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PHYSICAL ACTIVITY ENVIRONMENTS IN RURAL COMMUNITIES:
EXPLORING THE RELATIONSHIP BETWEEN COMMUNITY PERCEPTIONS
AND THE ENVIRONMENT

BY

ELIZABETH M. BYE

A thesis submitted in partial fulfillment of the requirements for the

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Specialization in Exercise Science

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South Dakota State University

2019

PHYSICAL ACTIVITY ENVIRONMENTS IN RURAL COMMUNITIES:
EXPLORING THE RELATIONSHIP BETWEEN COMMUNITY PERCEPTIONS
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This thesis is approved as a creditable and independent investigation by a candidate for the Master of Science degree and is acceptable for meeting the thesis requirements for this degree. Acceptance of this does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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ABBREVIATIONS

PA	Physical Activity
PPA	Programs and Policy Assessment
RALA	Rural Active Living Assessment
RALPESS	Rural Active Living Perceived Environmental Support Scale
SSA	Street Segment Assessment
SNAP	Supplemental Nutrition Assistance Program
TWA	Town-wide Assessment

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ABSTRACT

PHYSICAL ACTIVITY ENVIRONMENTS IN RURAL COMMUNITIES:
EXPLORING THE RELATIONSHIP BETWEEN COMMUNITY PERCEPTIONS
AND THE ENVIRONMENT

ELIZABETH M. BYE

2019

Purpose: To assess the physical activity environment, community perceptions of the physical activity environment, and the relationship between these variables in rural and/or underserved communities with high obesity prevalence.

Methods: The Rural Active Living Assessment (RALA) was used to assess the programs and policies (PPA), town-wide amenities (TWA), and street segments (SSA) of the physical activity environment and the Rural Active Living Perceived Environmental Support Scale (RALPESS) was used to assess community perception of the physical activity environment within eleven rural and/or underserved communities. Each section of the RALA and RALPESS are further broken down into additional subsections in order to assess specific aspects of the physical activity environment. Due to different absolute scores possible in each subsection, relative scores were calculated to allow for comparison between subsections. Data was analyzed with STATA and presented as mean \pm standard deviation. Pairwise correlations were used to assess the relationship between the physical activity environment (RALA) and community perception of the physical activity environment (RALPESS). Statistical significance was set at $p < 0.05$.

Results: Eleven communities completed the RALA and 170 individuals completed the RALPESS. The RALA score was $53.4 \pm 9.28\%$. The TWA scored $58.4 \pm 16.0\%$, parks

and playgrounds ($78.2 \pm 22.0\%$) scored highest and trails ($35 \pm 39.7\%$) scored lowest ($n=11$). The PPA score was $43.82 \pm 17.97\%$, school policies ($63.6 \pm 32.3\%$) scored highest and town policies ($17.3 \pm 30.7\%$) scored lowest ($n=11$). The SSA score was $69.1 \pm 17.5\%$, (lack of) barriers ($90.0 \pm 21.6\%$) scored highest and safety features ($27.6 \pm 18.0\%$) scored lowest ($n=10$). The RALPESS score was $50.2 \pm 13.8\%$. Schools ($71.0 \pm 24.6\%$) scored highest and churches ($32.6 \pm 20.7\%$) scored lowest ($n=11$). No significant relationship was found between the total score on the RALA and RALPESS ($r=0.48$, $p=0.16$).

Conclusion: There is not a relationship between perception of the PA environment and the PA environment in rural and/or underserved communities. The quality of amenities may be a main contributor to the lack of relationship as resources in poor quality may influence the way individuals perceive these PA resources. Lack of relationship may also be due to the possible inability of the assessment tools to capture PA support within extremely rural areas. The present study highlighted that schools are a key hub for physical activity efforts within rural and/or underserved communities. Implementation of programs in schools and bringing awareness to these programs may improve the perceptions and physical activity environments in rural communities and promote more physical activity.

