

Societal Values and Policies May Curtail Preschool Children's Physical Activity in Child Care Centers

AUTHORS: Kristen A. Copeland, MD,^{a,b} Susan N. Sherman, DPA,^c Cassandra A. Kendeigh, BA,^a Heidi J. Kalkwarf, PhD,^{a,b} and Brian E. Saelens, PhD^d

^aDivision of General and Community Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; ^bDepartment of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, Ohio; ^cSNS Research, Cincinnati, Ohio; and ^dDepartments of Pediatrics and Psychiatry & Behavioral Sciences, Seattle Children's Hospital Research Institute, and the University of Washington, Seattle, Washington

KEY WORDS

child care, physical activity, health promotion, health policy

www.pediatrics.org/cgi/doi/10.1542/peds.2011-2102

doi:10.1542/peds.2011-2102

Accepted for publication Oct 5, 2011

Address correspondence to Kristen Copeland, MD, Division of General and Community Pediatrics, Cincinnati Children's Hospital Medical Center, 3333 Burnet Ave, MLC 7035, Cincinnati, OH 45229. E-mail: kristen.copeland@cchmc.org

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2012 by the American Academy of Pediatrics

FINANCIAL DISCLOSURE: *The authors have indicated they have no financial relationships relevant to this article to disclose.*

Funded by the National Institutes of Health (NIH).



WHAT'S KNOWN ON THIS SUBJECT: Three-fourths of US preschool-age children are in child care; many are not achieving recommended levels of physical activity. Daily physical activity is essential for motor and socioemotional development and for the prevention of obesity. Little is known about physical-activity barriers in child care.



WHAT THIS STUDY ADDS: Injury and school-readiness concerns may inhibit children's physical activity in child care. Fixed playground equipment that meets licensing codes is unchallenging and uninteresting to children. Centers may cut time and space for gross motor play to address concerns about school readiness.

abstract



BACKGROUND AND OBJECTIVES: Three-fourths of US preschool-age children are in child care centers. Children are primarily sedentary in these settings, and are not meeting recommended levels of physical activity. Our objective was to identify potential barriers to children's physical activity in child care centers.

METHODS: Nine focus groups with 49 child care providers (55% African American) were assembled from 34 centers (inner-city, suburban, Head Start, and Montessori) in Cincinnati, Ohio. Three coders independently analyzed verbatim transcripts for themes. Data analysis and interpretation of findings were verified through triangulation of methods.

RESULTS: We identified 3 main barriers to children's physical activity in child care: (1) injury concerns, (2) financial, and (3) a focus on "academics." Stricter licensing codes intended to reduce children's injuries on playgrounds rendered playgrounds less physically challenging and interesting. In addition, some parents concerned about potential injury, requested staff to restrict playground participation for their children. Small operating margins of most child care centers limited their ability to install abundant playground equipment. Child care providers felt pressure from state mandates and parents to focus on academics at the expense of gross motor play. Because children spend long hours in care and many lack a safe place to play near their home, these barriers may limit children's only opportunity to engage in physical activity.

CONCLUSIONS: Societal priorities for young children—safety and school readiness—may be hindering children's physical development. In designing environments that optimally promote children's health and development, child advocates should think holistically about potential unintended consequences of policies. *Pediatrics* 2012;129:265–274

The prevalence of high BMI increases as children age and has remained steady over the past 10 years,¹ despite numerous public health efforts to curb the childhood obesity epidemic. Recent guidance² based on empirical evidence suggests targeting prevention and interventions in the earliest age groups to address the epidemic,^{3–5} as by the time children are school-aged, 19% are already obese, and sedentary habits have already been established.^{6,7}

Seventy-five percent of US children aged 3 to 5 years are in child care; 56% are in centers, including nursery schools, preschools, and full-day centers.⁸ Epidemiologic evidence suggests that children are not getting enough physical activity in these settings,^{9–14} even though it is a key strategy for preventing excessive weight gain.^{15–21} Children spend most (70%–83%) of their time being sedentary in child care—even when excluding time spent in naps and meals—and only spend 2% to 3% of the time in vigorous activities.^{9–11} This is particularly concerning, because daily physical activity is not only essential for healthy weight maintenance, but also for practicing and learning fundamental gross motor skills^{22–25} and socioemotional and cognitive skills.^{26–34}

In the United States, child care facilities are licensed by individual states. The primary purpose of state licensing codes is to protect the health and safety of children. Thus, most of the language in the codes regarding physical activity relates to elements of playground safety, for example, maximum heights of climbing equipment, the size of fall-zones, and the types and depths of approved fall-zone surfaces. Individual centers may choose to implement center policies that are more promoting of physical activity, as long as they comply with the state's minimum health and safety standards, as well as state and/or federal standards (eg,

Head Start) for early learning. Licensing guidelines related to physical activity promotion vary widely among states³⁵; only nine states specify a minimum amount of time to be spent in outdoor play.³⁶

Children obtain vastly different amounts of physical activity in child care among states,^{37,38} which may in part be due to weather-related differences across regions.³⁹ Surprisingly, however, children's physical activity levels are highly variable among child care centers even within the same geographic region, and this variability is explained primarily (27%–47%)^{9,10, 40} by individual center characteristics, rather than by child characteristics (3%–10%).^{9,10}

The purpose of this qualitative study was to understand why children's physical activity may vary among child care centers, and to identify barriers that might prevent children from obtaining adequate amounts of physical activity while in centers. This work was undertaken to generate hypotheses that could be tested in future quantitative studies to identify important barriers to children's physical activity in child care and inform future policy-, facility-, or teacher-related interventions to increase children's physical activity in child care. We have previously reported some of the barriers identified in this work related to children's clothing,⁴¹ inadequate facilities,³⁹ weather-related policies,³⁹ and teachers' attitudes and behaviors.⁴² This article presents additional findings, particularly regarding the impact of parents' values and input that affects children's center-based activity, highlighting those that are particularly relevant to pediatric clinicians, policy makers, and applied-pediatric researchers.

