Parents' Daily Time With Their Children: A Workplace Intervention

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abstract

OBJECTIVES: In the context of a group randomized field trial, we evaluated whether parents who participated in a workplace intervention, designed to increase supervisor support for personal and family life and schedule control, reported significantly more daily time with their children at the 12-month follow-up compared with parents assigned to the Usual Practice group. We also tested whether the intervention effect was moderated by parent gender, child gender, or child age.

METHODS: The Support-Transform-Achieve-Results Intervention was delivered in an information technology division of a US Fortune 500 company. Participants included 93 parents (45% mothers) of a randomly selected focal child aged 9 to 17 years (49% daughters) who completed daily telephone diaries at baseline and 12 months after intervention. During evening telephone calls on 8 consecutive days, parents reported how much time they spent with their child that day.

RESULTS: Parents in the intervention group exhibited a significant increase in parent-child shared time, 39 minutes per day on average, between baseline and the 12-month follow-up. By contrast, parents in the Usual Practice group averaged 24 fewer minutes with their child per day at the 12-month follow-up. Intervention effects were evident for mothers but not for fathers and for daughters but not sons.

CONCLUSIONS: The hypothesis that the intervention would improve parents' daily time with their children was supported. Future studies should examine how redesigning work can change the quality of parent-child interactions and activities known to be important for youth health and development.

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Dr Davis contributed to the conceptualization and design of the diary component of the Work, Family, and Health Study (WFHS), conceptualized the current study, planned the analysis steps, and wrote most of this manuscript; Dr Lawson conducted the analyses for the paper, wrote the Results section, created the tables and figures, and reviewed, revised, and approved this manuscript; Dr Almeida led the conceptualization and design of the telephone interview diary component of the WFHS, consulted on the analytic approach, and reviewed, revised, and approved this manuscript; Dr Kelly was involved in the design of the WFHS, including the development and implementation of the workplace intervention, and reviewed, revised, and approved this manuscript; Dr King contributed to the conception, design, and interpretation of the data, revised the manuscript critically for important intellectual content, and gave final approval of the version submitted; Dr Hammer was involved in the design of the WFHS, including the development and implementation of the workplace intervention, and reviewed, revised, and approved this manuscript; Dr Casper led the design of the original Workplace, Family, Health and Well-being Network Initiative, and reviewed, revised, and approved the manuscript; Drs Okechukwu and Hanson reviewed, revised, and approved this manuscript; Dr McHale contributed to the conceptualization, design, and measurement design of the diary component of the WFHS, provided analytic consultation, and reviewed, revised and approved this manuscript.

www.pediatrics.org/cgi/doi/10.1542/peds.2014-2057

DOI: 10.1542/peds.2014-2057

Accepted for publication Feb 19, 2015

WHAT'S KNOWN ON THIS SUBJECT: Children's time with parents is critical for healthy development. Lack of control over parents' schedules and limited supervisor support for personal and family life can interfere with parents' family time.

WHAT THIS STUDY ADDS: This is the first group randomized controlled field trial demonstrating effects of a workplace intervention, designed to increase schedule control and supervisor support, on working parents' time with their children, as assessed by using longitudinal daily telephone interviews.

Time with parents is a significant factor in children's health and development. Shared activities promote close, nurturing relationships that are critical for youths' psychological and behavioral adjustment[1–3] and for their ability to develop close relationships with peers and romantic partners.[4,5] Parent-child shared time also affords opportunities for parents to monitor their children's activities and deter health risk behaviors,[6] promote healthful eating and exercise,[7,8] arrange health care appointments,[9,10] and foster skills and knowledge that are important for youths' current and future successes.[11]

With longer work days and commute times, more nonstandard work schedules, and greater work stress, it is more difficult to be a parent today than in the past.[12] Parents' time at work necessarily limits time to invest in children, and today's US working parents often report feeling the time squeeze, that is, insufficient time to fulfill responsibilities for both work and family.[13] Cultural standards set a high bar for what constitutes sufficient time with children and can place a strain on parents, increasing their feelings of work-family conflict and time inadequacy.[14] Yet, public and workplace policies are limited and mismatched in meeting the needs of working parents, needs that ultimately affect the welfare of children.[12,15]

Most research on parents' work and time with their children shows that longer work hours are associated with less parent-child time.[16] The correlational designs of this research, however, mean that conclusions about causal associations between work involvement or workplace conditions and parent-child shared time cannot be drawn. One exception is a study of a workplace initiative in a white collar organization that improved mothers' and fathers' perceptions of adequacy of time with their children; however, this study did not assess parents' actual time with children.[17] Most research in this area focuses on working parents with young children; we know little about the effects of parents' work on adolescent-aged offspring. Adolescents' increasing autonomy and involvement in the world beyond the family mean that parents and adolescents spend less time together than in childhood.[18] However, adolescents' time with parents remains important for their development,[19] and work policies and practices that allow parents to be responsive to their adolescents' schedules may promote parent-youth shared time.

