Final Report: 2017/18 10 x 10 Health Ambassador Program Data-Based Evaluation Process

Sandoval County Health Council

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Background:

The 10x 10 Health Literacy Ambassador Program, developed by the Sandoval Health Collaborative, includes 10 healthy habit categories that every child should know by the age of 10 and is structured around interactive classroom content that focuses on one healthy habit each week for10 weeks. At the end of the in-school program, the Health Booklet is sent home to encourage continued exploration and implementation by families motivated by student interest and information. The booklet also includes a comprehensive guide for parents to local health resources.

The program was piloted in Spring 2017 for first graders in several Rio Rancho and Bernalillo schools and in Cuba Elementary School. In October 2017, year two of the first grade program was implemented and a second grade program, with grade level appropriate content and activities, was added. Elementary schools in the Cuba, Rio Rancho and Bernalillo School Districts participated.

Equity Context:

Health literacy and wellness have been identified as priorities for children and their families at the National, State and Sandoval County levels. Children and adolescents, through public education-based efforts have an opportunity to develop behaviors that decrease adult onset of chronic diseases.[1] The World Health Organization concludes that the health equity gap can be closed in a generation, if children are the focus.[2]

Improving health equity requires multifaceted interventions that together offset social determinant obstacles including poverty, geospatial disadvantage associated with rurality that impacts health care access, education, food insecurity, housing, safe environments as well as racial, ethnic gender or sexual preference

[1] Winkleman T, Caldwelll, M, Bertram, B., Davis, M, 2016. Promoting health literacy for children and adults. Pediatrics.

[2] World Health Organization. 208. Closing the gap in a generation. Commission on social determinants of health.

discrimination. Equity requires directing more resources to those with worse health and fewer resources[3]

The Sandoval County Community Health Needs Assessment prepared for the Sandoval County Health Council in April, 2016 included Sandoval County data that identified nutrition, physical activity and obesity as needs that align with US Dept of Health and Human Services Healthy People and New Mexico Department of Health goals. The critical need for improved health literacy, focusing on children and their families, to result in improved wellness and prevention and improved short and long-term health outcomes was also identified.[4]

Healthy habit guidance is most successful when developed and guided at the community level with active engagement by those in need.[5] For example, it has been noted that the "healthy eating movement" has had more of a positive impact on those with information, access and income as compared to the dietary quality of SNAP participants. Access and awareness of SNAP related programs like "Double Up Food Bucks" that allows participants to spend twice as much money at farmers' markets along with information are important moving forward.[6] Other examples include gardening and cooking programs for children that have been successful tools to enhance student awareness and enthusiasm for healthy eating in California and Colorado and relate to the rural and historic agricultural context of New Mexico and Sandoval County.[7] [8] The Sandoval County Health Collaborative recognizes the importance of data that includes local input of the stakeholder groups involved: teachers, students and parents.

10 x 10 evaluation methodology

The 10 x 10 program in Sandoval County is an effort to provide healthy habits information in an interactive student and family-based program for ALL first and second graders. A 10 x 10 first and second grade health literacy program

[3] Braveman P, Arkin E, Orleans T, Procor D, Plough A, May, 2017. What is health equity? Robert Wood Johnson Foundation.
[4] Osterfoss M, Sandoval County Community Health Assessment, April, 2016
[5] Braveman P, Arkin E, Orleans T, Procor D, Plough A, May, 2017. What is health equity? Robert Wood Johnson Foundation
[6] Ferdman R. Sept, 2015. The key difference between what poor people and everyone else eat. Washington Post blog
[7] US Dept of Agriculture, School gardening https://www.fns.usda.gov/school-gardening
[8] Western Growers Association, Collective School Garden Network http://www.csgn.org/content/planning-your-school-garden-program-0

evaluation including focus groups with students, parents and teachers was included post pilot programs in Spring, 2017.

In conjunction with year two program roll out in Fall, 2017 a sample of pre-implementation survey data was obtained from parents (first grade n=74, second grade n=39), teachers(n=17) and students (first grade n=266, second grade n=212) using written survey tools. (See Appendix A).

Data by grade level and school was provided at the December 2017 Sandoval County Health Council (SCHC) meeting and is available electronically. Aggregated presurvey data for students,(Appendix B) parents and teachers is attached (Appendix C).