METHODS

A detailed description of the methods used in this study and the demographics

of the sample has previously been reported.^{41,42} We conducted 9 focus groups with child care teachers/providers between August 2006 and June 2007 to explore their perceptions of facilitators and barriers to children's physical activity in centers, and to elicit child care providers' normative beliefs.^{43,44} We then conducted 13 one-on-one interviews in the spring of 2008 to assess the credibility of our focus group findings ("member checks").⁴⁵ Participants were recruited through fliers and the local child care resource and referral agency, and assigned randomly to a focus group session that met their schedule. No more than 1 participant per child care center was eligible to attend each focus group, so that there was heterogeneity of experiences in each group.^{44,46} Participants were eligible if they currently worked or had worked in a full-day center in Hamilton County, Ohio within the past 3 years. Of the 49 focus group participants, 27 (55%) identified themselves as African American, 48 (98%) were female, and 44 (90%) had some post-high school education. Participants had worked in child care an average of 13 ± 9 years (range, <1–37 years). Focus group participants came from 34 urban and suburban centers including 5 Montessori, 6 Head Start, 2 church-affiliated, 2 Young Men's Christian Associations, 4 worksite- or university-affiliated, and 3 corporate/for-profit centers. This study was approved by the institutional review board at Cincinnati Children's Hospital Medical Center; all participants provided verbal informed consent to participate and received \$25 remuneration.

Focus groups lasted an average 1.5 hours, were moderated by an experienced focus group facilitator (S.N.S.), and attended by the principal investigator (K.A.C). Discussions were audio-recorded and transcribed verbatim.

The semistructured focus group guide included questions on benefits and barriers to children's activity at the child, parent, teacher, center, institutional, policy, and societal levels. Open-ended questions were followed by more specific probes to clarify and extend responses. Prompted by pictures of typical child care center playgrounds, participants were asked to describe what they and the children enjoyed and did not like about their playgrounds. Examples of questions from the topic guide that contributed to the themes in this article are listed in Table 1. By consensus, 2 investigators (K.A.C. and S.N.S.) modified the focus group topic guide in an iterative fashion to explore new issues raised in previous focus group sessions and concluded after the ninth focus group that no new information was emerging from discussions. As theoretical saturation^{43,44} was achieved, recruitment for focus groups was terminated.

By using an inductive editing approach,⁴⁶ 3 investigators (K.A.C., S.N.S., and C.A.K.) trained in different disciplines (pediatrics, social science research, and child care) independently read each of the transcripts, identified emergent themes, and then as a group defined and categorized a codebook. The 3 investigators independently coded each transcript, and then met as a group to resolve any differences in coding by consensus. *nvivo* (QSR International version 7) was used to record coding decisions and to manage the data.

The themes elicited from the focus groups were reviewed with 13 interview participants, 9 of whom had participated in the focus groups ("member checks"), and 4 of whom could not participate because of scheduling conflicts. Interviewees were encouraged to expand on or question each of the themes. Interview participants provided additional insights and supporting

experiences, which were used to further analyze the findings, but did not differ with the investigators' original analysis and interpretations. All quotes presented in this article are from the original 9 focus groups.

RESULTS

Time in Child Care May Be the Only Opportunity for Physical Activity and/or Outdoor Play

An overarching theme was that many participants expressed concern that the time in child care may be the child's only opportunity for outdoor play (Table 2). Because many of the children were in care for such long hours, there was little free time for outside activities (¶1, ¶2). This was particularly the case for parents that worked multiple jobs (¶3), and/or did not earn sufficient income to afford outside extracurricular activities (¶4). Participants noted that some children may lack a safe place to play near their home (¶5), and several suspected that physical activity and trips to a safe park were not a "value" of the parents (¶6). This made the time in nonparental care even more critical for obtaining physical activity.

Concerns About Injury and a Focus on Safety Limits Children's Physical Activity

Although participants acknowledged the importance of physical activity, they also acknowledged that vigorous activity and outdoor play presented a risk—that children could get injured. The child's safety was cited as a main concern of both parents and teachers. Participants relayed pressure from parents not to allow their children to get injured while under their watch (¶7), and at times were asked to keep children from participating in vigorous activity to keep them from being injured (¶8, ¶9, ¶10).

Participants appreciated having state inspections of their playground and strict licensing codes, which helped them feel confident about the safety of the equipment, yet several worried that the guidelines had become so strict that they might actually be limiting rather than promoting children's physical activity. Several participants discussed how overly strict standards had rendered climbers unchallenging and uninteresting to the children, thus hampering children's physical activity (¶11, ¶12, ¶13). The new play equipment that was safe per these standards soon became boring to the children (¶11, ¶12) because they quickly mastered it. To keep it challenging, teachers noted that children would start to use equipment in (unsafe) ways for which it was not intended (¶14) (eg, walking up the slide), because participants noted that children were "wired" to seek out challenges (¶15). Some noted that preschool-aged children were drawn to more challenging "school-aged" equipment that the state had deemed was only appropriate for children over age 8 (¶16).

Last, participants cited crime-related safety concerns in the neighborhood where the center was located (¶17) as potentially inhibiting children's physical activity. In summary, participants cited societal and adult concerns about children's safety, and licensing guidelines designed to prevent childhood injury, both as potential obstacles to children's physical activity opportunities in child care.

