

2016

Parent perceptions of a child physical activity initiative in a rural community.

Katie F. Leslie
University of Louisville

Kristi M. King
University of Louisville

Richard W. Wilson
University of Louisville

Patricia Gagne
University of Louisville

V. Faye Jones
University of Louisville

Follow this and additional works at: <http://ir.library.louisville.edu/faculty>



Part of the [Community Health and Preventive Medicine Commons](#), and the [Sports Sciences Commons](#)

Original Publication Information

Leslie, Katie F., et al. "Parent Perceptions of a Child Physical Activity Initiative in a Rural Community." 2016. *American Journal of Health Studies* 31(2): 103-110.

ThinkIR Citation

Leslie, Katie F.; King, Kristi M.; Wilson, Richard W.; Gagne, Patricia; and Jones, V. Faye, "Parent perceptions of a child physical activity initiative in a rural community." (2016). *Faculty Scholarship*. 328.
<http://ir.library.louisville.edu/faculty/328>

PARENT PERCEPTIONS OF A CHILD PHYSICAL ACTIVITY INITIATIVE IN A RURAL COMMUNITY

Katie F. Leslie, PhD, MS
Kristi M. King, PhD, CHES
Richard W. Wilson, DHSc, MPH
Patricia Gagne, PhD
V. Faye Jones, MD, PhD, MSPH

Abstract: *This study assessed the extent to which a community-based intervention developed for children impacted parent perceptions and behaviors toward physical activity in a rural community. Focus groups and individual interviews were conducted with parents of children who participated in physical activity programs. Analysis revealed an increased community awareness surrounding physical activity following program implementation. Parents and children encouraged each other to be physically active. Ecological barriers and enabling factors to adult physical activity were identified. These findings indicate a bidirectional influence between parent and child physical activity and the need for community facilities where families can be active together.*

Keywords: *Physical Activity, Community Intervention, Qualitative Research*

INTRODUCTION

Rural residency is an important predictor of health status, with adults living in rural areas experiencing high rates of obesity and physical inactivity (Befort, Nazir, & Perri, 2012; Parks, Housemann, & Brownson, 2003; Patterson, Moore, Probst, & Shinogle, 2004). Adults living in the rural South are significantly more likely to be physically inactive than their urban counterparts, even when controlling for socio-demographic variables (Martin et al., 2005). Monetary costs and geographic distance to physical activity facilities and programs create significant barriers to physical activity for rural adults (Powell, Slater, Chaloupka, & Harper, 2006).

Recognizing a need to improve community health, a coalition of leaders in a rural Kentucky county sought to increase access to physical activity programming for all residents. Though no recreational center existed and with the goal to eventually build a fully operational physical activity center available to all community residents, a non-profit organization was established with a variety of programs implemented in borrowed locations including schools, churches, and donated land. The preliminary focus centered on child physical activity in the community with nearly 800 children participating in programs to date, utilizing the

strategy to first engage children as a way to extend behavior change to other members of the community. With the success of programming for children, the coalition began offering adult programs as well. However, expansion posed challenges for program directors given limited financial, human, and facility resources within the rural community. Therefore, it was essential to understand the influence of children's engagement in physical activity programming on parents and other community adults in anticipating adult needs and participation in future programming.

Literature Review

Parental influence on child health behaviors, including physical activity, is well documented (Bauer, Nelson, Boutelle, & Neumark-Sztainer, 2008; Zecevic, Tremblay, Lovsin, & Michel, 2010). Parental influence is one of the most frequently studied social correlates of child and adolescent physical activity (Sallis, Prochaska, & Taylor, 2000). However, bidirectional associations between parents and children in health behaviors are seldom considered and need further exploration (Craig, Cameron, & Tudor-Locke, 2013; Sallis & Nader, 1998).