Introduction

Obesity prevalence in the United States was 39.8% for adults and 18.5% for children in 2015-2016 according to the National Health and Nutrition Examination Survey.¹ Obesity in underrepresented and underserved populations is even more extreme.² Rural adults are 15% more likely to be obese and rural children are 26% more likely to be obese than their urban counterparts.^{3,4} Additionally, American Indian adults and adolescents are 50% and 30% more likely to be obese than non-Hispanic whites.⁵ Growing evidence suggests the built environment contributes to health disparities.⁶⁻¹²

It is well known that lack of physical activity (PA) is a major contributor to obesity, although evidence is conflicting on whether physical activity levels differ between rural and urban populations.¹² Physical activity is lower among minorities as well as communities with low socioeconomic status.¹³ Physical activity participation is influenced by both the physical environment and how the physical environment is perceived. Environments that have safety features and access to various amenities are associated with an increase in physical activity participation.¹⁴⁻¹⁷ Environments that lack recreational facilities and require further traveling distances increases the odds of being both physically inactive and obese.¹⁸ Obesity and inactivity are also associated with communities that are perceived poorly.^{18,19} Distance to resources, social isolation, lack of community offerings and lack of transportation are all aspects perceived negatively in rural communities.²⁰ Perceptions of the PA environment may directly influence levels of physical activity therefore it is imperative that environments and perceptions be positive in order to create ideal PA environments.¹⁸

Past research has assessed the relationship between the perceived physical activity environment and the actual environment in rural^{6,21} and nonrural^{22,23} communities and have found mixed results. Some found a weak relationship between the physical activity environment and perceptions of the physical activity environment while others found no relationship. The assessments used in previous rural studies were created to assess urban and suburban areas and may not be relevant when assessing rural environments.^{24,25} Comstock et al.⁶ assessed the physical activity environment and perceptions of the physical activity environment in rural youth living in the Midwest using two different urban assessment tools. He found that children's perceptions were not correlated with one of the environmental assessment tools and the other environmental assessment tool was only weakly correlated with the children's perceptions. At the time of the study rural assessment tools were not yet available. Another study completed in rural communities compared perceptions with physical activity resources located by geographic information system technology, more than 80% of the respondents reported that there were no environmental support for physical activity when in fact there was.²¹

There is a need to better understand the physical activity environments and community perceptions of the physical activity environment in rural and/or underserved populations. Therefore, the purpose of this study was to assess the physical activity environment, community perception of the physical activity environment, and the relationship between these variables within, rural and/or underserved communities with high obesity prevalence.

Methods

This study was a component of a larger, collaborative project, focused on improving the physical activity and nutrition environment in communities with a high prevalence of obesity and/or a high percentage of individuals that qualified for Supplemental Nutrition Assistant Program (SNAP). This project was approved by the Institutional Review Board at South Dakota State University and deemed exempt from human subject consent.

Protocol

Eleven communities were recruited to participate in this project from a rural Midwest state. Participating communities were located in rural counties with an obesity prevalence greater than 40% and/or had a high percentage of individuals that qualified for SNAP. A wellness coalition was formed in each community by following the Good and Healthy South Dakota Community Health Needs Assessment Toolkit protocol.²⁶ The wellness coalitions were made up of key stakeholders, a South Dakota State University Extension Field Specialist and a Community Wellness Champion. The Wellness Champion was a trained and paid position responsible for recruiting stakeholders who represented each sector of the community (teachers, farmers, business owners, city administrators, etc.) to be members of the wellness coalition.

Rural Active Living Assessment

The Rural Active Living Assessment (RALA) (figure 1) analyses how activity-friendly a rural community is and is comprised of three separate assessments: Town-

Wide Assessment (TWA), Program and Policy Assessment (PPA), and Street Segment Assessment (SSA). The TWA and PPA each have a possible score of 0-100. The TWA includes five subsections, the addition of all subsection scores represents the total TWA score out of 100. The subsections and possible points are as followed: school locations 15, trails 20, parks and playgrounds 25, water activities 10, and recreational facilities 30. The PPA includes four subsections and concentrates on the available programs and policies within the town and the schools. The addition of each subsection score represents the total PPA score out of 100. PPA subsections and scores are as followed: town policies 10, town programs 30, school policies 30, school programs 30.²⁷ The SSA looks at different zones throughout the town, land use and evaluates its walkability, safety, and potential barriers. A similar scoring system created by Hege and colleagues²⁸ was used to evaluate the total walkability from the SSA data. The scoring system was used to get a total walkability score within each community. Each category was summed to create a total walkability score out of a maximum of 33 points. Multiple street segments were assessed in each community. The total scores from TWA, PPA, and SSA were summed to make up the total RALA score out of a maximum of 233 points. The RALA was completed by the wellness coalition in each community during the early summer months of 2015.

