Research Implications

COMPREHENSIVE SCHOOL PHYSICAL ACTIVITY PROGRAM (CSPAP)

Research to Practice Literature Review

NOVEMBER 2018



Active Schools Institute

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Active Schools

RESEARCH IMPLICATIONS

To date, research regarding multicomponent approaches to schoolwide physical activity reflect the conceptual underpinnings of CSPAP. All but two published studies (or 94% of the 34 studies published since 1987) include a physical education intervention, the cornerstone of CSPAP, and a during school physical activity intervention. If an additional intervention is included in a study, it is likely family and community engagement (~75% of the time). The finding is surprising given the sparse literature base on the community engagement component of a CSPAP (Welk & Lee, 2019) and extensive number of studies of before/after school youth physical activity initiatives (Dauenhauer, Babkes Stellino, Webster, & Steinfurth, 2019). One implication may be for CSPAP researchers and thought leaders to consider distinguishing the "must-have" (beyond physical education and during school physical activity) from the "nice-to-have" elements for a true, multi-component CSPAP intervention to exist. This CSPAP bibliography provides a nice foundation for (re) conceptualizing CSPAP grounded in research evidence.

There are clear research gaps emerging from this bibliography worth exploring in the future. Listed in order of need are:

- Multi-component CSPAP research that considers the influence of demographic characteristics of the school context and student population in the study. At the very least, it is important for researchers to report these demographic characteristics for comparisons to be drawn. For now, it appears a nice balance of international and US-based multicomponent CSPAP studies have been conducted, and when specified, they largely occur in elementary schools with children classified in the low socio-economic strata.
- Multi-component CSPAP research performed in secondary schools, rural settings, or combination therein. The 2 multi-component CSPAP studies that have excluded physical education have been conducted in secondary settings, substantiating the challenges of studying quality physical education at the secondary level (Graber, Killian, & Woods, 2019)
- Full CSPAP component research, as the model is conceptualized. This sole full CSPAP implementation study found school-level improvements in physical activity opportunities (+39 minutes) and average number of cardiovascular fitness scores (+3 PACER laps) within an elementary school setting with students. In fact, the percentage of available published research by number of included CSPAP components progressively decreased from 35% (PE+1) to 21% (PE+2) to 16% (PE+3) to 0% (4 component, excluding PE).
- 4. Multi-component CSPAP research that investigates the effect on academic outcomes, regardless how operationalized. The Centers for Disease Control and Prevention (2014) provided a nice organizational guide for identifying possible academic outcomes to be measured.

Carson, R. L., Dauenhauer, B., Kuhn, A., & Stoepker, P. (2018). *Research implications: Comprehensive school physical activity program (CSPAP)* research to practice literature review. Washington, DC: Active Schools.



5. Multi-component CSPAP research performed in suburban schools and/or with students of high socioeconomic status. A suburban setting was identified in one published study.

Researchers interested in filling these research gaps should review the complementary practitioner brief from this CSPAP bibliography for detailed information about the specific interventions by component with most promise. Further, the evidence-based practices associated with the whole school, whole community, whole child (WSCC) model are now available (Carson et al., 2018) and may be another good resource for review before investigating a multi-component CSPAP intervention. Good Luck!

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NOTES

PE+1 (35%, all elementary)

- During School (92%)
- US (83%), Urban (58%), not specified (42%)
- Elem (100%), low SES (50%), not specified (50%)

Implementing CSPAP interventions with a PE+1 approach resulted in positive student outcomes related to physical activity (58%), motor skills (17%), BMI (8%), and on-task behavior in elementary settings. Future research should examine PE+1 interventions in secondary schools and rural settings, and the impact of PE+1 interventions on other academic outcomes beyond on-task behavior in both elementary and secondary settings.

PE+2 (21%)

- During School (100%), Family/Community (72%), PA Before/After (28%)
- International (100%), Urban & rural (29%), Not specified (43%)
- Elem (72%), Sec (29%), Low SES (29%), Not specified (72%)

Implementing CSPAP interventions with a PE+2 approach resulted in positive student outcomes related to physical activity (43%), aerobic fitness (29%), weight/BMI (14%), and muscular fitness (14%) in elementary and secondary international settings. Further research should examine PE+2 interventions in secondary schools as well as within both urban and rural settings in the U.S. A worthy area of inquiry is the impact of PE+2 interventions on academic outcomes in both elementary and secondary settings.