Using children as a proxy to reach parents is not a new strategy in health promotion literature;

Send correspondence to **Katie F. Leslie, PhD, MS**, Program Director, Health Sciences Center Office of Diversity and Inclusion, 323 E. Chestnut St., Suite 502, University of Louisville, Louisville, KY 40202, katie.leslie@louisville.edu, 502-852-7159; , Kristi M. King, PhD, CHES 2, Department of Health and Sport Sciences, College of Education and Human Development, University of Louisville, Louisville, KY; Richard W. Wilson, DHSc, MPH, Department of Health Promotion and Behavioral Sciences, School of Public Health and Information Sciences, University of Louisville, Louisville, KY; Patricia Gagne, PhD, Department of Sociology, College of Arts and Sciences, University of Louisville; V. Faye Jones, MD, PhD, MSPH, Health Sciences Center Office of Diversity and Inclusion, University of Louisville, Louisville, KY, Department of Pediatrics, School of Medicine, University of Louisville, Louisville, KY.

however, empirical evidence to substantiate this intuitive strategy is very limited. Heim, Bauer, Stang, and Ireland (2011) demonstrated the influence children have on their parents in food purchasing and consumption behaviors. Coffield, Nihiser, Sherry, and Economos (2015) found decreased parent body mass index (BMI) resulting from a community childhood obesity intervention.

There is a need for further research into interpersonal influences between family members. Descriptive studies are needed to establish predictors and enabling factors regarding this relationship. The purpose of this study was to assess the extent to which community-based interventions developed for children impact parent perceptions and behaviors toward physical activity in a rural community.

Theoretical Framework

Ecological models, commonly used in community health promotion studies, assert that behavior affects and is affected by multiple levels of influence (Sallis, Owen, & Fisher, 2008). The individual is at the center (intrapersonal level) surrounded by bands of influence representing interpersonal, organizational, community, and policy levels. Within this model, the interpersonal processes and groups providing identity and support, including familial relationships, are accounted for at the interpersonal level of influence (Sallis et al., 2008). This includes family members, close friends, or other close, important figures that may have influence on behavior. Organizational influences include workplaces, schools or other significant institutions. The community level may include the neighborhood or community where one belongs, while policy includes laws, policies, or regulations.

Ecological models are well suited for community physical activity interventions, as physical activity takes place at specific locations, such as community centers, parks, trails, and other fitness venues (Sallis et al., 2006). Numerous studies employed an ecological framework to describe influences of child physical activity (Kellou, Sandalinas, Copin, & Simon, 2014; Langille & Rodgers, 2010; Mehtala, Saakslähti, Inkinen, & Poskiparta, 2014). However, in these cases, the child was the individual with parents and family members placed within the interpersonal level of influence.

METHODOLOGY

Participants were recruited from the pool of parents of 800 child physical activity program participants. Recruitment strategies included posting informational flyers throughout the small town and the director of youth programming sent email invitations to parents of program participants. Current or past coalition members and staff

were excluded. Only one adult per household was eligible to participate. Written informed consent was obtained from all participants. The university Institutional Review Board approved this study.

Data Collection

Data were collected through individual interviews and focus groups between November 2014 and February 2015. While the intention was to only conduct focus groups, scheduling challenges resulted in the inclusion of individual interviews. Utilizing both methods allowed for in depth exploration of experiences at the individual level and group interplay surrounding experiences through group discussions. All employed a semi-structured interview guide with questions centered on parent and child physical activity behaviors within levels of the ecological model. Examples of questions included “Discuss if the program influenced your child’s physical activity” to assess the interpersonal level of the ecological model; “How has your child’s involvement in the program’s activities affected you?” and “Tell me about your community. How would you describe your community in terms of physical activity in children and adults?” to assess the community level characteristics of the ecological model.

The primary author facilitated all focus groups and interviews, which were held in private rooms in convenient community locations. Focus groups lasted approximately 60 minutes, and individual interviews lasted approximately 30 minutes. Discussions were captured through digital audio recording devices and transcribed verbatim by an outside agency. Participants used pseudonyms so that no names or personal identifiers were attached to audio files or transcripts. A short demographic questionnaire was administered after each interview or focus group. All participants were provided with a meal.

Data Analysis

Data were analyzed using a grounded theoretical approach, which identifies patterns and themes, then builds concepts and connects them together into a theoretical explanation that accounts for the lived experiences of those studied (Charmaz, 2006). Completed transcripts were checked for accuracy and uploaded into QSR NVivo 10. Open, line-by-line coding occurred as data were collected and transcripts completed. Axial coding explored relationships and connections between initial codes. Conceptual categories were created and grouped into main and subcategories, which were further examined across contextual, demographic, and experiential properties to link these relationships.