Rural Active Living Perceived Environmental Support Scale

The Rural Active Living Perceived Environmental Support Scale (RALPESS) (figure 2) is used to assess the perceptions within rural communities and how they feel about their physical activity environments. The RALPESS is made up of 33 questions and is broken down into seven sub-sections: Indoor Areas, Outdoor Areas, Town Center Physical Activity Resources, Town Center Connectivity, Schools, Churches, and Areas Around Your Home²⁹. Each question is scored on a 4-point Likert scale (strongly disagree=1, strongly agree=4). Total RALPESS score is calculated by summing all questions and section scores from the sum of the questions within each section.²⁹ The RALPESS was completed individually by community members that attended a community meeting hosted by the wellness coalition.

Data Analysis

Descriptive statistics were used to quantify the PA environment and the perceived PA environment for all outcome variables. Due to different absolute scores possible in each subsection of the RALA and RALPESS, relative scores were also calculated to allow for comparison of strengths and weaknesses within the PA environment and the perceived PA environment. Pairwise correlations were used to determine the relationship between the physical activity environment (RALA) and community perception of the environment (RALPESS). Data was analyzed with STATA 14.2 and presented as mean \pm standard deviation. Statistical significance was set at $p \leq 0.05$.

Results

The physical activity environment was assessed in 11 rural and/or underserved communities. These communities had populations of $7,157 \pm 20,517$ residents. Individuals living below the poverty line averaged $31.7 \pm 19.2\%$. County adult obesity prevalence averaged $36.9 \pm 5.9\%$. American Indian population within the communities was $55 \pm 36.2\%$ (table 1).

RALA

Across all communities, the total RALA score was $53.4 \pm 9.28\%$. The TWA score was $58.4 \pm 16.0\%$ (table 2). Within the TWA, parks and playgrounds ($78.2 \pm 22.0\%$) and school location ($72.7 \pm 46.7\%$) were the two highest scoring sections. The parks and playground section was the only subsection to have scored above zero in all communities. Eight communities had a perfect score in the school location subsection. Trails ($35 \pm 39.7\%$) scored lowest with five of the communities scoring zero.

Across all communities the Programs and Policy score was $43.82 \pm 17.97\%$ (table 3). The school policies section ($63.6 \pm 32.3\%$) scored highest and town policies section ($17.3 \pm 30.7\%$) scored lowest. Seven communities scored zero on the town policies section. There were only two communities that did not score a zero on any of the PPA subsections.

One-hundred street segments were assessed across ten communities. One community did not complete this assessment. The Street Segment Assessment score was $69.1 \pm 17.5\%$ (table 4). The (lack of) barriers ($90.0 \pm 21.6\%$) scored highest with an average of 0.7 barriers per street segment. Safety features ($27.6 \pm 18.0\%$) scored lowest

with an average of only 1.38 safety features found in each segment. When broken down into segment type, school zones ($67.9 \pm 3.28\%$) scored highest. Within the school zones road conditions ($95.0 \pm 5.0\%$) scored highest and safety features ($36.6 \pm 6.0\%$) scored lowest with an average of 1.83 safety features present. Segment type neighborhoods ($55.3 \pm 2.22\%$) scored lowest. Within neighborhoods, (lack of) barriers ($85.0 \pm 2.6\%$) scored highest with an average of 0.75 barriers per segment. Safety features ($24.4 \pm 2.2\%$) scored lowest with an average of 1.22 safety features per neighborhood segment.

RALPESS

One hundred and seventy individuals completed the RALPESS assessment (table 5). Across all communities, the RALPESS score was $50.2 \pm 13.8\%$. Schools ($71.0 \pm 24.6\%$) scored highest with nine of the communities agreeing or strongly agreeing that the schools in their communities had playgrounds or other equipment for physical activity or exercise. Churches ($32.6 \pm 20.7\%$) scored lowest with all communities disagreeing or strongly disagreeing when asked if churches in their community encourage or offer options for exercise or physical activity.

Physical Activity Environment and Perception Relationship

No significant relationship was found between the total score on the RALA and RALPESS ($r = 0.48$, $p = 0.16$). No significant relationships were found between the RALPESS and TWA ($r = 0.62$, $p = 0.058$), PPA ($r = -0.13$, $p = 0.72$), or SSA ($r = 0.57$, $p = 0.08$).