Financial Issues Limit Physical Play Space and Available Equipment

Several participants cited budgetary reasons for why their centers could not offer children optimal physical activity opportunities (¶18). Most centers had tight operating margins, and thus could not afford extensive equipment offerings (¶19, ¶20), which was cited

TABLE 1 Sample Questions Used in Focus Groups That Elicited Teachers' Concerns That Safety, Budgets, and a Focus on Academics May Hamper Children's Physical Activity in Child Care^a

1. What are some types of activities that children in your center engage in that **increases their heart rate**? (including indoor and outdoor games)
2. How are **outside games** different than **inside games**?
 - o How are **outside rules** different from **inside rules**?
3. What are some possible **benefits** to children being outside?
 - o **Probe on whatever they mention** (*expect*: a learning tool, exposure to nature, calming tool, health promotion, or preventing illness).
4. What are some possible **disadvantages** to children being outside?
 - o **Probe on whatever they mention** (*expect*: injuries, catching a cold/getting sick, less control over the children).
5. In your opinion, **what is the role of physical activity or active play in child care**? How important do you think it is for the children? (*Probe on whatever is mentioned, and encourage participants to react to what others have said.*)
6. *Place pictures of three preschool playgrounds where all participants can see them.* Look at these three pictures of playgrounds. Think about how you might use these playgrounds with the children under your care. Starting with picture #1:
 - o What are some **positive features** of this playground, starting with the **children's perspective**?
 - o In what ways is the playground attractive **to you** as a teacher/child care provider?
 - o What are some of the **disadvantages** of this playground compared with the other pictures, or compared with other playgrounds you know?
 - o Optional probes:
 - What would make the playground **more attractive to you**? (Clarification or follow-up: What could be changed in the playground to make you want to spend more time there?)
 - What would make it more attractive **to the children** you care for?
 - (*If it hasn't already been discussed*) Now think about your responsibilities in supervising and instructing the children. How easy or difficult do you think it would be to supervise children on this playground, and what would you change about it?
7. Now **think about the playground at your preschool or child care center**, or another playground that you are intimately familiar with.
 - o What do **the children like** about your playground?
 - o What are some things **you like** about your playground as a teacher/child care provider?
 - o What are some **disadvantages of or problems** with your playground?
 - o **What would make the playground better**, to make it more attractive to you or to make you want to spend more time there?
 - o What would **make the playground more attractive to the children** you care for?
 - o **In what ways is it difficult to supervise** the children on your playground? What could be changed to make it easier?
8. What **types of things keep you from using your playground** sometimes? *Probe on the following in whatever order the participants mention them*
 - o What types of **weather** keep children from going outside or using your playground?
 - What do you do on days that weather or other things keep you from going outside? (*expect to hear at least some participants mention an indoor gross-motor room*)
 - o Tell me about your interaction with **parents** regarding taking the children outside. Do parents encourage you to take children outside?
 - Have parents ever said or done anything in the past that makes it difficult for you to take the children outside? (*expect to hear: improperly dressed, parents' request not to take children outside due to injury or fear of getting sick*) *In response to parent behaviors mentioned:*
 - How do you handle that?
 - How do you feel about that behavior?
9. What kind of **policies** does your center have about using the playground, including **weather conditions**, playground **schedule**?
 - o For those with **and** those without weather policies, how is the decision usually made about whether to take the children outside? (eg, left up to individual teacher discretion, or the director decides?)
 - o How is outside time, playground time, and indoor muscle room time scheduled at your center? (**Clarification:** Do you have set times you are allowed to use the playground?)
 - *Optional probe if they mention set times:* What happens if it's raining during your set time?
 - *Optional probe if they mention conflicts with other teachers about their designated time on the playground:* How did you feel about that, how did you handle that?
 - o What rules if any does your center have about physical activities such as running, climbing, and jumping in the classrooms?
10. Think about all the rules and policies we've mentioned. If you could change the policies or rules at your center, what would you change about them?
 - o (*optional probe*) What do you think about the rules and policies at other center that you've heard mentioned?
11. How do you think **licensing regulations** affect children's physical activity?
 - o *Follow up if needed:* For instance, How do Safety requirements for playground equipment affect children's physical activity on playgrounds?
 - o Ratio requirements for different age groups on the same playground?
 - o Licensing regulations regarding weather?
12. Can you think of anything that we haven't already discussed that may sometimes keep children from being physically active?
13. What could be done at your center to get the children to be more active? *With ideas offered, ask participants what they think about the ideas, how they would react if the suggested intervention occurred at their center*

^a For each of the questions, nonspecific and nonleading probes were used to follow up on any ideas expressed. Examples of these probes were "Tell me more about that," or "Can you provide an example?"

by one participant as costing >\$10 000 per climber. Participants lamented that with budgetary constraints, and given parental

concern about a focus on "academics" (discussed below), classroom and curricular activities took precedence over gross motor play offerings (¶21,

¶22). Many did not have a dedicated indoor gross motor room where children can be active during inclement weather (¶21, 22). Participants'

TABLE 2 Example Quotes Supporting Key Themes Related to Physical Activity in Child Care