All authors served as peer debriefers, reviewing codes and categories assigned during data analysis

to enhance credibility and ensure validity. Triangulation of sources was measured by running matrix-coding queries to quantify numbers of participants who talked about various concepts and codes, systematically examining similarities and differences in responses across attributes. Data analysis in QSR NVivo 10 assured dependability and confirmability through a detailed audit trail. Data collection ended after theoretical saturation was achieved, as no new information was attained from the final two focus groups.

RESULTS

Twenty-one parents participated in the study through individual interviews ($n = 8$) and 4 focus groups ($n = 13$). Parents ranged in age from 27-50 years old, with a mean age of 39.2 years. Participants were mostly female ($n = 20$; 95%) and identified as non-Hispanic White ($n = 20$, 95%). The average length of time residing in the community was 19.3 years. Sixty-two percent had a college degree, and the majority ($n = 16$; 76%) were employed full-time. All participants were married. Almost two-thirds of the children were frequent participants of physical activity programming and over one-third of the children had participated since the inception of the programming 3 years prior.

Four main conceptual findings influencing parental physical activity perceptions and behaviors emerged from the data and are framed within the ecological model. At the interpersonal and community levels, parents described "Family Central to Community Identity." An "Increased Community Priority in Physical Activity" occurred through changes at the community and policy levels. At the intrapersonal and interpersonal levels, "Children Influence Parent Physical Activity," describe the reciprocal influence that children and parents have on each other's physical activity perceptions and behaviors. Finally, "Barriers to Parent Physical Activity" within the individual, organizational, and community level are presented. Direct quotations are provided to assist in illustrating each concept and the interrelationships among concepts.

Family Central to Community Identity

When describing the community, all participants spoke of the importance of family. Children were described as central to parents' identities and social circles. Social networks were formed with parents of other children, which ties to both the interpersonal and community levels of the ecological model. When discussing her social circle, a 33-year-old mother of two explained, "[We] all have kids... that's pretty much [what] brought us together. My world revolves around my children."

For community newcomers, child participation

in the programs was key to developing friendships and community connections for both children and adults. A 41-year-old mother who had lived in the community for two years shared her experience:

When I moved here I didn't know anybody, my husband was still in Virginia for a year. [My daughter] started the program and school was starting, and I didn't know what I was going to do for after school care. Then we met his daughter [referring to another participant], being a counselor with the summer camps, and she became my daughter's after school babysitter. So she had to be all involved with their family, best friends with her kid, get to know all of his other kids.

Increased Community Priority in Physical Activity

Participants identified an increased community awareness regarding the importance of physical activity following the inception of the program. A 34-year-old mother of one described the changes she experienced as, "The community as a whole is trying to drive kids [to be more physically active]. In doing so, it impacts a family as a whole... It definitely starts with the family." New initiatives targeting children, adults, or entire families are present in the community.

Children in the community were exposed to a variety of sports and physical activity opportunities through programming. Parents viewed these programs as tools promoting healthy behaviors in their children. A 44-year-old mother of three described the influence of the programs:

I think it's given them something to be excited about. My generation, exercise is not necessarily exciting or not everyone looks forward to exercising, but I think what I'm trying to teach and I think the [program] promotes it, is to instill in a young age that it's just your lifestyle. It's not a chore. It's not something that you have to dread doing. It's just part of your everyday routine, and you don't know any different. That's the way I look at it with my girls. If they start now, it's not going to be a chore for them. It's going to be routine.

These programs normalized physical activity for children, and parents were hopeful that this would lead to lifelong healthy behaviors.

Outside of the programs for children, parents identified other new opportunities for physical activity within the community. One of the county elementary schools implemented a monthly Family Fitness Night initiative during the academic year, with approximately 40 families participating. Other primary schools were developing similar initiatives. Community schools also instituted policy changes for bi-annual fitness and health testing within the

physical education curriculum. Participants indicated that investments were made to upkeep and enhance community parks, walking trails, and other public spaces to increase opportunities for residents to live active lives. The county library created free adult fitness classes while new for-profit fitness facilities and new community running and walking races emerged.

Children Influence Parent Physical Activity

Participants were asked about their own physical activity. When reporting physical activity completed on their own or with other adults, responses were quite limited with most participants only naming one activity or none at all. This corresponded to low self-reported physical activity on the demographic questionnaire. However, when participants described physical activities that they engaged in with their children, responses were much more diverse. Parent physical activity relied heavily on joint activities that families participated in together.