Post program survey data was obtained in April 2018 from a sample of first (n=52) and second grade (n=177) students at three Rio Rancho district elementary schools and from Cuba Elementary School. In addition, teachers from three Rio Rancho schools and Cuba (n=6) provided post program input. Parents from two Rio Rancho schools and two from Cuba (n=5) responded to post program surveys (Appendix D).

Student profile information obtained from the school district web sites indicates a majority of students identified as Hispanic in the participating Rio Rancho elementary schools and American Indian in Cuba Elementary school. Students eligible for free or reduced lunch benefits ranged among surveyed schools from 32.8% to 64%. Maximum annual income for a family of four to obtain this benefit is $44,955. (Appendix E)

Pre-10 x 10 program themes using descriptive statistics aggregate data:

First Grade Students:

Positive behavior trends:

80% report hand washing all or most of the time

75% report being in bed by 9pm

Self-reported behavior that could be improved to promote healthy outcomes:

57.5% discuss healthy behavior at home *only some of the time or never*.

32.3% report eating fruits and vegetables *only some of the time or never*.

36.1% report play/exercise at 30 minutes or less per day

15% are able to WRITE an approximation of home address

Second Grade Students:

Positive behavior trends

80% report hand washing all or most of the time.

70% report being in bed by 9pm

Self-reported behavior that could be improved to promote healthy outcomes

53% discuss healthy behavior at home *some of the time or never*.

26.6% report eating fruits and vegetables *some of the time or never*.

36.3% report play/exercise *less* than 30 minutes daily.

28% can WRITE clearly or approximate their home address

Limitations/Lessons for future student survey include:

Survey format and vocabulary required reading/writing skills that may have been above grade level for some students. For example, "Do you know your address?" required the ability to write the address. It was not clear how many students could accurately repeat addresses, even if unable to write them. Furthermore, students in rural areas may not have a formal physical address.

Assuming questions were read aloud by the teacher, comprehension of the response scale options could be problematic. A range of smiling to frowning faces with three rather than five choices has been suggested for future surveys

Awareness of "correct" answers as compared to "real" answers may have been a factor, with the positive take-away being that this reflects knowledge, if not attainment, of target behavior on the part of young children.

The question regarding wearing a helmet would be confusing/ not applicable for children who do not have access to a bike, skates or a scooter.

Finally, if post program data is compared to pre data for purposes of assessing a change in responses, cohort samples of students are necessary. In addition, other variables such as program structure, training for teachers or other presenters and

timing of pre and post surveys relative to program needs to be consistent in order to increase reliability of data.

Parents First Grade:

Positive behavior trends

A majority report family activities involving sports and active recreation.

Almost all report child preference for physically active sports and recreation.

75% report teeth brushing twice a day (recommended guideline).

72% report PCP office as primary health resource with 26% indicating internet.

Self-reported Behavior that could be modified to promote healthy outcomes

While 38% indicate "daily" or "often" child-initiated conversations about healthy eating and physical activity, 48% indicate "once-in-a-while" or "rare/never".

54% indicate healthy eating and candy/junk food as greatest family health challenges, followed by family issues (31%) and getting exercise (14%).

Parents Second Grade:

Positive behavior trends

A majority report family activities involving sports and active recreation.

Almost all report child preference for physically active sports and recreation

Self-reported Behavior that could be modified to promote healthy outcomes

49% indicate "daily or "often" child-initiated conversations about health eating and physical activity while 47% indicate "once-in-a-while" or "rare/never."

66% report twice daily teeth brushing (recommended guideline).

49% report PCP office as primary health resource with 31% citing internet.

62% indicate healthy eating and candy/junk food are greatest family health challenges followed by getting exercise (21%).

Limitations:

The parent survey tool has provided some initial asset mapping and needs assessment information. More detailed information from parents regarding barriers to and suggestions for improving healthy eating and exercise that could be an output of a small sample of key informant interviews would help with proposed solutions.

Post program data will be informative if the parent preprogram cohort is contacted soon after program completion and the 10x 10 booklet has been sent home.

Teachers:

Although mostly positive, there is some range in perception of the value of 10 x 10 relative to academic curriculum. Almost all express concern with time available for program given other academic expectations. Several express interest in team approach incorporating PE teachers and others, e.g. school nurses.