The Work, Family, and Health Study (WFHS) builds on previous research to evaluate the effects of a workplace intervention designed to increase 2 resources: supportive supervisor behaviors for personal and family life and schedule control. Our hypotheses were that increases in work resources would reduce employees' work-family conflict and, in turn, benefit their health and family lives. Our study is situated within the work-home resource model,[20] which holds that work demands deplete parental resources, including time and energy, thereby influencing parents' family functioning. Correspondingly, work resources, such as supervisor support for personal and family life and schedule control can increase personal resources, with positive implications for family role performance, including increased time with children.[21] We hypothesized that parents in the intervention condition would exhibit significantly more daily time with their children 1 year after intervention, compared with parents who were randomly assigned to the Usual Practice (UP) condition. We also tested whether intervention effects varied as a function of parent gender, youth gender, or youth age. In line with gender role socialization that highlight the social and kinship orientations of women and girls,[22] we expected that the intervention would be most effective for mothers and for daughters. In line with developmental research that stresses youths' increasing involvement in the world beyond the family, we expected that the intervention would be more effective in the case of older adolescents.[23]

METHOD

Study Design

The WFHS is a group randomized, field experiment conducted in an information technology division of a US Fortune 500 company. We tested the effects of the STAR (Support-Transform-Achieve-Results) intervention, which was designed to promote a supportive work culture by increasing supervisor support for personal and family life and schedule control.[24,25] The STAR intervention was introduced by executives as a company-sponsored pilot program. The intervention was developed jointly by our research team and outside consultants who customized the materials for this work force. In an additional effort to keep the data collection and intervention separate, 4 facilitators delivered the STAR intervention to supervisors and employees, and a separate group of research staff, blind to participants' experimental assignment, was responsible for data collection.[24,25]

Fifty-six groups of information technology workers who reported to the same manager were randomized to either the intervention (STAR), or UP conditions. STAR involved facilitated training sessions (6 manager training sessions, 4 employee sessions) across a 4-month period. The sessions were designed to change work culture to focus on work results rather than when and where people perform their work,[17] that is, valuing work productivity rather than face time. In addition, managers completed a 1-hour computer-based training that focused on providing

emotional and instrumental support for employees facing family and personal demands, modeling effective work-family management, and identifying creative work-family management strategies.[26] Managers also were instructed to track their supportive behaviors by using the weSupport Behavior Tracking application. Research staff blinded to participants' group assignment conducted workplace interviews at baseline and 6, 12, and 18 months post-STAR. The WFHS was approved by several internal review boards. A detailed description of the intervention design and protocol has been published elsewhere.[27] All of the intervention materials can be found on the following Web site: www.workfamilyhealthnetwork.org.

Of the 823 employees who completed workplace interviews, 222 (26.97%) were eligible for home interviews because they were a parent of a child aged 9 to 17 who lived at home for at least 4 days a week and who was willing to participate in a home interview. Of the 147 employees who completed the baseline home interview, 131 participated in an 8-day daily telephone diary study at baseline (89.12%) and 99 (67.34%) participated at both baseline and the 12-month follow-up. The attriters (n = 32) did not differ from those who completed both the baseline and 12-month diary assessments (n = 99) in basic demographic information (eg, age, education, household income, number of children living in the home) or the target intervention variables (ie, schedule control and supervisor support for personal and family life; Fig 1). Over the course of 8 consecutive evenings, participants completed interviews assessing daily mood, health, work and family experiences, and time use. In addition to its ecological validity, the daily diary method reduces recall biases that can occur when parents provide global reports of their time use over extended periods.[28] Parents completed 7.81 (SD = 0.47) interviews, on average, at baseline, and averaged 7.92 (SD = 0.30) of 8 interviews at the 12-month follow-up. They received $150 and $200 for participation at baseline and 12 months, respectively.