Time in Child Care is Only Opportunity for Outdoor Play	
Long hours in care	<p>¶1: The new thing that we find is childhood obesity. A lot of children depend on us during the day because they get picked up so late. We provide the physical activity that they're gonna get.</p> <p>¶2: I think [physical activity is] very important because a lot of those kids are in daycare from morning 'til late afternoon. They're probably not getting much [physical activity].... I know a lot of our kids leave at 6:00. You're talking 3 to 5 year olds, they're going to go home, dinner, bath, and they're not gonna have time for that outside play.</p>
Parents work multiple jobs	<p>¶3: With the way that parents work these days, you got some parents that's got 2 and 3 jobs sometimes and they don't necessarily have the time to go over that kind of stuff with their kids. 'Cause I got some parents that work on weekends as well as all week long. So to me, it's like we are that surrogate mom.... So I think we have to push gross motor a lot because a lot of them don't know about it. But a lot of them don't get outside. I have a little girl that tells me all the time she doesn't really go outside. When they go home, it's dinner, bath, sleep, and back to school again. They have to learn it somewhere.... Yeah, [the time in child care is] the only time she gets to go outside.</p>
No other activities/no time for free play	<p>¶4: Usually the people I work with are lower income so they don't have extra activities. They're not, you know, the parents are dropping them off, they're running to work, running to school, and then they come, kids go home and all they doing is watching TV, you know, basically getting ready for bed. So I think the physical part and the socialization part [of physical education] is very important for the kids that I work with.</p>
No safe place to play	<p>¶5: Some kids don't even get to go outside once they leave the center. They have to live inside because of the areas they live in or something. A lot of parents where we are so they're scared to let their kids go out because of drive-bys and drug activities so their kids play inside a lot so they really enjoy the outside.</p>
Physical activity not seen as a value	<p>¶6: They are just sitting inside at home. Going outside, getting activity, taking walks, going on bikes doesn't seem to be a value of mom and dad. It's really hard at school to make kids feel that this is good for you. It's important. We should all do this. If I had a magic wand, I'd wave it at home.</p>
Barriers to Children's Physical Activity in Child Care	
Injury/Safety concerns	
Child safety is main concern of parents and teachers	<p>¶7: I can think of one instance where a girl fell on the playground and I tried to help her up and she blamed me.... Her parents thought I made her fall. I am the one that told them to call her home.... So the climbers and the monkey bars are a lot of fun but they are also very dangerous.</p> <p>¶8: Sometimes you have parents who are afraid to let their children do things because they're afraid they'll get hurt.</p> <p>¶9: I had a parent, she said her daughter was just prone to getting hurt... Because she would always would fall, get a cut, her head hurt. Every week there was an incident. Mom said, "Tell her she needs to sit down." I was like, "We can't do that." She said, "She don't need to play. Tell her to just sit down." I said, "But we can't tell her she can't play."</p> <p>¶10: [Parent said:] "I don't want him playing on the climber anymore because he got hurt." "Well, so when we go outside we need to isolate him? What is it you want him to do?" ... She said, "I just don't want him climbing so when you come out he needs to bring a book."</p>

distaste for their inadequate play spaces sometimes caused them not to use them, thus children's active play opportunities could be curbed even when spaces were available (¶23, ¶24).

Physical Activity versus Academics

A common theme expressed by many participants was that they felt pressure to prioritize academic classroom learning (eg, shapes, colors, prereading skills) over outdoor and active play time. Several felt this pressure directly from parents, including both upper-income (¶25, ¶26) and lower-income (¶27) families. Some participants felt this pressure from state early-learning standards (¶28, ¶29). Many teachers agreed with this goal in principle and sought to always ensure that, when it did occur, there was a purpose to physical activity so that children were not just "running around" (¶29, ¶30). Teachers felt the need to teach cognitive concepts when outside, such as numbers or one-to-one correspondence (¶31), to ensure that children were not practicing and learning only gross motor skills. At the same time, participants recognized that children learned through play, and, in particular, active play. Several commented that the energy release and creative stimulation of outdoor activities helped place children in a better mindset to learn and concentrate later, either indoors or outdoors (¶32, ¶33). Some even felt that children learned best through movement (¶34).

DISCUSSION

We identified three potential barriers to children's physical activity in child care from this qualitative study: (1) safety and injury concerns, (2) economic and budgetary issues, and (3) a focus on "academics," even in the preschool setting. Several of these themes interacted with one another. For example,

TABLE 2 Continued

Barriers to Children's Physical Activity in Child Care	
Playground licensing renders climbers unchallenging	<p>¶11: It seems like an awful lot of play equipment kind of limits them. Climbers these days are—you can climb up a ladder or you can climb up the wall or you can climb up the rope, and then you're on a platform but there's not as much to do.... It just seems like years ago there were more things that were perhaps more dangerous, but also more challenging. It's like you can't really ever be completely safe and push yourself to try to reach a new potential because you're limited because you gotta be safe. Which is great, I want them to be safe! But at the same time, I feel sad that children don't get to do as much as they used to be able to do.</p> <p>¶12: I don't think they really get their heart rate up much from climbing because with all the new licensing regulations, our climbing equipment isn't that hard anymore.... Everything is so safety-oriented that there is not a place to really take a risk.</p> <p>¶13: All the new equipment looks alike.... It's real cool the first time you see it, and then you go to the next playground and there it is again. It's all the same. It's all very, very safe and it's all exactly the same. Even if it's in a different configuration, there are no new skills they can learn here.</p> <p>¶14: I don't know what the licensing regulations are but I know that we used to have this climber where they could climb really high and it was really challenging. Then they changed it to whatever it is now. I guess it had something to do with fall zones and everything. Now we have this climber that it looks cute, much cuter than the old one, but it's not as high, and the old one was kind of scary.... This one there is just not a lot of—you see children trying to climb into places they're not supposed to climb in because it's just not challenging. They're walking up the slide much more than they ever did with the other one. You can see they are just trying to find those challenges.</p> <p>¶15: I think young kids are just wired to be learning something new. If they are in an environment that's too familiar to them, they're gonna figure out some way to do something new which usually does not work for [teachers].</p> <p>¶16: Well, on our playground there are certain types of equipment that have stickers on them that say "For use of children 6 and under" and other equipment will say "For use of children 8-12." So even though some of our kids are 6 and 7, might be able to do the activities on the larger equipment, they're really not supposed to be on that because the sticker says they're not supposed to and our school is supposed to abide by that. So it can limit some of the activities of the children who are able to do that.</p>
Center neighborhood safety	<p>¶17: Yes, I had a parent say she didn't want her child outside because the neighborhood we're in, you know. She lives in this neighborhood but she didn't want her child out. Our center is in [an area that] has a very bad reputation. [The parent said], "I don't want my child outside because I'm not there to watch my child and I don't know, she may get shot."</p>
Economic concerns Playgrounds are expensive	<p>¶18: We have budget problems. We only got so much money. [The school doesn't] have the money. That limits a lot of things we can do.</p>

a center's tight budget limited its ability to offer expensive outdoor equipment, thus centers prioritized things they felt mattered most to the parents: more time, space, and materials in the classroom. Unless parents valued and prioritized outdoor time (and several participants felt many parents did not), children would not have opportunities to be physically active. Out of concern for potential injury, some parents requested their child not participate in outdoor activities, and "read a book instead." This solution addresses all three themes—book reading is safer than outdoor play, books are significantly cheaper than purchasing and maintaining outdoor play equipment, and reading a book is seen as more of a learning experience than outdoor play. Because children spend long hours in care and many lack a safe place to play near their home, these barriers to physical activity in child care may limit children's only opportunity to engage in physical activity.

