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Apr 18th, 10:50 AM - 11:10 AM

Utilizing community-based participatory research strategies to determine intervention strategies for childhood obesity prevention in a community on a Native American Reservation

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Shankle, Lindsey; Tryon, Michael; Harris, Kari Jo; Swaney, Gyda; Bodnar, Brenda; and Brown, Blakely, "Utilizing community-based participatory research strategies to determine intervention strategies for childhood obesity prevention in a community on a Native American Reservation" (2015). *UM Graduate Student Research Conference (GradCon)*. 3.

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Abstract

Childhood obesity is a complex public health issue that impacts physical and psychological health, academic success and future health outcomes. As of 2012, nearly 17% of children and adolescents in the United States were classified as obese, and the rate is approximately 10% higher for children of color than it is for white children.¹ The intricacies associated with childhood obesity suggest a community-based approach may be necessary to achieve measurable and sustainable reductions in childhood obesity.

To determine initial intervention strategies for addressing childhood obesity in one community (population ~25% Native American) on a Native American Reservation in the Northwestern United States, this study utilized the Community Readiness key informant interview approach² from Colorado State University. Six key informants were selected at random and interviewed by members of a community-university partnership. These informants were selected from five randomly selected community sectors in addition to a preselected community member sector. The six interviews were then conducted using a standardized questionnaire, one via telephone and five in person. Each interview was audio recorded and members of the research team summarized responses into text, which was used for scoring. Three coders followed the anchored scoring protocol in the Colorado State University Community Readiness Manual to score each interview across six dimensions. Each dimension was assigned a numeric score ranging from 1 to 9, with 1 indicating little readiness and 9 indicating very high readiness. The six dimensions coded were: community efforts, community knowledge of efforts, leadership, community climate, knowledge about the issue, and resources for prevention efforts. Once each of the six interviews was independently scored, the three scorers met to determine consensus scores for each of the dimensions.

To determine the inter-rater reliability, the codes from each of the raters were compared to each other, and additionally compared to the consensus score by calculating both exact agreement and near agreement (+/- 1 score). Three researchers, one from the Reservation community, a faculty member who has previously worked with the Reservation community, and a graduate student new to the community, scored each of the six interviews. Agreement was defined as the number of agreements divided by the number of agreements plus disagreements between raters. The faculty member and the student, and the community member and the student both shared the highest rate of exact agreement (50%), followed by the faculty member and the community member (47%). The exact agreement with the consensus score was highest with the community member (72%), followed by the student (61%) and the faculty member (56%). Calculating the percent agreement using adjacent categories, with the threshold for agreement being within +/-1, it was found that the highest agreement was between the community and faculty member (92%), followed by the community member and student (89%). The faculty member and student had the lowest level of agreement (78%). Levels of agreement with the consensus score and coders

also varied, with the highest level agreement found by the community member (97%) and student (97%), followed by the faculty member (89%).

Researchers explored different methods to assess rater agreement in scoring the interviews. Results suggest that the exact agreement method yielded low agreement scores, but agreement was considerably higher when using the adjacent category method. The adjacent category method may be sufficient given the goal of the community readiness process is to identify potential candidate interventions that will ultimately be further discussed by community members. The Community Readiness key informant interview process is one way to assess the community's readiness to address childhood obesity and assist with the selection of intervention strategies. Based on direction from the project's Advisory Board, the interview process may be replicated in additional communities to determine how to best implement childhood obesity strategies in each community. While the data have not been released for analysis, the process of key informant interviews suggested changes that may improve future iterations of the assessment of community readiness for childhood obesity interventions.

¹ Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2014, February 26). Prevalence of childhood and adult obesity in the United States, 2011-2012 [Electronic version]. *Journal of the American Medical Association*, 311(8), 1-9.

² Plested, B. A., Jumper-Thurman, P., & Edwards, R. W. (2009). *Community Readiness Manual*. Fort Collins, CO: Colorado State University.

Funding statement: Research reported in this publication was supported by the Eunice Kennedy Shriver National Institute Of Child Health & Human Development of the National Institutes of Health under Award Number R13HD080904. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.