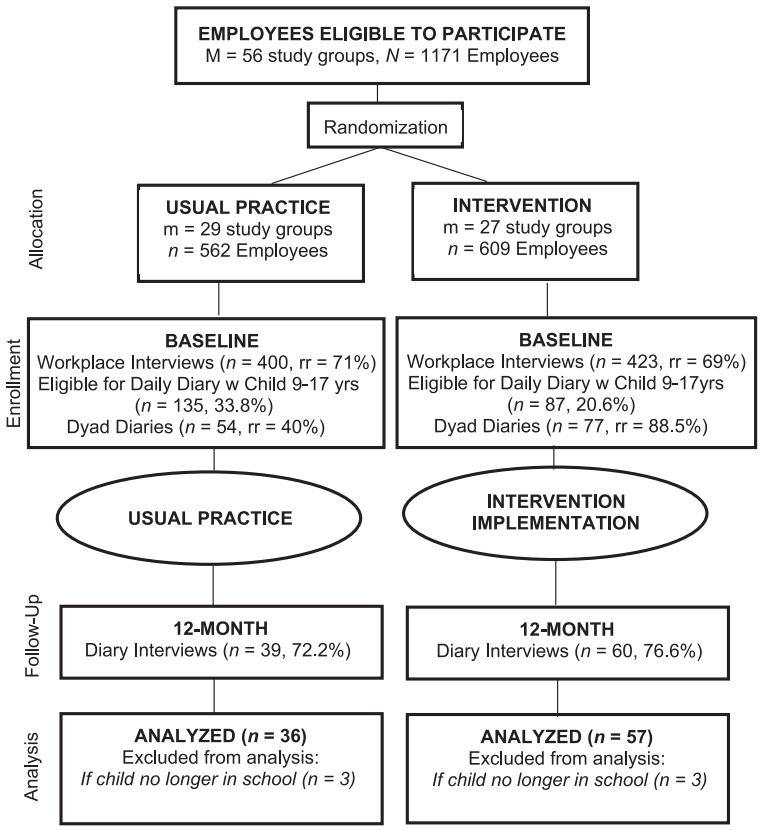

FIGURE 1
Flow diagram of WFHS recruitment and retention of employee parents. m, number of study groups; rr, response rate.

Participants

Analyses used the subsample of 93 parents (STAR = 57, UP = 36; 45% mothers) who participated in the diary study at baseline and 12 months. Most were college-educated, with annual household incomes > $100 000 (Table 1). Target children averaged 13 years of age, and about half were girls.

Measures

Daily parent-child time was assessed on each of 8 consecutive evenings with the following question: "Since this time yesterday, how much time did you spend taking care of or doing things with [TARGET CHILD NAME], such as helping with homework, playing with him/her, driving him/her around, or doing something else with him/her?" Time was converted to minutes per day.

The independent variables to test the intervention effect were Condition (0 = UP, 1 = STAR), Wave (0 = baseline, 1 = 12 months after assessment), and their interaction. Covariates included diary day (range = 1–8, centered at day 1), whether the youth was on summer vacation (0 = no, 1 = yes), mean number of school days across the 8 diary days at each wave, mean number of parent work days at each wave, parent and youth gender (0 = girls, 1 = boys), and youth age (centered at the grand mean at baseline). During the study rollout, the firm experienced a merger, which affected some employees; we included an indicator variable for

TABLE 1 Participant Demographic Information (n = 93)

	STAR Intervention Group, n = 57	UP Group, n = 36
	n (%) or Mean (SD)	
Employee		
Age	45.48 (6.16)	43.56 (4.71)
No. of children living in household	1.93 (0.90)	2.25 (1.20)
Work hours per week	46.84 (6.10)	45.78 (5.54)
Tenure, y	13.64 (7.66)	12.32 (5.74)
Female	28 (49.12%)	14 (38.89%)
College graduate	46 (80.70%)	28 (77.78%)
Married/cohabiting	49 (85.96%)	34 (94.44%)
Income more than $100 000/y	41 (77.36%)	22 (64.71%)
Child		
Age	12.93 (1.99)	13.31 (2.40)
Female	28 (49.12%)	19 (52.78%)

The intervention group and UP groups did not significantly differ in employee or child demographics.

merger experience (0 = no, 1 = yes). We tested whether the subsample of employees who consented to participate in the diary study were comparable on demographic characteristics (parent gender, parent age, parent education, child gender, child age, marital status, number of children living in home, household income), general work characteristics (work hours, tenure at company), and the intervention targets: supervisor support for personal and family life[21] and schedule control.[17] The STAR and UP diary groups differed only on parents' schedule control at baseline, measured by an 8-item scale in the workplace interview (eg, "How much choice do you have over when you begin and end work each day?"),[29] and so this measure was added as a covariate.