One seemingly novel finding was that a heightened societal focus on safety resulted in twin outcomes: child care playgrounds had been modified to prevent child injury, but the modifications also rendered them less challenging and interesting for children. It is not clear if these playground "improvements" have caused children to be less active on playgrounds over time, although others have found children to be less active on child care playgrounds with more pieces of fixed equipment.^{47,48} Our findings resonate with studies of older children, who have been reported to lose interest in playground equipment that is not sufficiently challenging or varied.^{49,50}

Another surprising finding was that a societal focus on "academics" extended even to the preschool-aged group. Several commented that parents wanted to know what their child "learned" that day, but were not

TABLE 2 Continued

Barriers to Children's Physical Activity in Child Care	
Inadequate or nonexistent indoor gross motor room	<p>¶19: Not having enough equipment or enough activities to do. Depending on the center, what their budget allows them. Some centers may have one swing set or one climber. They might have 30 children and there is not enough stuff for everyone to do, so either kids get bored and they start doing things that aren't appropriate or they just get bored and don't do anything. Depends on the budget and the equipment they have.</p> <p>¶20: I think one of [our problems] is not having enough bikes for all the kids.... Probably the same for the climber. We have a climber and a grass area and a little path. It's just a small piece of a climber and so there is always a long line waiting to go up the slide and do stuff like that.</p> <p>¶21: I don't think that physical activity is high on the priority list of things that schools want to necessarily provide. We don't have a strategic muscle room. We just kind of have a hallway that has become the muscle room. When we push for more funding for that or ask for a specific area where we can get that.... And the higher-ups are not interested in that. They want more books, more focus on the indoor activities and so the money, just the funding is not coming for it. And it's very frustrating 'cause I feel that's a very important part of their day, but I don't think that everyone feels that way.</p> <p>¶22: ...they took our muscle room and changed it into a classroom! We have a classroom there now.</p> <p>¶23: The muscle room isn't really large enough or have enough equipment for 14 four-year-olds. It just really is inadequate. I hate the muscle room. If I can avoid it, I will.</p> <p>¶24: Our muscle room is small. It's for one class, One class [and too small for that]... if it's a day where I have 20 kids, I don't even go. I won't even go in there.... When they ride bikes, they are just basically going circles around the climber.</p>
Academic concerns Pressure to prioritize classroom learning over physical activity	<p>¶25: I think a lot of teachers know the importance of active play but I think a lot of parents are pushing for a lot of academics. Some schools have been juggling with the idea of eliminating recess which I think is just awful. As educators, we know how important it is but parents who are not in the education field don't realize how important it is. [<i>Teacher at a child care center affiliated with an middle-upper-income school district</i>]</p> <p>¶26: I think the parents that we deal with are more interested in what you're teaching their child than they are in other things. They want your accountability of things. And luckily, with me only being 2s and 3s [year-olds], I tell them up front we do colors and shapes but I don't drown it into their head or hold up the flash card. They learn it by reading a book and you say, "What color is this apple?" [<i>Teacher from nursery school in an upper-income neighborhood</i>]</p> <p>¶27: I think you hit on a really key point when you said the parents want to know what you're teaching them. Because even though I feel that the gross motor is something that's important for the children to experience and engage in, I don't think that their parents necessarily do. Like for example, the fact that they're not getting it when they go home. -A parent whose child is not getting that when they're at home doesn't come to school and say, "You know, I'm wondering if my child got to ride the bike today." They want to know what letters they know, what shapes they know, where they're at with reading... and we have some 2-year-old parents who want to know if their child knows letters, which is not necessarily age appropriate, but their child can't climb the stairs by themselves yet. So, I don't think it's an important thing to parents sometimes. [<i>Teacher from a center serving an low-income neighborhood</i>]</p>

interested in whether they had gone outside, or had mastered fundamental gross motor skills. Participants felt that academics were valued by both low- and upper-income parents, and thus were motivated to demonstrate a "purpose" for gross motor time so that the children would not be seen as just "running around." Some felt pressure from state learning standards and local kindergarten-readiness initiatives. Participants discussed ways of incorporating lessons about numbers or letters on the playground, and thus potentially meet both learning and physical activity standards. Recent successful interventions have integrated activity throughout the day in the classroom.⁵¹⁻⁵³ It is unknown to what extent these initiatives or parental pressure for academics have contributed to restricting children's time outdoors in child care, because children's outdoor playtime has not been systematically studied. More research is needed to examine cognitive and physical activity outcomes in concert, because participants noted that the 2 are interconnected in this age group.

Participants also noted economic barriers to physical activity in child care: that playground equipment was expensive and that programmatic budgets were usually dedicated to classroom materials and instruction (ie, focus on academics). It is unknown, however, to what extent budgetary issues actually impede children's physical activity, for example, if children attending centers with the majority of children on tuition assistance are any less active than children attending centers that do not accept children on tuition assistance. These questions warrant additional investigation.