Parents and children encouraged and motivated each other to be physically active. Most parents categorized the initiation of parent-child joint activity as a “50/50” relationship. Younger children initiated joint physical activity more often than adolescents, as adolescents were less likely to engage in any activity with their parents. One mother described how she and her 7-year-old son motivated each other to be active; “We do a little bit of both. My son maybe more probably than we do, but we may suggest something, but a lot of times he’ll say, ‘Can we go to...’ So it’s probably a little bit of both.”

Child participation in programs directly influenced parent physical activity as children often practiced sports at home with parents and other family members. In reference to her daughter’s participation in the programs, one mother simply stated, “It has made me more active by making her more active.” As children were introduced to new and different sports through the programs, they shared these experiences and engaged other family members in these activities. A 44-year-old mother of three described the influence of her child’s participation in soccer on her own physical activity:

It’s been good for us as a family because it gives the kids an opportunity to try different things. I’ve never played soccer as a kid, so it gives us a chance, and so as they’re learning something we go home and we kick the soccer ball around.

Parents were supportive of programming efforts and encouraged their children to be physically active. As a mother of four explained, “There’s more emphasis in the schools and the children know that

they need to be active. And parents are encouraging that and trying to stay active with the kids.” While parents perceived that they were only providing social support and motivation for their children, they were physically active along with them.

Barriers to Parent Physical Activity

While children did influence parent physical activity, that effect was mitigated by the availability and accessibility of physical activity opportunities for adults in the community. Current offerings were expensive, inconsistent, and/or inconvenient for parents’ busy schedules. Parents described the organization’s adult program offerings as “seasonal” and “sporadic,” with little promotion of adult physical activity programs and difficulties accessing information on the organization’s website. Parents were also unsure of the benefits afforded by adult memberships.

Outside of the organization’s offerings, there were only two indoor spaces in the community dedicated to adult physical activity, with limited hours, no childcare and costly membership fees. Participants identified several free outdoor spaces within the community where they could be physically active. They indicated engaging in these activities as families with their children. However, participants only utilized these spaces seasonally. As a mother who reported that she participated in little to no physical activity each week explained:

It’s hard in the wintertime for me to get physical activity. I like to be outside, but it is definitely challenging in the wintertime when it’s cold and nasty out. In the summertime, we swim a lot. We walk. We go down to [the Falls] and walk and bike rides there like that. We’re definitely lacking in the wintertime though.

Participants identified other indoor opportunities for adult physical activity in the community, but these were held in borrowed spaces and offered at inconsistent times.

In addition to the time constraints surrounding work obligations, scheduling challenges resulted from child participation in activities. Parents discussed the challenges of having multiple children enrolled in programming. Because all programs were conducted in borrowed spaces, different age groups met during different months, at various locations, and at different times. Parents talked about many hours spent sitting and watching their kids participate in sports and physical activities. This allowed for little time for parents to engage in physical activity themselves.

When parents had availability in their schedules, there were additional barriers to physical activity due to the lack of childcare. They spoke of feeling selfish in asking friends, family members,

or neighbors to watch their children, and indicated that they were unwilling to pay someone to watch their children for this purpose. To address these barriers, nearly all participants expressed the desire for a community space where parents and children could be physically active together. One mother described her vision as:

[A place] where you can actually take your kids with you. They can do their exercise programs or whatever they have going on while the adults are doing their own. That way the whole family is getting their exercise in.

DISCUSSION

Overall, the project served as a catalyst for community change, facilitating an increased awareness of the importance of physically active lifestyles. Investments were made to enhance community parks, walking trails, and other public spaces to increase opportunities for all residents to live active lives. Access to such public spaces is a highly effective strategy to increase physical activity and reduce obesity in communities (Evenson, Sallis, Handy, Bell, & Brennan, 2012; Sallis et al., 2006; Task Force on Community Preventive Services, 2002). This initiative led to new family and adult fitness events and programs in the community, although most participants were not engaged in these programs due to logistical or financial considerations.

There were both direct and indirect effects of child participation in the programs. When children were introduced to new sports, they shared these experiences and engaged parents in these activities. Parents supported and encouraged their children to be physically active, and were eager to engage in joint activities with their children. Participant descriptions of family exercise revealed a bidirectional influence of physical activity initiation. However, child participation in programming placed greater demands on parent schedules. Offering adult physical activity programs while child activities are taking place may result in higher rates of adult participation.