Discussion

This study assessed the physical activity environment and community perceptions of the physical activity environment in 11 rural and/or underserved communities in a Midwest state. Schools emerged as a main strength within these communities, as both a strong part of the PA environment and as a perceived strength that supports PA within the community. Street segments near schools were the most walkable of all segment types and were close to the town center suggesting feasibility of walking to and from school. Perceptions of the physical activity environment were highest amongst schools, as individuals perceived schools to provide many opportunities for PA. School policies scored highest, with all but one community having two or more policies in place to support PA within the school environment. Collectively, these findings suggest schools are a strength in rural, underserved communities. This finding is consistent with the finding of Robinson et al. and Perry et al. who utilized the RALA in rural communities in Alabama, Mississippi, and Washington.^{30,31} Perry and Robinson also evaluated the rural PA environment and found that schools were a strength within the communities they studied. Our study expands on these previous findings, by finding schools as a major strength in communities that are even more rural than the communities assessed by Perry and Robinson. Additionally, this study also assessed the perceptions of these communities using the RALPESS which was not previously evaluated by Perry and Robinson.

We found within the PPA, school policies scored the highest of all sections while school programs scored second lowest. Within our study population, nine communities had policies allowing public access to the school's recreation facilities after school hours.

Within school programs, all but two communities had either none or just one program in place. Past studies have assessed the use of schools PA resources in rural communities and have found schools with programs in place resulted in higher use of the schools PA resources and more PA participation by community members when compared to schools that had no programs in place.^{32,33} The present study showed that schools are a strength in the PA environment, despite having a lack of programming. This highlights an opportunity to build upon the strengths of schools within rural, underserved communities and utilize schools as a site for PA programming. The implementation of school programs could allow for more structure and physical activity opportunity, especially in rural communities where other resources may be limited.

Within the RALPESS, the perceptions of schools scored highest, with an average of 8.5 points out of 12, showing that the community members perceived schools to be a great resource for PA support in the community. Majority of individuals in these communities agreed or strongly agreed that schools had playgrounds with equipment that could be used for PA, that there was available equipment for PA or exercise at schools, and that there were different choices for PA or exercise at schools. Many of the questions in the RALPESS ask about different locations and whether they provide opportunity for physical activity. Aside from schools, subsections within the RALPESS scored low suggesting these individuals may not see much opportunity for PA outside of school locations. Scores from the school section were 10-40% higher than all the other sections within the RALPESS. It is evident that schools are a major strength in rural underserved communities therefore; rural underserved communities should build off this existing

strength in order to improve the physical activity environment. Schools are also highly visible within the community and a great way to reach a large proportion of youth.

The present study found that there was no relationship between the PA environment and perception of the PA environment in rural and/or underserved communities within the Midwest. Past studies have been done in rural environments in order to try to understand the relationship between perceptions of the PA environment and the PA environment.^{6,21-23} Previous studies focused on different aspects of the PA environment such as PA facilities, trails and public amenities, all used non-rural assessment tools, and all were completed in different ethnic populations, yet all found little to no agreement between perceptions of the PA environment and the PA environment.^{6,21-23} Comstock et al. assessed the physical activity environment and child perceptions of the PA environment within two rural states using two tools that were developed for urban areas. He found one of the environmental assessment tools did not correlate with the perceptions while the other tool was weakly correlated with perceptions. He speculates the tools used in his study may explain the lack of correlation between the environment and perceptions because they may have failed to adequately capture all physical activity opportunities in rural environments. Within the current study, we used rural tools and still did not find a relationship between the PA environment and perceptions. With the exception of one community, populations within the current study ranged from 480-2,156 individuals. All communities were considered completely or partially rural according to the Rural Urban Continuum Code.³⁴ The RALA was developed and validated in communities with populations ranging from 3,500-23,624 individuals. According to the Rural-Urban Continuum Code these communities would be

considered urban by these standards as they have a population of greater than 2,500³⁴. It is plausible that there is a difference in the types of factors that should be included in an assessment of the PA environment in a rural environment verses an extremely rural environment.

Another plausible explanation for the lack of correlation between perceptions and the physical activity environment could be due to the condition of amenities. Within the current study, parks and playgrounds were found to be the most common amenity as there were at least two present in every community, although over half were rated as being in “poor/fair” condition. This finding of physical activity amenities and their poor condition is consistent with the findings from all previous rural studies that utilized the RALA.^{28,30,31} Poor condition may be due to lack of funding and recourses in these underserved communities. For example, absence of a parks and recreation department may result in less maintenance of public amenities. Parks and playgrounds may be present in all towns but since they are in poor condition it may reflect upon individual’s perceptions.