Our findings highlight potential areas for additional research and targets for intervention. Although participants recognized the interconnections

TABLE 2 Continued

Barriers to Children's Physical Activity in Child Care	
Activity needs purpose	<p>¶28: I think the State of Ohio is getting away from the gross motor part, too. They are focusing more for preschool on the language and the literacy. They have a new program called the Early Learning Initiative which is to standardize preschool across the state. And they do not consider gross motor or outdoor time or the muscle room time as learning time, so they want children to have 4-1/2 hours of structured learning time, but they're not considering gross motor or fine motor as part of that time. So I think they're getting away from that piece of it, and it concerns me a little bit.</p> <p>¶29: Sometimes kids spend more time outside and aren't getting the other things they need out of preschool. If they are just outside running in circles and... not participating in interactive activities that teachers have planned to meet certain goals of the preschool... and the state and federal standards that we have to abide by all the time. That's one downfall that we need to make sure that even when they're outside, they're participating in meaningful activities—that they're learning something. There is learning going on, not just exerting energy.</p>
Incorporating learning into outdoor play	<p>¶30: I think it's very important that they are learning skills and not just running around, although there are some children that need to burn off that energy, but they're not learning how to do any of the things that they should at home, like the riding the bike or throwing the balls and overhand throwing. They're not learning that at home 'cause there is no time for it.</p> <p>¶31: Like hopscotch, where they are learning numbers, and taking turns, social skills, things like that. We are big on individualization in Head Start, so if there is a child who doesn't know their numbers or one-on-one correspondence, they don't know how to count... then the teachers need to be working on certain skills that will enhance those developmental skills of the child. If they draw a hopscotch outside, it's for these handful of children that need to work on number concepts. They're putting fun stuff out there, but it has a purpose behind it that they're trying to work on.</p>
Activity helps children concentrate, active learning	<p>¶32: I had to do my thesis on Head Start and how they... said that the physical part was just as important. Because sometimes I can't even get the kids to focus if you're trying to do a circle or group or something, until we all got up and played or danced or did something and got all their energy out of them, and then they was ready to sit down and focus for the 15 minutes.</p> <p>¶33: It's just not natural for them to sit still. You lecture them at that age. They need to move. It's not something they want to do, it's a necessity. They need to get outside. They need to smell the fresh air. They learn better. I completely agree with you.</p> <p>¶34: [Movement has] been tied to emotional development and physical development and cognitive development... They learn through moving. If they aren't able to move their bodies and explore and figure things out with their bodies, the rest of it isn't gonna click, either. It's just important for all-around development.</p>

between physical and socioemotional development, they did not think many parents understood this. This presents an educational opportunity for pediatric clinicians, who interact regularly with families, to guide children's healthy development. Recognizing that school readiness is a prevalent concern, pediatricians may need to highlight for parents the many learning benefits of outdoor play (better concentration, learning about science, negotiation with peers), and reassure parents that active time does not need to come at the expense of time dedicated to "academics" and "learning." Because we have previously reported that children sometimes are dressed unsuitably for active play,⁴¹ pediatricians can remind parents about the importance of "dressing for success," which in preschool would be dressed for active play. The pediatric visit (more common in early years than in older childhood) is also an excellent opportunity to dispel myths parents may believe about the chances their child will get sick when exposed to cold or damp weather, because we have also reported this is a prevalent concern.⁴² Last, in dispensing injury prevention advice, pediatricians should be careful not to reinforce messages that physical activity is inherently dangerous. Pediatricians can balance these safety messages with an equal dose of health promotion messages about the crucial importance of daily physical activity for both physical and mental health; and for the motor, socioemotional, and cognitive development of young children.

Limitations

There may have been selection bias in that those who chose to participate tended to view children's physical activity more favorably, and may have been more attuned to the interconnections between physical and cognitive development in this age group in comparison with the "typical" child care

provider. Our findings should be interpreted as exploratory, because this was a qualitative study of child care providers within a single county in Ohio. The primary purpose of qualitative research is to probe phenomena in-depth, not to generalize the results to other populations. Yet the barriers participants discussed—concerns about safety, budgets, and academics—potentially characterize other geographic areas. Although we tried to recruit participants of different ethnicities, there were no Latino participants, which partially reflects local demographics (<1% of county residents are Latino). We recruited a heterogeneous sample in terms of center program philosophy, years of experience, and sociodemographics of children served, yet it is not possible through qualitative research to make inferences on demographic predictors of participants' attitudes or behaviors, nor is it possible to derive prevalence estimates of the ideas expressed. Future studies are needed to investigate the generalizability of these findings.

Implications

In promoting optimally safe, healthy, and enriched learning environments for young children, there may be a need to reset the balance between the salient priorities of injury prevention and kindergarten readiness with those that have not received as much recent attention, that is, physical activity promotion. Child advocates must think holistically about potential unintended consequences of policies designed to protect children's safety (eg, licensing codes that have rendered climbers uninteresting, or early learning standards that encourage child-care providers to cut time dedicated for outdoor play). Given that childhood obesity is quickly eclipsing childhood injury as a leading cause of morbidity, and that time in child care may be the child's only opportunity for outdoor play, licensing standards may need to explicitly promote physical activity in as much detail as is devoted to safety. The third edition of the American

Academy of Pediatrics and American Public Health Association's health and safety standards for child care ("Caring for Our Children," third edition⁵⁴) do just this, and are the first to include explicit guidelines and practical tips for promoting physical activity in child care.

ACKNOWLEDGMENTS

This work was supported by the National Heart, Lung, and Blood Institute at the National Institutes of Health through Career Development Award K23HL0880531, a grant from The Robert Wood Johnson Foundation Physician Faculty Scholars Program, and by the Dean's Scholar Program at the University of Cincinnati College of Medicine.

We thank 4C for Children, the local child care resource and referral agency that assisted with recruitment for focus groups. We also thank all of the directors and teachers who contributed their time and thoughtful comments to this study.