Participants identified barriers to parent physical activity. At the community level, there were few available and accessible physical activity opportunities for adults. These findings are consistent with other studies that highlight the lack of access to facilities as a significant barrier to adult physical activity in rural communities (Humpel, Owen, & Leslie, 2002; Lovasi, Hutson, Guerra, & Neckerman, 2009; McCormack & Shiell, 2011; Powell et al., 2006). Consistent with findings from Mailey, Huberty, Dinkel, and McAuley (2014), scheduling constraints were a commonly reported barrier to parent activity. Parents of small children identified lack of childcare as an additional obstacle, similar to

the findings of Hamilton and White (2010) which highlighted the need to allow time for parent physical activity. Thus, access to exercise facilities with available childcare may increase parent physical activity levels. A centralized space for child and adult programs, with available childcare, would mitigate most of the ecological barriers to physical activity faced by adults in this community.

Limitations of the Study

The community focus on family and importance of children to adult socialization should be considered when generalizing findings to other populations. While other small communities may have similar features stereotypical of rural residency, these characteristics may not be present in all populations. Also, the initiative examined in this study was an extension of a multi-year, community-based physical activity intervention, in which other researchers from the university worked in partnership with the community. Other populations may not have access to funding opportunities, program design, and implementation guidance as afforded when working with a university partner.

Participant recruitment and enrollment relied on a relatively small, but appropriate given the study design, convenience sample. There were recruitment challenges in enrolling males into the study. While most men did supply their wives' contact information, they were unwilling to be interviewed themselves. Butera (2006) described difficulties in recruiting men as participants in qualitative research interviews. When generalizing these findings to parents in other communities, it is important to keep in mind that only one participant was male, most were white, and all were married. The experiences may not be representative of that of all parents in the community.

CONCLUSIONS

This study served as an important step in addressing gaps in the literature pertaining to interpersonal family physical activity behaviors. Findings indicate a bidirectional influence between parent and child physical activity behaviors and the need for community recreational facilities where both children and adults can be physically active together. Results aid in identifying predictors and enabling factors in family physical activity behaviors. While this project serves as an important case study, further research is needed to examine the effects of child-targeted interventions on parental health behaviors and outcomes.

As other communities adopt child-focused physical activity programs, future research should consider the impact on parents from inception. In addition to tracking changes in child health

behaviors and outcomes, parent physical activity levels, BMI, or other quantitative measures should be assessed at baseline and followed longitudinally to determine the full impact of these interventions. High rates of obesity and physical inactivity in both

child and adult populations persist with limited resources to address these issues. These bidirectional influences between family members may enhance the return on investment and public health benefits of community-based physical activity interventions.

Table 1. Demographic characteristics of sample (n = 21)

Characteristics	Freq	(%)
Gender		
Male	1	(5)
Female	20	(95)
Race/Ethnicity		
Non-Hispanic White	20	(95)
Native American	1	(5)
Time in community, years		
Mean (Range)	19.3	(7mo.-48yrs.)
0-4	4	(19)
5-9	3	(14)
10-19	5	(24)
20-29	2	(10)
30-39	4	(19)
40+	3	(14)
Education		
Some college/technical training	2	(10)
Technical/Associates Degree	6	(28)
College Degree	13	(62)
Work Status		
Full-time	16	(76)
Part-time/Seasonal	3	(14)
Homemaker	2	(10)
Marital Status		
Married	21	(100)
Level of Physical Activity, times/week ≥ 30 min moderate PA)*		
<1	5	(24)
1-2	2	(10)
3-4	8	(38)
5-6	5	(24)
7+	1	(5)
Number of Children		
1 child	10	(47)
2 children	4	(19)
3 children	6	(29)
4 children	1	(5)