Statistical Analyses

We used intent-to-treat analyses.[30] We created an interaction term between wave and intervention condition (UP, STAR) to indicate whether the 2 groups differed in the extent of change in daily parent-child time from baseline to 12 months. To account for the clustering of observations within persons, we tested multilevel models using SAS Proc Mixed (SAS Institute, Inc, Cary, NC). For significant interactions, simple slopes tests were used to determine if increases or decreases were significantly different from zero.[31]

RESULTS

Main Effects of the STAR Intervention

Compared with UP parents, those in STAR increased in parent-child time from baseline to the 12-month follow-up, B = 62.44, 95% confidence interval (CI) = 30.76 to 64.13 (Table 2). This increase, an average of 39 minutes per day, was significant, B = 38.60, $P < .01$. By contrast, parents in the UP condition averaged 24 fewer minutes per day with their children, B = –23.84, $P = .06$ from baseline to follow-up.

Moderation Analyses

Parent gender, B = –113.03, 95% CI = –176.68 to 49.38, and youth gender, B = –78.49, 95% CI = –141.67 to 15.31, but not youth age, were significant moderators of the intervention effect. First, the intervention was more effective in increasing mother-child time than father-child time (Fig 2). Mothers in the intervention group exhibited a significant increase in shared time from baseline to the 12-month follow-up to 58 minutes per day, B = 23.93, 95% CI = –27.13 to 88.62. By contrast, mothers in the UP group exhibited a significant decrease: approximately 70 minutes per day, B = –69.53, 95% CI = –106.29 to 32.77. Increases in intervention-group fathers' time reached trend level, B = 23.93, 95% CI = –3.07 to 50.94, but there was no change among fathers in the UP group and no significant group difference in changes in fathers' time, B = –9.56, 95% CI = –22.58 to 41.70. The intervention also was more effective in increasing parent-daughter relative to parent-son time (Fig 3). Parents in the intervention group exhibited a significant increase from baseline to the 12-month follow-up, 70 minutes per day, in time with daughters, B = 70.23, 95% CI = 41.03 to 99.43, whereas parents in the UP group declined by ~34 minutes, B = –33.79, 95% CI = –70.55 to 2.97. There were no group differences in change in shared time for parents of sons.

TABLE 2 Average Parent-Child Time Together (Minutes Per Day) at Baseline and 12 Months for STAR and UP Groups

	Baseline		12 Months	
	Mean	SD	Mean	SD
STAR	148.94	139.96	182.31	186.95
UP	130.26	117.75	116.36	105.91

DISCUSSION

Changing parents' work (by increasing schedule control and supervisor's support for employees' personal and family life) can facilitate more time with children, a significant intervention outcome given previous research on the role of parental time in their children's healthy development.[1–11] This is the first study to demonstrate that a workplace intervention designed to train managers to be supportive of employees' personal and family life[21,26] and increase employees' control over when and where they work[17] can increase employees' time with their children. Parents in the STAR intervention reported an average of 39 minutes more time per day or 4.5 hours per week with their child at 1 year after intervention. By contrast, parents randomly assigned to UP exhibited declines in time with

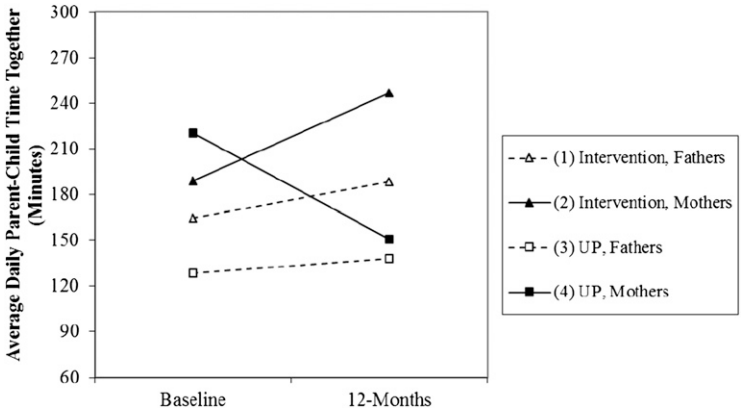

FIGURE 2

Intervention effects on average daily parent-child time together by parent gender. The figure represents the average daily parent-child time together (in minutes) across time for both the Intervention and UP groups.