REFERENCES

1. Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in US children and adolescents, 2007-2008. *JAMA*. 2010;303(3):242-249
2. Committee on Obesity Prevention Policies for Young Children IoM. *Early Childhood Obesity Prevention Policies*. Washington, DC: Institute of Medicine; 2011
3. Wahi G, Parkin PC, Beyene J, Uleryk EM, Birken CS. Effectiveness of interventions aimed at reducing screen time in children: a systematic review and meta-analysis of randomized controlled trials. *Arch Pediatr Adolesc Med*. 2011;165(11):979-986
4. Birch L, Ventura A. Preventing childhood obesity: what works?. *Int J Obes*. 2009;33(suppl 1):S74-S81
5. Koplan JP, Liverman CT, Kraak VI; Committee on Prevention of Obesity in Children and Youth. Preventing childhood obesity: health in the balance: executive summary. *J Am Diet Assoc*. 2005;105(1):131-138
6. Sallis JF, Berry CC, Broyles SL, McKenzie TL, Nader PR. Variability and tracking of physical activity over 2 yr in young children. *Med Sci Sports Exerc*. 1995;27(7):1042-1049
7. Sallis JF, Prochaska JJ, Taylor WC. A review of correlates of physical activity of children and adolescents. *Med Sci Sports Exerc*. 2000;32(5):963-975
8. childstats.gov. America's Children: Key National Indicators of Well-Being 2005. 2005. Available at: www.childstats.gov/americaschildren/pop8.asp. Accessed July 22, 2005
9. Pate RR, Pfeiffer KA, Trost SG, Ziegler P, Dowda M. Physical activity among children attending preschools. *Pediatrics*. 2004;114(5):1258-1263
10. Pate RR, McIver K, Dowda M, Brown WH, Addy C. Directly observed physical activity levels in preschool children. *J Sch Health*. 2008;78(8):438-444
11. Brown WH, Pfeiffer KA, McIver K, et al Social and environmental factors associated with preschoolers' nonsedentary physical activity. *Child Dev*. 2009;80(1):45-58
12. Reilly JJ, Jackson DM, Montgomery C, et al. Total energy expenditure and physical activity in young Scottish children: mixed longitudinal study. *Lancet*. 2004;363(9404):211-212
13. Baranowski T, Thompson WO, DuRant RH, Baranowski J, Puhl J. Observations on physical activity in physical locations: age, gender, ethnicity, and month effects. *Res Q Exerc Sport*. 1993;64(2):127-133
14. McKenzie TL, Sallis JF, Elder JP, et al. Physical activity levels and prompts in young children at recess: a two-year study of a bi-ethnic sample. *Res Q Exerc Sport*. 1997;68(3):195-202
15. Epstein LH, Valoski AM, Vara LS, et al. Effects of decreasing sedentary behavior and increasing activity on weight change in obese children. *Health Psychol*. 1995;14(2):109-115
16. Vale SM, Santos RM, da Cruz Soares-Miranda LM, Moreira CM, Ruiz JR, Mota JA. Objectively measured physical activity and body mass index in preschool children