*Percentages do not add to 100 due to rounding

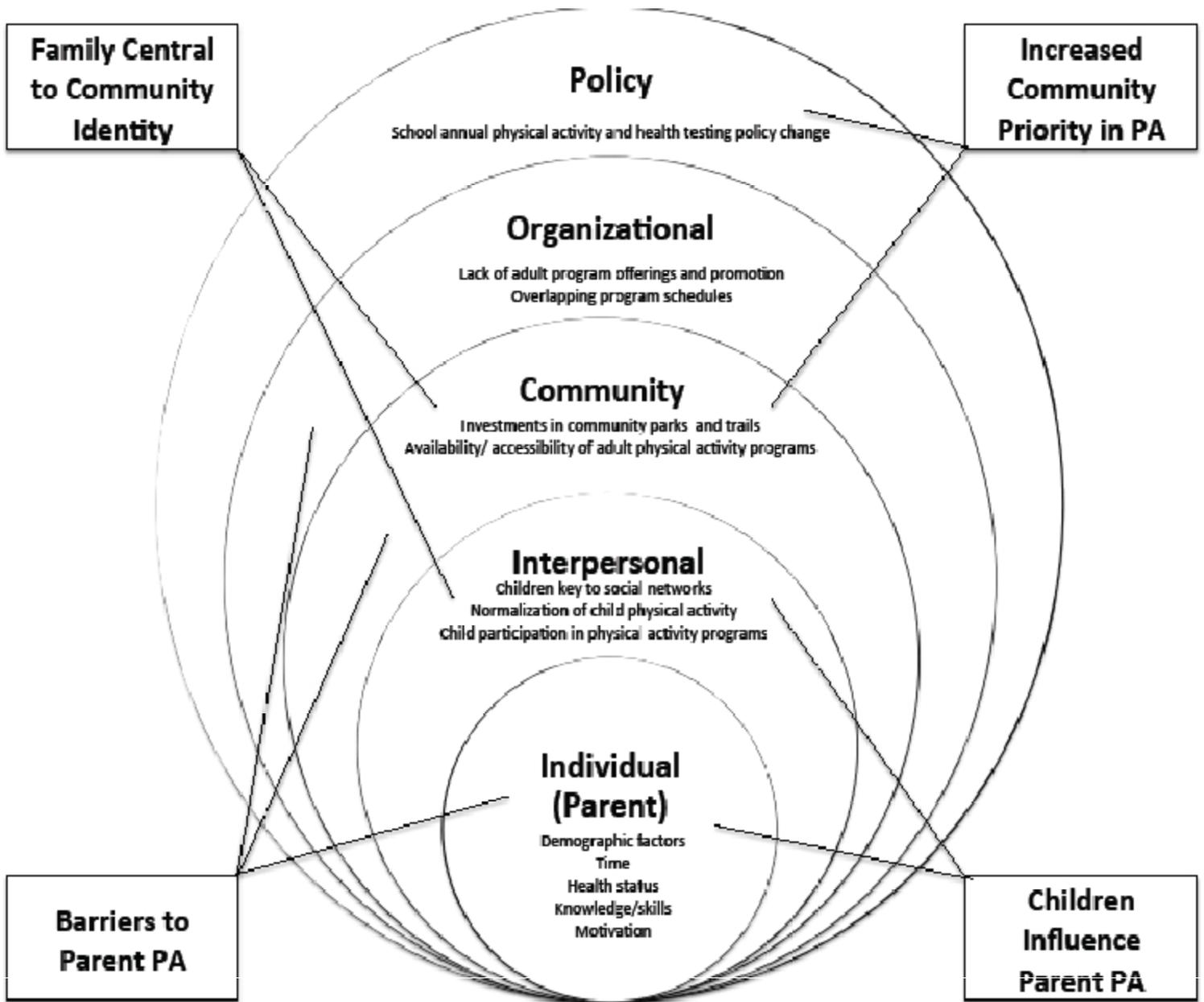


Figure 1. Ecological barriers and enabling factors to parent physical activity following a community child physical activity intervention