There are limitations to this study. The assessments were only completed in one state therefore the findings may not be generalizable to rural communities in other states. When assessing perceptions of the physical activity environment we had a small sample size within some of the communities, therefore the perceptions may not represent the entire population within these communities. Additionally, the assessment tools utilized did not take into account the quality of amenities within the scoring system. Including the quality of amenities could influence the scores from the actual physical activity environment. The strengths of this study are that we used rural designed tools in order to

assess the physical activity environments and perceptions, which is something that had not been done in previous research. Many urban assessment tools only assess resources within walking distance. In rural environments, physical activity opportunities may be 15+ miles away and would not be acknowledged if assessed with an urban tool. Additionally, rural assessment tools recognize that the absence of a recreational facility does not mean there is no PA opportunity. For example, in the RALA, there is an “other” option where individuals can write in things they see as resources that are atypical in a more urban environment. Although the RALA and RALPESS are more appropriate assessment tools than those developed for urban environments, they may not be the most ideal for the rural and underserved communities assessed in our study due to the small populations. Future research should focus on assessment tools intended for more frontier environments. To our knowledge, we are the first study to use both the RALA and RALPESS in conjunction. This helps fill the current gap in literature on using rural specific tools in order to assess the association of physical activity environments and perceptions within rural, underserved communities.

The present study extends the current literature by using rural specific tools to assess the PA environment and adult perceptions of the PA environment in rural underserved communities. Consistent with previous literature the present study also found that there was no relationship between the PA environment and perceptions of the PA environment in rural areas when using rural specific tools. Furthermore, data from the present study highlight the wide variability of the term “rural” and the potential need for a more comprehensive PA environment and perception assessment tool that includes PA supports distinct to extremely rural areas.

Conclusion

There is not a relationship between perception of the PA environment and the PA environment in rural and/or underserved communities. The quality of amenities may be a main contributor to the lack of relationship as resources in poor quality may influence the way individuals perceive these PA resources. Lack of relationship may also be due to the possible inability of the assessment tools to capture PA support within extremely rural areas. The present study highlighted that schools are a key hub for physical activity efforts within rural and/or underserved communities. Schools consistently scored high across all physical activity environmental assessments, aside from school programs. Implementation of programs in schools and bringing awareness to these programs may improve the perceptions and physical activity environments in rural communities and promote more physical activity.

APPENDIX

Figure 1: Components of the Rural Active Living Assessment (RALA)