- [published online ahead of print July 11, 2010]. *Int J Pediatr*.
17. Reilly JJ. Physical activity, sedentary behaviour and energy balance in the preschool child: opportunities for early obesity prevention. *Proc Nutr Soc*. 2008;67(3):317–325
 18. Janz KF, Burns TL, Levy SM; Iowa Bone Development Study. Tracking of activity and sedentary behaviors in childhood: the Iowa Bone Development Study. *Am J Prev Med*. 2005;29(3):171–178
 19. Reilly JJ, Armstrong J, Dorosty AR, et al; Avon Longitudinal Study of Parents and Children Study Team. Early life risk factors for obesity in childhood: cohort study. *BMJ*. 2005;330(7504):1357
 20. Dennison BA, Erb TA, Jenkins PL. Television viewing and television in bedroom associated with overweight risk among low-income preschool children. *Pediatrics*. 2002;109(6):1028–1035
 21. Janz KF, Levy SM, Burns TL, Torner JC, Willing MC, Warren JJ. Fatness, physical activity, and television viewing in children during the adiposity rebound period: the Iowa Bone Development Study. *Prev Med*. 2002;35(6):563–571
 22. Fisher A, Reilly JJ, Kelly LA, et al. Fundamental movement skills and habitual physical activity in young children. *Med Sci Sports Exerc*. 2005;37(4):684–688
 23. Alpert B, Field T, Goldstein S, Perry S. Aerobics enhances cardiovascular fitness and agility in preschoolers. *Health Psychol*. 1990;9(1):48–56
 24. Reilly JJ, Kelly L, Montgomery C, et al. Physical activity to prevent obesity in young children: cluster randomised controlled trial. *BMJ*. 2006;333(7577):1041
 25. Lubans DR, Morgan PJ, Cliff DP, Barnett LM, Okely AD. Fundamental movement skills in children and adolescents: review of associated health benefits. *Sports Med*. 2010;40(12):1019–1035
 26. Mahar MT, Murphy SK, Rowe DA, Golden J, Shields AT, Raedeke TD. Effects of a classroom-based program on physical activity and on-task behavior. *Med Sci Sports Exerc*. 2006;38(12):2086–2094
 27. Timmons BW, Naylor PJ, Pfeiffer KA. Physical activity for preschool children—how much and how? *Can J Public Health*. 2007;98(suppl 2):S122–S134
 28. Tomporowski PD, Davis CL, Miller PH, Naglieri JA. Exercise and children's intelligence, cognition, and academic achievement. *Educ Psychol Rev*. 2008;20(2):111–131
 29. Barros RM, Silver EJ, Stein RE. School recess and group classroom behavior. *Pediatrics*. 2009;123(2):431–436
 30. Pellegrini AD, Bohn CM. The role of recess in children's cognitive performance and school adjustment. *Educ Res*. 2005;34(1):13–19
 31. Carlson SA, Fulton JE, Lee SM, et al. Physical education and academic achievement in elementary school: data from the early childhood longitudinal study. *Am J Public Health*. 2008;98(4):721–727
 32. Sallis JF, Owen N. *Physical Activity & Behavioral Medicine*. Thousand Oaks, CA: Sage Publications; 1999
 33. Ginsburg KR; American Academy of Pediatrics Committee on Communications; American Academy of Pediatrics Committee on Psychosocial Aspects of Child and Family Health. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics*. 2007;119(1):182–191
 34. Burdette HL, Whitaker RC. Resurrecting free play in young children: looking beyond fitness and fatness to attention, affiliation, and affect. *Arch Pediatr Adolesc Med*. 2005;159(1):46–50
 35. Benjamin SE, Craddock A, Walker EM, Slining M, Gillman MW. Obesity prevention in child care: a review of U.S. state regulations. *BMC Public Health*. 2008;8(1):188
 36. Kaphingst KM, Story M. Child care as an untapped setting for obesity prevention: state child care licensing regulations related to nutrition, physical activity, and media use for preschool-aged children in the United States. *Prev Chronic Dis*. 2009;6(1):A11
 37. Whitaker RC, Gooze RA, Hughes CC, Finkelstein DM. A national survey of obesity prevention practices in Head Start. *Arch Pediatr Adolesc Med*. 2009;163(12):1144–1150
 38. Copeland KA, Blanchard T, Finkelstein JA, Southward LH. Physical and Sedentary Activity in Child Care Centers. Paper presented at: PAS Annual Meeting 2006; San Francisco, California
 39. Copeland KA, Sherman SN, Khoury JC, Foster KE, Saelens BE, Kalkwarf HJ. Wide variability in physical activity environments and weather-related outdoor play policies in child care centers within a single county of Ohio. *Arch Pediatr Adolesc Med*. 2011;165(5):435–442
 40. Finn K, Johannsen N, Specker B. Factors associated with physical activity in preschool children. *J Pediatr*. 2002;140(1):81–85
 41. Copeland KA, Sherman SN, Kendeigh CA, Saelens BE, Kalkwarf HJ. Flip flops, dress clothes, and no coat: clothing barriers to children's physical activity in child-care centers identified from a qualitative study. *Int J Behav Nutr Phys Act*. 2009;6:74
 42. Copeland KA, Kendeigh CA, Saelens BE, Kalkwarf HJ, Sherman SN. Physical activity in child-care centers: do teachers hold the key to the playground? *Health Educ Res*. July 29, 2011.
 43. Crabtree BF, Miller WL. *Doing Qualitative Research*. 2nd ed. Thousand Oaks, CA: Sage Publications; 1999
 44. Krueger RA. *Focus Groups: A Practical Guide for Applied Research*. 2nd ed. Thousand Oaks, CA: Sage Publications; 1994
 45. Maxwell JA. *Qualitative Research Design*. vol. 41. Thousand Oaks, CA: Sage Publications; 1996
 46. Patton MQ. *Qualitative Research and Evaluation Methods*. 3rd ed. Thousand Oaks, CA: Sage Publications; 2002
 47. Dowda M, Brown WH, McIver KL, et al. Policies and characteristics of the preschool environment and physical activity of young children. *Pediatrics*. 2009;123(2). Available at: www.pediatrics.org/cgi/content/full/123/2/e261
 48. Bower JK, Hales DP, Tate DF, Rubin DA, Benjamin SE, Ward DS. The childcare environment and children's physical activity. *Am J Prev Med*. 2008;34(1):23–29
 49. Veitch J, Salmon J, Ball K. Children's perceptions of the use of public open spaces for active free-play. *Child Geogr*. 2007;5(4):409–422
 50. Colabianchi N, Maslow AL, Swayampakala K. Features and amenities of school playgrounds: a direct observation study of utilization and physical activity levels outside of school time. *Int J Behav Nutr Phys Act*. 2011;8(1):32
 51. Trost SG, Fees B, Dziewaltowski D. Feasibility and efficacy of a “move and learn” physical activity curriculum in preschool children. *J Phys Act Health*. 2008;5(1):88–103
 52. Brown WH, Googe HS, McIver KL, Rathel JM. Effects of teacher-encouraged physical activity on preschool playgrounds. *J Early Intervention*. 2009;31(2):126–145
 53. Results from the “I Am Moving, I Am Learning” Stage 1 Survey. Princeton, NJ: Mathematica Policy Research; 2007
 54. American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. Caring for Our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs. In: American Academy of Pediatrics APHA, ed. 3rd ed. Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American Public Health Association; 2011. Available at: <http://nrckids.org/CF0C3/index.html>. Accessed July 9, 2011

Societal Values and Policies May Curtail Preschool Children's Physical Activity in Child Care Centers

Kristen A. Copeland, Susan N. Sherman, Cassandra A. Kendeigh, Heidi J. Kalkwarf and Brian E. Saelens

Pediatrics 2012;129;265

DOI: 10.1542/peds.2011-2102 originally published online January 4, 2012;

Updated Information & Services	including high resolution figures, can be found at: http://pediatrics.aappublications.org/content/129/2/265
References	This article cites 43 articles, 7 of which you can access for free at: http://pediatrics.aappublications.org/content/129/2/265#BIBL
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Community Pediatrics http://www.aappublications.org/cgi/collection/community_pediatrics_sub School Health http://www.aappublications.org/cgi/collection/school_health_sub Developmental/Behavioral Pediatrics http://www.aappublications.org/cgi/collection/development:behavioral_issues_sub
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.aappublications.org/site/misc/Permissions.xhtml
Reprints	Information about ordering reprints can be found online: http://www.aappublications.org/site/misc/reprints.xhtml

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Societal Values and Policies May Curtail Preschool Children's Physical Activity in Child Care Centers

Kristen A. Copeland, Susan N. Sherman, Cassandra A. Kendeigh, Heidi J. Kalkwarf
and Brian E. Saelens

Pediatrics 2012;129:265

DOI: 10.1542/peds.2011-2102 originally published online January 4, 2012;

The online version of this article, along with updated information and services, is
located on the World Wide Web at:

<http://pediatrics.aappublications.org/content/129/2/265>

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2012 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