Discussion of preprogram data significance

There is room for improvement as reflected in both student and parent responses to talking about healthy habits at home. The data indicates that parents perceive themselves to be challenged by issues surrounding healthy eating. In addition to guidance for the specifics of the 10 x 10 program, this data provides baseline information and support for the importance of early health literacy programming in Sandoval County, given self-reported data indicating lack of exercise, concern with weight gain, obesity and mental health, including substance abuse, risk factors found in the Sandoval County New Mexico Youth Risk and Resiliency Survey in 2013.[9]

From the instructional teacher perspective there is an opportunity to continue to explore by whom, how and when the 10 x 10 program can be most effectively delivered. Specifics may vary among school communities and benefit from a flexible team approach.

[9] New Mexico Department of Health, 2013 Youth Risk and Resiliency Survey, Sandoval County, NM https://nmhealth.org/data/view/behavior/872/

10 x 10 Post Program Evaluation

A post program evaluation of students, parents and teachers was undertaken in April 2018 using a survey tool and basic descriptive statistics analysis. The purpose was to identify attitudes and changes attributable to the program and to provide recommendations for ongoing program improvement. In addition, key informant interviews (number to be determined) will be done with a sample of community members to capture input from a variety of perspectives during Summer, 2018.

Post Survey 10 x 10 aggregate data themes:

First Grade Students:

Positive behavior/engagement trends:

63% report eating fruits ad vegetables all the time

79% report one hour or more of exercise daily

58% report learning about healthy eating and exercise from 10 x 10

76% report wanting more 10 x 10 activities

Self-reported Behavior that could be modified to promote healthy outcomes

48% report talking "a lot" about healthy food and behavior but 25% report "not really"

67% report not being able to write their home address

17% report doing 10 x10 activities at home, but 55% report "not really"

Second Grade Students:

Positive behavior trends

56% report eating fruits and vegetables "all the time"

61% report one hour or more of exercise each day

63% report liking the 10 x 10 activities "a lot"

72% report learning “a lot” about healthy habits from 10 x 10

67% report wanting more 10 x 10 activities

Self-reported Behavior that could be modified to promote healthy outcomes

36% report talking about healthy food/behavior at home, 17.5% “not really**”**

45% report being able to write home address (55% not)

16% report doing a 10 x 10 activity at home, 57% “not really”

Limitations/Lessons for future student survey include:

Cohort data samples for pre and post evaluation and consistent program presentation and evaluation timing would improve reliability of any changes in findings and could NOT be confirmed for responses from the three Rio Rancho district schools submitting post program student surveys.

Cuba Elementary School Student pre and post cohort data

Post program data from both first and second grades at Cuba Elementary can be cohort matched with preprogram survey responses. (Appendix F). Improvement from pre to post self-described behavior is noted regarding an increase in the amount of exercise and frequency of fruit and vegetable intake for both first and second graders.

One Limitation of both pre and post survey instruments noted by teachers in Cuba is use of vocabulary and concepts that are not clear to children in the first and second grades, e.g. “healthy food and healthy behavior”. Teachers also noted that “more improvement would have been shown if the post survey was taken right after completion of the program in November 2017, rather than four months after program completion in April 2018.

The 10 x 10 program coordination by the Cuba Elementary school counselor was crucial to booklet distribution, program initiation as well as pre and post surveys completion. Variations of this coordination model at each location would not only ensure a more effective program for students but also would greatly facilitate data gathering. It should be noted that the Cuba Elementary School principal describes herself as very supportive of supplementary health and behavior materials, including 10 x 10 and is interested in extending 10 x 10s impact through other programs like Kids Cook.

Cuba Teacher Input pre and post program

The 10 x 10 program at Cuba Elementary was coordinated by the school counselor who distributed books, answered questions from teachers and followed through with collecting pre and post program data. A program coordinator facilitates program initiation, follow through and completion while offering support by willingness to get answers to questions. The first-grade program was incorporated into the science unit and successful according to the teacher because it reinforced ongoing messaging by giving practice Both first grade teacher/and PE coach noted that two pages included in the book with multiple questions should be simplified but that overall the content was appropriate around basic self-health functions such as drinking adequate water. Additional teacher input included noting that the "Know your numbers" lesson is challenging because many students living in rural areas and do not have a formal address and that family member phone numbers may change.