their children over the same period, declines that would be expected given the increasing autonomy of adolescents.[18] Youths' increasing involvement in the world beyond the home, in combination with parents' demanding work schedules, may create special challenges for parents' time with adolescent-aged children. Close parent-child relationships remain important, however, in protecting youth from the increases in adjustment problems and health risk behaviors that often emerge during this developmental period.[32] By providing parents with support from managers and flexibility in when and where to complete their work, our results suggest that the STAR intervention opened up opportunities for parents to remain connected to their adolescents.

Changes in parent-child time were more apparent for mothers than for fathers. Mothers in STAR increased nearly 1 hour per day by the 12-month follow-up, whereas UP mothers declined by more than an hour per day in time with their child. Although the simple slopes test revealed a trend-level increase in parent-child time for fathers in STAR, they did not differ significantly from UP fathers. Past decades have witnessed increases in fathers' time with children, but cultural scripts regarding mothers' role as caregiver and fathers' role as breadwinner remain pervasive[34] and mothers still spend more time than fathers.[33] One strategy mothers use is limiting their time on personal activities.[14] Important to note is that mothers in this sample did not work significantly fewer hours per week (baseline means: 46.24 and 46.59 hours per week for mothers and fathers, respectively), and work hours did not significantly change for either mothers or fathers. Thus, mothers may have been more inclined to take advantage of the opportunities and supports afforded by STAR to spend time with their children.

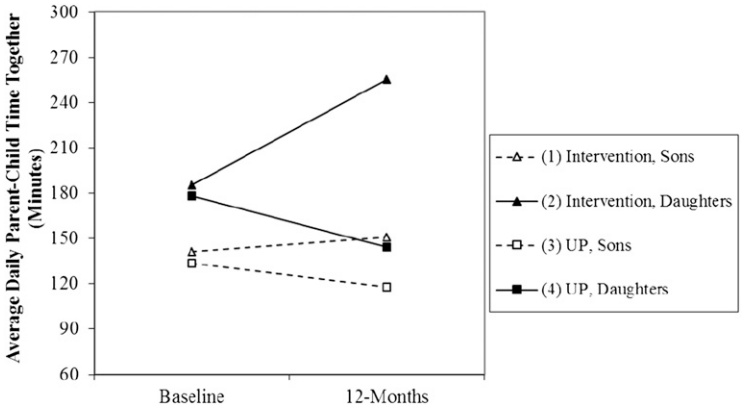

FIGURE 3

Intervention effects on average daily parent-child time together by child gender. The figure represents the average daily parent-child time together (in minutes) across time for both the Intervention and UP groups.

Our findings on youth gender moderation suggest that children, too, play an important role in these processes: daughters may be more inclined than sons to seek out their parents or be seen by their parents as more available for and amenable to conversations and companionate activities. Indeed, research on developmental changes in parent-child time has shown that, across adolescence, mother-daughter dyads spend more time together than dyads of any other gender constellation,[35] and our findings fit with this pattern. This finding could also reflect parenting practices that tend to keep daughters under closer supervision than sons.[36] The sample size limited our ability to test whether mother-daughter dyads showed the largest increase in shared time compared with other parent-child gender constellations; this is a direction for future research.

Taken together, our findings are consistent with the work-home resource model,[20] which holds that work demands deplete resources but that work resources can increase parents' resources, including time, with positive implications for family role performance. Early results showed that the STAR intervention improved 2 workplace resources (supportive supervisor behaviors and schedule control[27]) and our analyses

revealed that it also increased employees' time with children. By promoting schedule control in the context of supervisor support, STAR may have provided more flexibility for parents to spend time when their adolescent-aged offspring were available, and such time investments are known to have positive downstream implications for youth adjustment.[1–11]

Important to note is that this study tested the effects of a workplace intervention on quantity but not quality of parent-child time. Although more time together brings opportunities for positive parent-child experiences, it does not guarantee them. The autonomy of adolescence, however, means that youths have increasing opportunities to avoid spending time with their parents when shared time is not rewarding, and further, there is evidence that the quantity of parent-child shared time is linked to adjustment measures, such as self-esteem and peer social competence in adolescence.[35] Other research identified specific activities, such as family meals, assisting with homework, and discussing daily activities, that are linked to positive youth outcomes,[37,38] and thus determining whether and what workplace resources promote involvement in particular kinds of activities or interactions is a direction for future study.

