

Excellence in Prevention – descriptions of the prevention programs and strategies with the greatest evidence of success

Name of Program/Strategy: Parents as Teachers

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1. Overview and description

Parents as Teachers (PAT) is an early childhood family support and parent education home-visiting model. Families may enroll in Parents as Teachers beginning with pregnancy and may remain in the program until the child enters kindergarten. Based on theories of human ecology, empowerment, self-efficacy, and developmental parenting, Parents as Teachers involves the training and certification of parent educators who work with families using a comprehensive research-based and evidence-informed curriculum. Parent educators work with parents to strengthen protective factors and ensure that young children are healthy, safe, and ready to learn. The goals of the model are to increase parent knowledge of early childhood development, improve parenting practices, provide early detection of developmental delays and health issues, prevent child abuse and neglect, and increase children's school readiness and school success. Different curriculum materials are used for those working with families of children up to age 3 and those working with families of children from age 3 to kindergarten.

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Home visitation is the key component of the Parents as Teachers model, with personal visits of approximately 60 minutes delivered weekly, every 2 weeks, or monthly, depending on family needs. Parent educators share research-based information and use evidence-based practices by partnering, facilitating, and reflecting with families. Parent educators use the Parents as Teachers curriculum in culturally sensitive ways to deliver services that emphasize parent-child interaction, development-centered parenting, and family well-being. Parent-child interaction focuses on promoting positive parenting behaviors and child development through parent-child activities. Development-centered parenting focuses on the link between child development and parenting and on key developmental topics (i.e., attachment, discipline, health, nutrition, safety, sleep, transitions/routines, and healthy births). Family well-being includes a focus on family strengths, capabilities, skills, and the building of protective factors.

A second component of the Parents as Teachers model is monthly or more frequent group connections, which parents can attend with their child to obtain information and social support and share experiences with their peers. Group connection formats include family activities, presentations, community events, parent cafes, and ongoing groups. Annual health, hearing, vision, and developmental screenings, beginning within 90 days of enrollment, are a third component of the model. Additionally, Parents as Teachers affiliates establish ongoing relationships with institutions and community organizations that serve families. Parent educators help families identify needs, set goals, connect with appropriate resources, and overcome barriers to accessing services.

2. Implementation considerations (if available)

Ideally, a parent educator has a bachelor's degree in an area such as early childhood education, human services, or a related field; however, a high school degree and 2 years of supervised work experience with young children and/or parents are acceptable.

3. Descriptive information

Areas of Interest	Mental health promotion
Outcomes	1: Cognitive development 2: Mastery motivation 3: School readiness 4: Third-grade achievement
Outcome Categories	Education

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Ages	0-5 (Early childhood)
Gender	Male Female
Races/Ethnicities	Black or African American White Race/ethnicity unspecified
Settings	Home
Geographic Locations	Urban Suburban Rural and/or frontier
Implementation History	Parents as Teachers was established and first piloted in Missouri in 1981 to alleviate the learning and achievement gaps in children entering kindergarten. More than 2,000 Parents as Teachers affiliates are implementing the model, serving more than 250,000 children in more than 200,000 families across all 50 States and in other countries (including Australia, Canada, England, Germany, Mexico, New Zealand, Scotland, Switzerland, and Wales). Research studies have been conducted and supported by State governments, independent school districts, private foundations, universities, and research organizations, and outcome data have been collected from more than 16,000 children and parents. The intervention has been evaluated in four independent, randomized controlled trials and many quasi-experimental and qualitative studies, many of which have been described in peer-reviewed publications.
NIH Funding/CER Studies	Partially/fully funded by National Institutes of Health: No Evaluated in comparative effectiveness research studies: Yes
Adaptations	Curriculum materials and training have been translated and adapted for replications in Australia, Belize, Canada, China, Germany, Mexico, New Zealand, and the United Kingdom.
Adverse Effects	No adverse effects, concerns, or unintended consequences were identified by the developer.
IOM Prevention Categories	Universal

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4. Outcomes

Outcome 1: Cognitive development

Description of Measures	Cognitive development was assessed using the Bayley Scale of Mental Development, Second Edition (BSMD), one of the scales from the Bayley Scales of Infant Development. The BSMD assesses sensory/perceptual acuities, discriminations, and the ability to respond to these; the early acquisition of object constancy; memory learning and problem-solving ability; vocalization and the beginning of verbal communication; the basis of abstract thinking; habituation; mental mapping; complex language; and mathematical concept formation.
Key Findings	Families were randomly assigned to receive either PAT or a comparison intervention that included a general parent education program with handouts and access to various developmental activities (e.g., stories, songs, gym, swimming, parent discussion groups). Among families with low socioeconomic status, children who received PAT had better cognitive development at 24 months of age than did their counterparts in the comparison group ($p < .01$).
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.4 (0.0-4.0 scale)

