior, and academic performance, lessening a gap in the literature. We developed the SPAN-ET to measure the quality of the AIs so that schools can apply the tool to specify and quantify environmental change in any AI and/or environmental category. The instrument's descriptive scale of AI practices (ie, Poor, Fair, Good, Best) is based on a percentage score that reflects the number of criteria within a particular AI that were ''met'' or ''not met.'' This allows schools to use data-driven decision making to set priorities and target

Table 4. **Percentage of Criteria Met by School for Physical Activity, Nutrition, and 3 Environment Categories.**

		County 1		County 2		County 3	
Variable	**SPAN-ET criteria (N)**	**School 1 (%)**	**School 2 (%)**	**School 3 (%)**	**School 4 (%)**	**School 5 (%)**	**School 6 (%)**
Physical activity	103	58	45	70	37	54	62
Nutrition	79	37	44	57	51	48	65
Physical environment	57	74	60	68	49	61	61
Situational environment	76	46	50	67	42	51	59
Policy environment	49	24	18	55	37	41	71

Note: Percentage scores are explained relative to a 4-level scale of ''practice'' rankings. ''Poor'' practice is numerically defined as the school meeting $\leq$ 25% of the measurement criteria; ''Fair'' practice signifies 26% $\leq$ 50% criteria met; ''Good'' practice signifies 51% $\leq$ 75% criteria met; ''Best'' practice signifies 76% $\leq$ 100% criteria met.

actions that will optimize the school environment in support of weight healthy behaviors for students while they are at school. Defining each AI using a list of unique, observable attributes of the environmental category (physical, situational, policy) as measurement criteria delivers an instrument that is sensitive to both changes within school and differences between schools at the criterion level.

The SPAN-ET will be a useful tool despite some limitations in our study design. Our participant sample was not random given the challenge of engaging schools and requesting their time. As such we leveraged existing relationships with elementary schools currently served by Oregon State University's Supplemental Nutrition Assistance Program Education (SNAP-Ed), which resulted in our small case sample. However, this design provided an opportunity to broadly train our statewide SNAP-Ed faculty and staff to implement the SPAN-ET. Despite our convenience sample of schools located in rural communities (rather than urban neighborhoods), the instrument assesses the physical, situational, and policy attributes of the school environment and neighborhood environmental characteristics most proximal to the school, and is therefore applicable to elementary schools in rural and urban settings.

A convenient change in the SNAP-Ed guidance nationally requires educational staff to participate in policy, systems, and environmental improvement efforts that result in measurable outcomes.[19] Thus, SNAP-Ed staff were motivated to participate in this process because it can serve as a tool to meet this change in the guidance. Whereas the SPAN-ET may prove useful for SNAP-Ed programs beyond Oregon, a more diverse sample of schools is required to understand the generalizability of the process and the validity of the instrument, particularly when applied to schools that do not serve predominately low-income audiences such as those eligible to receive SNAP-Ed programming. In addition, repeating the SPAN-ET annually in association with behavioral assessments and district or statewide students' body mass index (BMI) surveillance, as recommended by Story et al[6] provide evidence for which school environmental components or categories are most likely to be significant influencers of students' weight healthy behaviors.

IMPLICATIONS FOR SCHOOL HEALTH

The SPAN-ET assessment results were provided to school health stakeholders by Extension educators in various formats (templates included in manual), including a 6-page narrative report, 2-page fact sheet, a PowerPoint presentation, and as an interactive Excel file (SPAN-ET Results and Resource Guide; SPAN-ET RRG). The SPAN-ET RRG was designed to provide guidance for using SPAN-ET results to drive decisions and target actions, and help school wellness partners to identify and rank priorities (high, medium, or low) for improving low scoring AIs with ''Poor'' or ''Fair'' practice ratings by targeting unmet criteria. Embedded in the SPAN-ET RRG and associated with each AI and every criterion are hyperlinks to the most up-to-date, credible government, education, or organization resources. The linked resources provide evidence-based, practice-based, or emerging ''best practice'' environmental improvement strategies that schools can use to remediate criteria that were coded as ''not met'' within the AIs prioritized for change. Thus, Extension educators and school stakeholders have as an implementation guide an objective SPAN-ET report highlighting emergent needs or opportunities for improvement matched to policy, system, or environmental strategies that are likely to produce the desired outcomes. This serves as a template for action planning and resource development for improving the school context for students' healthy nutrition and activity behaviors.

The SPAN-ET RRG provided details to individual schools as to which criteria were met relative to their percentage scores, and linked appropriate research-based, practice-based, or emerging strategies with each criterion to tailor school-based implementation to unmet criteria.

By example, in 1 calendar year, the SPAN-ET RRG was used by school wellness stakeholders in 1 participating school to set data-driven priorities for environment and policy actions aimed at improving

the Physical Activity context, selecting strategies with demonstrated effectiveness for increasing physical activity before/after and during school, securing grant funding to improve Physical Activity ''Physical'' and ''Situational'' environments through the installation of a fitness trail and establishment of a 100 Mile Club,[20] and tracking school-level changes resulting from implementation of a school wellness committee, physical activity subgroup.

Considering the variable timeline for environmental changes, and the even longer timeline for population-level strategies to have lasting and measurable impacts on behavior and health, annual assessments will serve to drive as well as measure changes in school physical activity and nutrition behavioral contexts. Paired with assessments of related behaviors and surveillance of students' BMI, the SPAN-ET can help schools meet the national agenda for school health.[17,19,21] Given the stated need by the former American Alliance for Health, Physical Education, Recreation and Dance (now the Society of Health and Physical Educators), the National Association of Chronic Disease Directors, and the National Association of the State Boards of Education for ''tools to help navigate the complex world of school health policy,''[21] the SPAN-ET fills an important gap for researchers, educators, and public health practitioners interested in improving the school environment to support child health.

Human Subjects Approval Statement

Study 4909 was reviewed and approved by Oregon State University's Institutional Review Board.

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