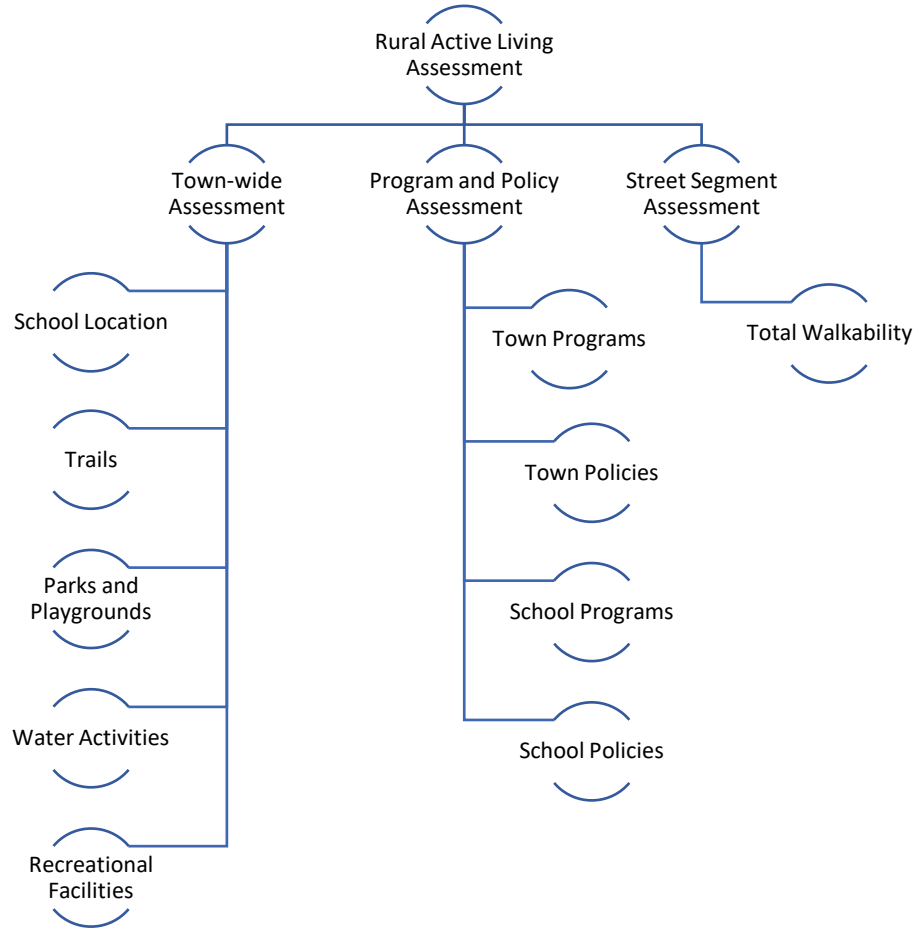


Figure 2: Components of the Rural Active Living Perceived Environmental Support Scale (RALPESS)

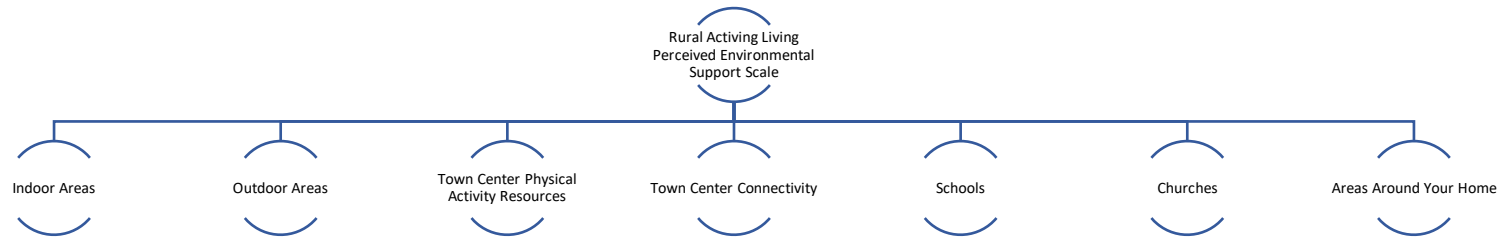


Table 1: Demographics

	City Population	Population Density per sq. mile by County	Rural-Urban Continuum Code	% Rural by County	% Below Poverty Level by City	% AI by City	Adult Obesity Prevalence by County
C1	2,156	31.27	3	61.4%	7.1%	1.2%	30.5%
C2	1,020	2.9	9	100.0%	26.8%	45.4%	36.5%
C3	1,230	4.06	9	100.0%	39.3%	95.5%	41.8%
C4	480	2	9	100.0%	13.6%	7.7%	32.5%
C5	564	1.64	9	100.0%	44.2%	67.0%	45.5%
C6	69,000	36.36	3	20.8%	16.0%	11.0%	27.6%
C7	1,598	8.32	9	100.0%	8.2%	41.2%	35.0%
C8	777	2.29	9	100.0%	39.3%	92.7%	32.6%
C9	546	1.43	9	73.5%	33.4%	62.3%	43.3%
C10	779	6.92	9	100.0%	55.2%	87.9%	37.5%
C11	581	6.49	6	80.0%	65.1%	92.6%	42.9%

C= Community

Table 2: Rural Active Living Assessment: Town-wide Assessment

	School Location (15)	Trails (20)	Parks and Playgrounds (25)	Water Activities (10)	Recreation Facilities (30)	Total Score (100)
C1	15	16	25	5	13	74
C2	15	0	25	10	17	67
C3	0	0	16	5	28	49
C4	15	0	15	5	21	56
C5	15	16	23	0	9	63
C6	0	16	25	4	28	73
C7	15	12	23	9	16	75
C8	15	16	16	9	17	73
C9	15	0	15	0	0	30
C10	0	0	23	5	14	42
C11	15	1	9	1	14	40
Absolute Section Scores	10.9 ± 7.0	7.00 ± 7.9	19.6 ± 5.5	4.8 ± 3.5	16.1 ± 7.9	58.4 ± 16.0
Relative Section Scores	72.7 ± 46.7	35.0 ± 39.7	78.2 ± 22.0	48.2 ± 35.1	53.6 ± 26.6	58.4 ± 16.0

Points possible within each section are shown in parenthesis under the section title