Outcome 2: Mastery motivation

Description of Measures	Mastery motivation is the psychological force that stimulates an individual to independently and in a focused and persistent manner attempt to solve a problem or master a skill or task that is at least moderately challenging. Mastery motivation testing assesses the child's persistence in goal-directed behavior, problem solving, and affect or pleasure in engaging in these tasks. Assessors introduced various toys (e.g., puzzles, shape sorters) and evaluated children's persistence, pleasure, and competence at 15-second intervals for up to 4 minutes. Task persistence was measured as the number of times the child remained on task throughout playing with the toy.
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	Task pleasure was measured as the number of times the child showed positive affect at play. Completion of each task was scored with a scaled system.
Key Findings	Families were randomly assigned to receive either PAT or a comparison intervention that included a general parent education program with handouts and access to various developmental activities (e.g., stories, songs, gym, swimming, parent discussion groups). At 24 months of age, children receiving PAT had better task competence with the puzzle test than did comparison group children ($p < .04$), a finding associated with a small effect size (Cohen's $d = 0.23$). At 36 months, children receiving PAT had better task competence with the cause and effect test than did comparison group children ($p < .02$), a finding associated with a small effect size (Cohen's $d = 0.25$).
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.0 (0.0-4.0 scale)

Outcome 3: School readiness

Description of Measures	School readiness was measured using the School Entry Profile, a 65-item instrument reflecting skills, knowledge, behaviors, and dispositions important at kindergarten entry. Seven conceptual areas are assessed: symbolic development, communication, working with others, mathematical/physical knowledge, learning to learn, physical development, and conventional knowledge. Items in the symbolic development, communication, working with others, mathematical/physical knowledge, and learning to learn domains are assessed with a 3-point scale: almost always, occasionally/sometimes, and not yet/almost never. Items in the physical development and conventional knowledge domains are scored "yes" or "no." Responses on the 7 scales are summed to form an overall school readiness score. Kindergarten teachers completed the instrument within the first 6-8 weeks of school.
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Key Findings	Compared with parents who did not receive PAT, parents who received PAT read to their child more often ($p < .001$) and were more likely to enroll their child in preschool ($p < .001$), both of which, in turn, increased school readiness ($p < .001$). PAT participation also directly affected school readiness ($p < .001$), suggesting that the parents' childrearing practices were changed in beneficial ways beyond those assessed in the study.
Studies Measuring Outcome	Study 2
Study Designs	Quasi-experimental
Quality of Research Rating	3.1 (0.0-4.0 scale)

Outcome 4: Third-grade achievement

Description of Measures	Third-grade achievement was measured using the Missouri Assessment Program (MAP) Communication Arts Assessment. The version of the MAP assessment in use during the study included 47 selected response items, 8 constructed response items, and 1 writing prompt. The majority of the responses were scored electronically, while teachers scored some constructed responses and writing-sample responses as part of a staff development program. All correct responses and points earned were used to derive the MAP scale score used in this study.
Key Findings	Compared with parents who did not receive PAT, parents who received PAT read to their child more often ($p < .001$) and were more likely to enroll their child in preschool ($p < .001$), both of which, in turn, increased school readiness ($p < .001$). School readiness at kindergarten entry was the strongest predictor of 3rd-grade achievement ($p < .001$), far outweighing the demographic variables of age, gender, poverty, and minority status. PAT participation also directly affected 3rd-grade achievement ($p < .001$), suggesting that the parents' childrearing practices were changed in beneficial ways beyond those assessed in the study.
Studies Measuring Outcome	Study 2
Study Designs	Quasi-experimental
Quality of Research Rating	3.2 (0.0-4.0 scale)

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5. Cost effectiveness report (Washington State Institute of Public Policy – if available)

<p>Benefits minus cost, per participant</p> <p>Source: Return on Investment: Evidence-Based Options to Improve Statewide Outcomes - <i>July 2011 Update</i>. Washington State Institute for Public Policy, http://www.wsipp.wa.gov/rptfiles/11-07-1201.pdf. Benefits and Costs of Prevention and Early Intervention Programs for Youth – <i>2004 update</i>. Washington State Institute for Public Policy, http://www.wsipp.wa.gov/pub.asp?docid=04-07-3901. Costs and Benefits of Prevention and Early Intervention Programs for At-Risk Youth: Interim Report – <i>2003</i>. Washington State Institute for Public Policy, http://www.wsipp.wa.gov/pub.asp?docid=03-12-3901.</p>	<p>According to the Washington State Institute for Public Policy, the program/strategy returns</p> <p><u>\$800 per individual</u></p> <p>in savings that would otherwise be associated with education, substance abuse, teen pregnancy, child abuse and neglect, or criminal justice system.</p>
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6. Washington State results (from Performance Based Prevention System (PBPS) – if available)

7. Who is using this program/strategy

Washington Counties	Oregon Counties
Garfield, Whitman	

8. Study populations

The following populations were identified in the studies reviewed for Quality of Research.