PE+3 (16%)

- During School (100%), PA Before/After (83%), Family/Community (67%), SI (50%)
- US (67%), Urban (33%), unspecified (50%), Elem (50%), Sec (33%), Low *33%), unspecified (67%)

Implementing PE+3 multicomponent interventions resulted in positive student physical health outcomes related to weight/BMI (50%) and physical activity (33%) in both elementary and secondary settings. More research is needed to examine PE+3 multicomponent interventions in elementary and low SES settings. One PE+3 multicomponent intervention was related to improvements in academic outcomes – improvements in math & reading (17%). Further investigations of the impact of PE+3 multicomponent interventions on academic outcomes in all settings (i.e., elementary, secondary, urban, and rural) is warranted.

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Full CSPAP (1 total, 3%)

· US, not specified school setting, elem, low SES

Implementing a full CSPAP intervention resulted in a positive student health outcome: increased physical activity levels (100%). There is a need for more research examining the effect of implementing all five CSPAP components related to student health and academic outcomes. Future research should examine a full CSPAP in both elementary and secondary schools, as well as in rural, urban, and suburban settings.

2 Non-PE (1 total, 3%)

- During School, Family/Community
- US, Urban, secondary, unspecified SES

Implementing CSPAP interventions with two non-PE CSPAP components resulted in positive student outcomes related to physical activity in an urban elementary setting. Although CSPAP implementation without quality physical education as the cornerstone is not recommended, future research could examine the effect that two non-PE interventions have on other student health outcomes in elementary and rural settings. Researchers could also study how two multicomponent interventions impact student academic outcomes in both the elementary and secondary settings.

3 non-PE (1 total, 3%)

- During School, SI, Family/Community
- International, unspecified school setting, sec, low SES

Implementing a three component CSPAP intervention without physical education led to no effect on student health outcomes (Weight/BMI). Although CSPAP implementation without quality physical education as the cornerstone is not recommended, future research could explore changes in the combination of three non-PE component interventions and the impacts on student health outcomes. Future research could also explore how three multicomponent interventions (without PE) influence student academic outcomes in varied settings (i.e., elementary, urban, and rural).

No 4 non-PE (0%)

Systematic Review (15%)

- PE 100%, During (100%), Family/Community (80%), SI (40%), Before/After (20%)
- International (100%) unspecified school setting & SES (100%), elem & sec (100%),

Implementing multicomponent school-based physical activity interventions can improve student physical activity levels (80%), Health/Fitness (20%). It would be useful to examine the impact of multicomponent interventions on other health and academic outcomes in both elementary and secondary schools as well as in urban and rural settings.

Elem Interventions (82%)

- PE 100%, including systematic reviews
- International (50%), US (46%), unspecified school setting (64%) & SES (67%), urban (25%), low SES (35%)

CSPAP interventions in elementary settings can have positive effects on students' health and academic outcomes. Most interventions improved student physical activity levels (64%) among other health outcomes (e.g., BMI, 14%)). Two interventions (8%) assessed academic outcomes and found students that engaged in the CSPAP intervention showed improvements in on-task behavior, and rates of improvement in math and reading. Future research should examine CSPAP implementation outcomes beyond physical health and explore the impact that CSPAP has on elementary school students in rural and suburban areas.

Sec Interventions (32%)

- PE 91%
- International (82%), unspecified school setting (82%) & SES (82%), low (18%)

CSPAP interventions at the secondary level can positively influence student physical activity (64%) and other health outcomes – BMI (27%), Fitness (9%). Similar to the elementary setting, future research should examine CSPAP outcomes beyond physical health. There is also a need for further examination of CSPAP at the secondary level in low SES urban and rural areas.

Health Outcomes (91%)

- PE 97%, includes Full CSPAP
- International (58%), US (42%), unspecified school setting (68%), urban (23%), elem (61%), sec (19%), elem/ sec (19%), unspecified SES (65%), low SES (35%)

The majority of the CSPAP interventions led to increases in student physical activity levels (62%) and improved weight/BMI (19%). Future research should examine CSPAP implementation in secondary settings and additional health outcomes beyond physical activity – fitness (13%), motor skills (6%). Further, research should also examine the impact of CSPAP implementation on health outcomes in more rural and urban areas.

Academic Outcomes (3 studies or 9%)

- PE 100%, During (100%); PE +1 66%, PE +3 (33%)
- US 100%), unspecified school setting (100%) & SES (100%), Elem (100%).

One intervention resulted in greater odds of achieving 80% on-task behavior, while the other study that focused on student on-task behavior resulted in an increase overall on-task behavior. The third study assessing academic achievement suggested the multicomponent intervention was a significant predictor of students' reading comprehension rates. Implementing CSPAP interventions in elementary schools can result in increased student on-task behavior as well as reading comprehension. Future research should examine how CSPAP implementation can impact student academic outcomes in secondary settings and in other countries.



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