C= Community

Table 3: Rural Active Living Assessment: Program and Policy Assessment

	Town Policies (10)	Town Programs (30)	School Policies (30)	School Programs (30)	Total Score (100)
C1	10	0	15	30	55
C2	0	8	15	10	33
C3	0	16	30	10	56
C4	3	18	15	10	46
C5	3	0	0	0	3
C6	0	30	15	10	55
C7	0	12	15	0	27
C8	3	22	30	10	65
C9	0	12	15	25	52
C10	0	4	30	0	34
C11	0	16	30	10	56
Absolute Section Scores	1.7 ± 3.1	12.6 ± 9.3	19.1 ± 9.7	10.5 ± 9.6	43.8 ± 18.0
Relative Section Scores	17.3 ± 30.7	41.8 ± 30.9	63.6 ± 32.3	34.9 ± 32.0	43.8 ± 18.0

Points possible within each section are shown in parenthesis under the section title

C= Community

Table 4: Rural Active Living Assessment: Street Segment Assessment

	Segments Assessed	Sidewalks (3)	Sidewalk Condition (2)	Buffers (2)	Buffer Condition (2)	Safety Features (5)	Road Condition (2)	Traffic Volume (3)	Barriers (5)	Connectivity (1)	Walkability (4)	Aesthetics (4)	Total Walkability (33)	Relative Community score (Mean±SD)
C1	10	1.9 ± 0.4	1.7 ± 0.2	1.5 ± 0.3	1.4 ± 0.3	1.7 ± 0.2	1.8 ± 0.1	1.9 ± 0.3	4.5 ± 0.3	0.2 ± 0.1	3.0 ± 0.4	3.2 ± 0.3	22.8 ± 1.8	69.1 ± 5.5
C2	12	1.8 ± 0.3	1.2 ± 0.2	1.3 ± 0.3	0.9 ± 0.2	2.0 ± 0.0	1.4 ± 0.2	1.8 ± 0.3	3.4 ± 0.3	0.5 ± 0.2	2.4 ± 0.3	2.2 ± 0.2	18.2 ± 1.5	55.1 ± 4.4
C3	10	0.3 ± 0.2	0.8 ± 0.3	0.0	0.0	0.9 ± 0.2	1.3 ± 0.2	2.1 ± 0.2	4.5 ± 0.2	0.3 ± 0.2	2.4 ± 0.3	2.3 ± 0.2	14.6 ± 0.9	44.2 ± 2.8
C4	8	1.3 ± 0.4	1.1 ± 0.2	1.6 ± 0.3	1.3 ± 0.3	2.0 ± 0.0	2.0 ± 0.0	2.4 ± 0.3	4.0 ± 0.2	0.3 ± 0.2	1.8 ± 0.5	3.5 ± 0.2	21.1 ± 1.4	64.0 ± 4.3
C6	11	2.6 ± 0.3	1.7 ± 0.2	1.5 ± 0.3	1.5 ± 0.3	1.4 ± 0.2	1.8 ± 0.1	2.3 ± 0.3	4.9 ± 0.2	1.0 ± 0.0	3.2 ± 0.2	2.8 ± 0.2	22.4 ± 1.0	67.8 ± 3.2
C7	30	1.4 ± 0.2	1.0 ± 0.2	1.1 ± 0.1	1.5 ± 1.7	1.5 ± 0.2	1.9 ± 0.1	2.1 ± 0.2	4.8 ± 0.8	0.1 ± 0.1	2.9 ± 0.2	3.0 ± 0.14	20.6 ± 1.1	62.5 ± 3.2
C8	10	1.2 ± 0.3	1.0 ± 0.2	0.4 ± 0.3	0.4 ± 0.3	0.3 ± 0.2	1.2 ± 0.2	3.0 ± 0.0	4.5 ± 0.2	0.9 ± 0.1	2.4 ± 0.2	1.7 ± 0.3	16.9 ± 1.0	51.2 ± 2.9
C9	1	1.0	1.0	0.0	0.0	3.0	1.0	3.0	3.0	NA	3.0	2.0	17.0	51.5
C10	1	3.0	NA	2.0	NA	1.0	1.0	NA	3.0	1.0	3.0	3.0	17.0	51.5
C11	7	1.4 ± 0.4	1.0 ± 0.3	0.9 ± 0.4	0.6 ± 0.3	0.9 ± 0.4	1.4 ± 0.2	1.4 ± 0.3	3.0 ± 0.3	0.7 ± 0.2	1.7 ± 0.3	3.0 ± 0.3	16.0 ± 2.3	48.5 ± 6.9
Absolute section score	100	1.5 ± 1.2	1.2 ± 0.8	1.1 ± 0.9	1.0 ± 0.9	1.4 ± 0.9	1.7 ± 0.5	2.1 ± 0.9	4.3 ± 0.9	0.5 ± 0.5	2.6 ± 1.0	2.7 ± 0.9	19.4 ± 5.4	
Relative section score		63.3 ± 39.9	85.0 ± 33.7	75.0 ± 42.5	70.0 ± 48.3	34.0 ± 13.5	90.0 ± 21.1	63.3 ± 29.2	90.0 ± 21.6	20.0 ± 42.2	75.0 ± 28.9	80.0 ± 19.7	69.1 ± 17.5	