Study	Age	Gender	Race/Ethnicity
Study 1	0-5 (Early childhood)	50.1% Male	65.8% White 28.8% Black or African

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		49.9% Female	American 5.4% Race/ethnicity unspecified
Study 2	0-5 (Early childhood)	51% Male 49% Female	85% White 15% Race/ethnicity unspecified

9. Quality of studies

The documents below were reviewed for Quality of Research. The research point of contact can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

Study 1

Drotar, D., Robinson, J., Jeavons, L., & Kirchner, H. L. (2008). A randomized, controlled evaluation of early intervention: The Born to Learn curriculum. *Child: Care, Health and Development*, 35(5), 643-649.

Study 2

Zigler, E., Pfannenstiel, J. C., & Seitz, V. (2008). The Parents as Teachers program and school success: A replication and extension. *Journal of Primary Prevention*, 29(2), 103-120.

Supplementary Materials

Drotar, D. D., Hurwitz, H. M., & Kirchner, H. L. (2006). The Cleveland Eastern Suburban Born to Learn program: Final report. Cleveland, OH: Case Western Reserve University School of Medicine.

Pfannenstiel, J. (1999). School Entry Assessment Project: Report of findings. Prepared for the Missouri Department of Elementary and Secondary Education. Overland Park, KS: Research & Training Associates.

Pfannenstiel, J., & Zigler, E. (2007). Pre-kindergarten experiences, school readiness and early elementary achievement. Report prepared for Ewing Marion Kauffman Foundation. Overland Park, KS: Research & Training Associates.

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Quality of Research Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the Quality of Research for an intervention's reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see Quality of Research.

Outcome	Reliability of Measures	Validity of Measures	Fidelity	Missing Data/Attrition	Confounding Variables	Data Analysis	Overall Rating
1: Cognitive development	4.0	4.0	3.0	3.3	2.5	3.5	3.4
2: Mastery motivation	3.5	2.3	3.0	3.3	2.5	3.5	3.0
3: School readiness	4.0	3.8	2.3	2.3	2.5	4.0	3.1
4: Third-grade achievement	4.0	4.0	2.3	2.3	2.5	4.0	3.2

Study Strengths

Most of the measures used in the studies are well standardized, with good reliability and validity. For example, the BSMD is considered the gold standard for measuring cognitive development in children. Although no information about the validity of the mastery motivation procedure was provided, the procedure has been used in a number of studies and has face validity. Intervention fidelity for the first study was well documented. For this study, standardized manuals and handouts were used, parent educators were extensively trained by the Parents as Teachers National Center staff during a weeklong session, and implementation was monitored in accordance with the national center's standards; more than 90% of the objectives were met based on rated videotapes of home visits, with inter-rater reliability ranging from .75 to .91 for the assessors who rated the videotapes. Also in the first study, rates and

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reasons for attrition were noted as similar across study conditions, and sensitivity analyses were conducted to determine the impact of missing data on outcomes. This study employed an experimental design, which reduced the potential for confounding variables. Throughout both studies, appropriate statistical analyses were conducted using a variety of descriptive and multivariate procedures; one study employed an intent-to-treat analysis using a mixed-linear model, and the other used path analyses, with further analyses showing excellent model fit. Sample sizes ranged from adequate to large.

Study Weaknesses

There appear to be multiple threats to intervention fidelity. The frequency of the visits was less than optimal in both studies, and activities to support intervention fidelity were not well described for the second study. In both studies, parent educators were trained to provide the standard PAT curriculum, but they developed or acquired supplementary materials they believed would enhance the program. In the first study, attrition rates were relatively high. Both studies had a number of confounding variables. For example, the retrospective design of the second study did not account for the effect that experiences other than PAT could have had on the outcomes.

10. Readiness for Dissemination

The materials below were reviewed for Readiness for Dissemination. The implementation point of contact can provide information regarding implementation of the intervention and the availability of additional, updated, or new materials.

Dissemination Materials

Parents as Teachers National Center. (2003). CD toolkit and self-study workbook [CD-ROM]. St. Louis, MO.

Parents as Teachers National Center. (2004). Introducing the Parents as Teachers standards and self-assessment process [DVD]. St. Louis, MO.