References

- Bauer, K. W., Nelson, M. C., Boutelle, K. N., & Neumark-Sztainer, D. (2008). Parental influences on adolescents' physical activity and sedentary behavior: Longitudinal findings from Project EAT-II. *Int J Behav Nutr Phys Act*, 5, 12.
- Befort, C. A., Nazir, N., & Perri, M. G. (2012). Prevalence of obesity among adults from rural and urban areas of the United States: Findings from NHANES (2005-2008). *J Rural Health*, 28(4), 392-397.
- Butera, K. J. (2006). Manhunt: The challenge of enticing men to participate in a study on friendship. *Qualitative Inquiry*, 12(6), 1262-1282.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.
- Coffield, E., Nihiser, A. J., Sherry, B., & Economos, C. D. (2015). Shape up Somerville: Change in parent body mass indexes during a child-targeted, community-based environmental change intervention. *Am J Public Health*, 105(2), e83-e89.
- Craig, C. L., Cameron, C., & Tudor-Locke, C. (2013). Relationship between parent and child pedometer-determined physical activity: a sub-study of the CANPLAY surveillance study. *Int J Behav Nutr Phys Act*, 10, 8.
- Evenson, K. R., Sallis, J. F., Handy, S. L., Bell, R., & Brennan, L. K. (2012). Evaluation of physical projects and policies from the Active Living by Design partnerships. *Am J Prev Med*, 43(5 Suppl 4), S309-319.
- Hamilton, K., & White, K. M. (2010). Parental physical activity: exploring the role of social support. *Am J Health Behav*, 34(5), 573-584.
- Heim, S., Bauer, K. W., Stang, J., & Ireland, M. (2011). Can a community-based intervention improve the home food environment? Parental perspectives of the influence of the delicious and nutritious garden. *J Nutr Educ Behav*, 43(2), 130-134.
- Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity: a review. *Am J Prev Med*, 22(3), 188-199.
- Kellou, N., Sandalinas, F., Copin, N., & Simon, C. (2014). Prevention of unhealthy weight in children by promoting physical activity using a socio-ecological approach: What can we learn from intervention studies? *Diabetes Metab*, 40(4), 258-271.
- Langille, J. L., & Rodgers, W. M. (2010). Exploring the influence of a social ecological model on school-based physical activity. *Health Educ Behav*, 37(6), 879-894.
- Lovasi, G. S., Hutson, M. A., Guerra, M., & Neckerman, K. M. (2009). Built environments and obesity in disadvantaged populations. *Epidemiol Rev*, 31, 7-20.
- Mailey, E. L., Huberty, J., Dinkel, D., & McAuley, E. (2014). Physical activity barriers and facilitators among working mothers and fathers. *BMC Public Health*, 14, 657.
- Martin, S. L., Kirkner, G. J., Mayo, K., Matthews, C. E., Durstine, J. L., & Hebert, J. R. (2005). Urban, rural, and regional variations in physical activity. *J Rural Health*, 21(3), 239-244.
- McCormack, G. R., & Shiell, A. (2011). In search of causality: A systematic review of the relationship between the built environment and physical activity among adults. *Int J Behav Nutr Phys Act*, 8, 125.
- Mehtala, M. A., Saakslahhti, A. K., Inkinen, M. E., & Poskiparta, M. E. (2014). A socio-ecological approach to physical activity interventions in childcare: A systematic review. *Int J Behav Nutr Phys Act*, 11, 22.
- Parks, S. E., Housemann, R. A., & Brownson, R. C. (2003). Differential correlates of physical activity in urban and rural adults of various socioeconomic backgrounds in the United States. *J Epidemiol Community Health*, 57(1), 29-35.
- Patterson, P. D., Moore, C. G., Probst, J. C., & Shinogle, J. A. (2004). Obesity and physical inactivity in rural America. *J Rural Health*, 20(2), 151-159.
- Powell, L. M., Slater, S., Chaloupka, F. J., & Harper, D. (2006). Availability of physical activity-related facilities and neighborhood demographic and socioeconomic characteristics: A national study. *Am J Public Health*, 96(9), 1676-1680.
- Sallis, J. F., Cervero, R. B., Ascher, W., Henderson, K. A., Kraft, M. K., & Kerr, J. (2006). An ecological approach to creating active living communities. *Annu Rev Public Health*, 27, 297-322.
- Sallis, J. F., & Nader, P. R. (1998). Family determinants of health behaviors. In D.S. Gochman (Eds.), *Health behavior: Emerging research perspectives* (pp. 107-124). New York, NY: Springer.
- Sallis, J. F., Owen, N., & Fisher, E. B. (2008). Ecological models of health behavior. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4 ed., pp. 465-486). San Francisco, CA: Jossey-Bass.
- Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, 32(5), 963-975.
- Task Force on Community Preventive Services. (2002). Recommendations to increase physical activity in communities. *Am J Prev Med*, 22(4S), 67-72.
- Zecevic, C. A., Tremblay, L., Lovsin, T., & Michel, L. (2010). Parental influence on young children's physical activity. *Int J Pediatr*, 2010, 468526.

Copyright of American Journal of Health Studies is the property of Expert Health Data System, Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.