In this study, we used parents' rather than youths' daily reports of shared time. Although our daily measure reduces memory distortions and social desirability biases because reports focus on a single day, future research should take youths' perspectives into account. Reports from individuals not directly involved in the intervention (such as youths or spouses) would provide confidence that behavioral changes are due to the intervention and not placebo-type effects. Although using a more traditional time diary approach could provide more accurate reports of time use than end-of-day reports,[39] the latter approach was more viable for a sample of working parents with limited time. We also focused on parents' time with 1 "target child," aged 9 to 17 who lived at home for at least 4 days per week, and thus our findings are not generalizable to youths in other age groups or family circumstances. Another important direction for research is to test the effects of efforts to increase supervisor support for personal and family life and schedule control in work organizations and industries beyond the white-collar context we studied. Finally, although our previous research documented significant increases in family supportive supervisor behavior and schedule control and decreases in work-family conflict in the intervention group relative to the UP group,[40] a next step is to identify the mechanisms through which the intervention affected parent-child shared time.

In the face of some limitations, our research advances understanding of the effects of parents' work on family life. Most importantly, the design allows for causal inferences about the effects of the intervention, leading to the conclusion that workplace practices can have positive effects in employees' family lives and benefit their children. Using daily measurements, we were able to document with precision the effects of the intervention on a key dimension of parent-child relationship quality (how much time youth spend with their parents) that is critical for youth health and adjustment.

CONCLUSIONS

By using an experimental design and daily measurement, we documented that the effects of a workplace intervention spilled over to affect employees' family lives in the form of increases in parents' time investments in their children. Our results were consistent with theory and previous, largely correlational findings in suggesting that workplace changes that target 2 key workplace resources (supervisor support for personal and family life and employee schedule control) can help to mitigate the often conflicting demands and responsibilities of work and family.

ACKNOWLEDGMENTS

Special acknowledgment goes to Extramural Staff Science Collaborator, Rosalind Berkowitz King, PhD, and Lynne Casper, PhD, for design of the original Workplace, Family, Health and Well-Being Network Initiative. A special thanks goes to Emily Fidler and Rosalie Ammerman for their assistance in preparing this manuscript.

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

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

FUNDING: This research was conducted as part of the Work, Family, and Health Network (www.WorkFamilyHealthNetwork.org), which is funded by a cooperative agreement through the National Institutes of Health and the Centers for Disease Control and Prevention: *Eunice Kennedy Shriver* National Institute of Child Health

and Human Development (U01HD051217, U01HD051218, U01HD051256, U01HD051276), National Institute on Aging (U01AG027669), Office of Behavioral and Social Sciences Research, and National Institute for Occupational Safety and Health (U010H008788, U01HD059773). Grants from the National Heart, Lung, and Blood Institute (R01HL107240), William T. Grant Foundation, Alfred P. Sloan Foundation, and the Administration for Children and Families have provided additional funding. The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of these institutes and offices. Funded by the National Institutes of Health (NIH).

POTENTIAL CONFLICT OF INTEREST: The authors have indicated they have no potential conflicts of interest to disclose.

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THE SMELL OF SUMMER RAIN: *All my life I have enjoyed the smell of a gentle summer rain. I associate it with warm days, dry earth, and walks with my family. I had always assumed that the smell of rain was due to the rain water itself. After all, everyone says they can smell the rain. It turns out that the smell of rain is actually the smell of the earth. To my surprise, scientists have known since the 1960s that the scent we associate with rain is actually the smell of the soil and is called petrichor. What scientists have not known is how the soil smell gets into the air.*

As reported in The New York Times *(Science: January 26, 2015), scientists studying the absorption of water drops by various surfaces, including soil, noticed that under certain conditions, tiny bubbles were released after a water drop hit the ground. Using high speed video they learned that the size of the drop, velocity of the drop, and type of soil all had a great deal of impact on whether air bubbles were released. Rain drops of just the right size, falling at just the right speed, on the right type of dry soil trap tiny air bubbles beneath it. As the drop collapses, the bubbles, embedded with molecules from the soil, burst out. The molecules in the air bubbles give the familiar scent we associate with rain. While this is intriguing, I suspect however, that I will continue to say that I like the smell of rain. The "smell of soil" or the "petrichor scent" just does not have the same ring.*

Noted by WVR, MD