Parents as Teachers National Center. (2005). Outcomes measurement toolkit. Retrieved from <http://measures.patnc.org/measures/> Parents as Teachers National Center. (2005). Parents as Teachers Born to Learn logic model. St. Louis, MO.

Parents as Teachers National Center. (2005). Supervisor's manual and program administration guide. St. Louis, MO.

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Parents as Teachers National Center. (2006). Module A, Born to Learn curriculum introduction, prenatal to 3 years. St. Louis, MO. Parents as Teachers National Center. (2006). Module B, Born to Learn curriculum, prenatal to 13 months. St. Louis, MO.

Parents as Teachers National Center. (2006). Module C, Born to Learn curriculum, 14 months to 3 years. St. Louis, MO. Parents as Teachers National Center. (2008). Born to Learn Institute, prenatal to 3 years, course outline. St. Louis, MO.

Parents as Teachers National Center. (2008). Institute trainers development program, Born to Learn, prenatal to 3 years, State training team. St. Louis, MO.

Parents as Teachers National Center. (2008). Parents as Teachers Born to Learn curriculum, 3 years to kindergarten entry [CD-ROM]. St. Louis, MO.

Parents as Teachers National Center. (2008). Parents as Teachers Born to Learn curriculum, 3 years to kindergarten entry [Table of contents]. St. Louis, MO.

Parents as Teachers National Center. (2008). Parents as Teachers Born to Learn, prenatal to 3 years, manual & supporting pieces for national trainers [CD-ROM]. St. Louis, MO.

Parents as Teachers National Center. (2008). Visit tracker: Web-based family contact management. Retrieved from <https://www.visittrackerweb.com>.

Parents as Teachers National Center. (2009). Born to Learn training packet, prenatal to 3 years: 5 day. St. Louis, MO.

Parents as Teachers National Center. (2009). Quality assurance guidelines for new Parents as Teacher Born to Learn programs. St. Louis, MO.

Parents as Teachers National Center. (2009). The PAT standards and self-assessment guide. St. Louis, MO. Parents as Teachers National Center. (2010). Parents as Teachers Born to Learn program plan. St. Louis, MO. Parents as Teachers National Center. (2010). Parents as Teachers: Research and program quality. St. Louis, MO. Parents as Teachers National Center. (n.d.). Institute training video, discs 1 and 2 [DVD]. St. Louis, MO.

Program Web site, www.parentsasteachers.org

Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:

1. Availability of implementation materials

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2. Availability of training and support resources

3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see Readiness for Dissemination.

Implementation Materials	Training and Support Resources	Quality Assurance Procedures	Overall Rating
4.0	4.0	4.0	4.0

Dissemination Strengths

An array of high-quality information and decision-support tools is available to assist with implementation. The program plan is an extremely valuable tool to support successful implementation, providing guidance in all key planning areas from staff selection to program evaluation. Parent training materials are exceptional in content and quality, developed with clear consideration for developmental differences across children's ages. The curricula, supervisor manuals, and training materials are comprehensive and well organized. Training and support are readily available to implementers in a variety of formats. Training includes guidance to implementers in addressing participant diversity and cultural competence issues. The program evaluation handbook guides measurement of outcomes, including the collection and use of data to improve program delivery. A logic model provides a simplified visual description of the model to facilitate successful implementation and support quality assurance. Extensive guidance is provided on monitoring and ensuring fidelity to the model as a part of a comprehensive quality assurance process.

Dissemination Weaknesses

No weaknesses were identified by reviewers.

11. Costs (if available)

The cost information below was provided by the developer. Although this cost information may have been updated by the developer since the time of review, it may not reflect the current costs or availability of items (including newly developed or discontinued items). The implementation point of contact can provide current information and discuss implementation requirements.

Item Description	Cost	Required by Program Developer
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5-day, off-site parent educator Foundational and Model Implementation training (includes all program materials and 1-year access to online materials for serving families prenatally to age 3)	About \$800 per parent educator, but varies by location	Yes
2-day, off-site parent educator training for the 3 Years to Kindergarten Entry curriculum (includes printed curriculum), to implement the 3 Years to Kindergarten Entry curriculum	About \$225-\$450 per parent educator	Yes
Annual recertification and online access fee	\$75 per parent educator	Yes

Additional Information

After initial start-up expenses, the cost to provide Parents as Teachers services to families is estimated to be approximately \$2,500 per family for twice-monthly visits. Parents as Teachers provides resources to help new affiliates build a realistic and comprehensive budget.

12. Contacts

For information on implementation:

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 (314) 432-4330 ext 259
 Jan.Watson@parentsasteachers.org
 info@parentsasteachers.org

For information on research:

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Learn More by Visiting: <http://www.parentsasteachers.org>

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