Points possible within each section are shown in parenthesis under the section title

C= Community

Table 5: Rural Active Living Perceived Environmental Support Scale

	Assessments Completed	Indoor Areas (24)	Outdoor Areas (12)	Town Center Connectivity (24)	Schools (12)	Town Center PA Resources (12)	Churches (28)	Areas Around the Home (20)	Total Score (132)
C1	5	17.2 ± 3.6	4.8 ± 3.4	14.2 ± 8.2	6.4 ± 4.8	5.2 ± 3.7	5.4 ± 5.3	10.4 ± 6.0	63.6 ± 26.1
C2	15	12.8 ± 7.0	4.8 ± 2.8	16.5 ± 1.6	7.9 ± 2.8	6.3 ± 2.1	5.4 ± 5.1	10.1 ± 2.7	63.8 ± 12.3
C3	7	9.1 ± 4.4	3.7 ± 2.0	8.1 ± 4.7	6.6 ± 3.8	3.9 ± 2.3	11.3 ± 6.2	7.4 ± 4.2	50.1 ± 17.3
C4	10	17.7 ± 2.6	7.4 ± 2.0	18.2 ± 3.5	9.4 ± 1.7	7.3 ± 1.0	9.7 ± 4.7	10.4 ± 3.0	80.1 ± 8.9
C5	6	7.5 ± 2.8	2.8 ± 1.0	12.2 ± 3.1	9.3 ± 2.0	3.7 ± 1.2	4.8 ± 3.1	10.7 ± 3.2	51.0 ± 8.1
C6	21	14.1 ± 6.9	6.1 ± 3.1	17.1 ± 5.2	7.3 ± 3.3	7.9 ± 7.9	7.1 ± 6.2	11.7 ± 4.2	71.1 ± 22.0
C7	41	15.6 ± 4.9	6.8 ± 2.3	16.2 ± 3.6	10.5 ± 1.3	6.6 ± 1.8	9.0 ± 5.4	10.6 ± 3.7	75.4 ± 11.8
C8	8	19.4 ± 4.0	5.8 ± 3.3	14.8 ± 5.6	7.3 ± 4.2	7.6 ± 3.6	14.0 ± 6.8	11.3 ± 5.1	80.0 ± 27.8
C9	40	9.5 ± 4.3	4.8 ± 1.7	13.1 ± 4.3	8.1 ± 3.0	4.8 ± 2.1	10.3 ± 5.3	8.2 ± 3.7	58.6 ± 16.8
C10	6	7.8 ± 3.3	4.3 ± 1.5	11.8 ± 2.5	8.7 ± 3.0	6.3 ± 1.8	12.3 ± 3.5	12.2 ± 2.6	63.5 ± 8.6
C11	11	9.1 ± 5.3	3.3 ± 0.7	11.4 ± 2.6	7.7 ± 1.9	3.6 ± 2.0	11.2 ± 6.9	7.5 ± 3.1	53.6 ± 13.5
Absolute Section Scores	170	12.8 ± 5.6	5.4 ± 2.6	14.7 ± 4.7	8.5 ± 3.0	5.9 ± 3.6	9.1 ± 5.8	9.8 ± 3.9	66.3 ± 18.3
Relative Section Scores		53.1 ± 24.9	45.1 ± 21.3	61.1 ± 19.5	71.0 ± 24.6	49.4 ± 30.0	32.6 ± 20.7	49.2 ± 19.6	50.2 ± 13.8

Points possible within each section are shown in parenthesis under the section title

C= Community

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