Parent and Teacher post data:

The very small sample sizes of post data for parents and teachers precludes trend identification but those parents surveyed generally indicated positive outcomes in terms of increased interest in healthy eating as well as other health positive behaviors. Teachers who responded reported positive student engagement with a range in opinion as to how the program can be a valuable supplementary resource to existing science curriculum.

Conclusions and recommendations based on 10 x 10 2017/18 program evaluation and outcomes:

Valuable information to guide ongoing efforts was obtained through the pre and post data findings. Positive engagement, learning and interest in participating in more 10 x 10 activities was reported by the majority of students in both first and second grades (range 44% to 76%). This positive finding provides a foundation for ongoing repeated, age appropriate reinforcement of 10 x 10 messages. In addition, information reinforcing healthy eating habits and access to healthy foods appears to be a priority for parents. Teachers reported seeing added value in the program framed by concern with time constraints and how to "fit it in".

Program coordination on site in Cuba made a difference in access to pre and post data and to overall successful program implementation. Additional guidance and resources need to be available to program implementers with one example being improved transition of the 10 x 10 book home upon program completion and associated activities at home. 55% of first graders and

57% of second graders responded "not really" when ask if any 10 x 10 activities were done at home. Program coordination should be able to address in part teacher concerns regarding how and when to incorporate 10 x 10 as a resource into a full academic curriculum.

Data collection and analysis limitations:

Over 200 of both pre and post student surveys were completed. Analysis consisted of descriptive aggregated data tables including sample size, percentages per response. Given the voluntary nature of participation in data collection, student data cohort control did not exist beyond grade level and school district for participating schools in Rio Rancho. Cohort data WAS obtained from Cuba Elementary school. There was no pre to post survey cohort participation from parents, although all who had completed preprogram surveys were called to obtain post program data. While 113 parents provided preprogram input, post data was obtained from only five. Similarly, while 17 teachers provided preprogram data only six provided post data. While pre and post data include important information for ongoing program improvement, it is not possible to statistically asses change in attitudes, knowledge or behavior with the exception of the cohort data from Cuba Elementary first and second grade students.

Evaluation Process Recommendations based on 2017-2018 implementation

Students, Parents and Teacher pre and post program data:

Establish a program coordinator at each data site, including overall coordination of 10 x 10 program, including evaluation process to decrease confounding variables**.** This could include but not be limited to distribution of materials, in-service training, evaluation materials coordination (timing relative to program implementation and completion) and being able to provide teacher and parent contact information for participating students for evaluation purposes.

Continue/Fine tune pre and post surveys for students. For example, simplify language /increase visual for 1st and 2nd grade surveys

Identify cohort sample (classroom or other venue) for pre and post from a total of five venues.

Improve evaluation process to be based on cohort samples from a small sample of representative locations.

Conduct Key informant interviews: (n=10 to 15) including several "perspectives" e.g. teachers, administrators, parents, other community partners, Sandoval County Health Council representation, community members with population health/education backgrounds. Qualitative approach with semi structured questions, response coding to identify themes. These will be piloted in Summer, 2018 using qualitative format voluntary participation, short, semi structured one-on-one questions recorded with field notes.

Preliminary 10 x 10 Program Recommendations based on 2017-2018 implementation

- Monitor and improve program content to match age appropriate/eliminate reliance on reading as needed.
- Use repetition of content at age appropriate level and narrow focus of content (more on exercise and nutrition) with increasing grade level.
- Increase training/guidance opportunities for teachers/implementers/possible team presentation approach.
- Increase partnerships and "hands on" implementation opportunities; e.g. food bank samples and cooking demonstrations targeting parents, summer programs, kids' cook, gardens, kids running groups for children.
- Improve accuracy of determining change in pre to post data through use of consistent program format and cohort responders to reduce impact of confounding variables to more effectively asses 10 x10 impact for students and families.

Conclusion

Improving health literacy for children provides a foundation for improved life - long health outcomes. The 10 x 10 program in Sandoval County provides a platform, a starting place, for a broad and longitudinal process with a focus on nutrition and exercise that requires planning and is consistent but flexible, with repetition and community-based implementation, evaluation and improvement based on evaluation. The ongoing leadership and support of the Sandoval County Health Council as well as other community funders is critical both in making the program viable, optimizing benefit for students and families as well as providing assurance to outside funders that 10 x 10 is a program of high local value.

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