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Impact Of Pediatricians' Perceived Self-Efficacy and Confidence on Violence Prevention Counseling: A National Study

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Abstract

Objective—To measure impact of pediatricians' perceived self-efficacy and confidence on current practices and attitudes regarding four violence prevention (VP) topics (gun storage, gun removal, limiting exposure to media violence, discipline techniques) during health supervision for children ages 2–11.

Methods—Random sample survey of American Academy of Pediatrics Fellows ($n = 486$; 53% response rate) providing health supervision for children ages 2–11. Participants surveyed about VP issues regarding: (1) current counseling practices for 2–5 and 6–11 year olds; (2) amount of time spent addressing; (3) confidence in addressing; and (4) perceived self-efficacy at changing patients' behaviors. Multivariate analyses explored relationships between pediatricians' perceived self-efficacy and confidence versus VP counseling frequency.

Results—VP topics were not routinely discussed during health supervision. Most pediatricians (64%) reported spending too little time addressing these topics. Although most pediatricians felt confident discussing and effective at changing behaviors regarding limiting exposure to media violence (89% vs. 50%) and discipline techniques (91% vs. 76%), they were less so for safe gun storage (54% vs. 35%) and gun removal (51% vs. 17%). Perceived self-efficacy was the mediating factor on self-reported VP counseling frequencies for all topics.

Conclusions—Pediatricians reported spending insufficient time on VP counseling. Confidence and perceived self-efficacy levels varied by VP topic, but for all topics pediatricians felt more

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confident discussing than effective at changing behaviors. Since pediatricians' self-efficacy was related to counseling practices, boosting self-efficacy could ultimately improve counseling frequencies. Further research is needed to identify methods to build providers' perceived self-efficacy regarding these VP areas.

Keywords

Violence prevention; Health supervision; Firearm accessibility; Discipline techniques; Limiting violent media exposure

Introduction

Child and adolescent violence remains one of our most pressing public health problems today [1–3]. For example, in 2000 2.4 million arrests were made involving individuals under the age of 18, of which 98,900 were for violent offenses [4]. Also, youth suicide rates [5] and other unintentional injuries [6] have been associated with firearm accessibility within the home, and recent findings indicate that about 35% of American households have firearms present [7]. Exposure to violent media also remains an issue, as evidenced by the American Academy of Pediatrics (AAP) finding that American children between 2 and 18-years-old spend an average of more than 6 h using electronic daily media, which translates to an estimated viewing of 200,000 acts of violence [8]. Studies have shown that exposure to violent media can lead to long-term childhood problems, such as adult aggression [9]. Lastly, corporal punishment as a discipline technique was found in a meta-analysis of 88 studies to be associated with increased: (1) child and adult aggression; (2) child delinquent and anti-social behavior; and (3) risk of abusing own children [10]. These tendencies can lead to future violent behavior.

Even though major health organizations such as the American Medical Association (AMA), the AAP, and the Maternal and Child Health Bureau (MCHB) [1–3, 11, 12] have issued guidelines for incorporating violence prevention (VP) into routine primary care, health care providers grapple with their potential role in addressing VP. The AAP's Task Force on Violence Prevention has emphasized the unique position of clinicians to intervene prior to violence emerging and issued recommendations that all clinicians should address key VP-related domains during the office visit inclusive of: media use, discipline, and firearm accessibility [2]. Pediatricians should identify the risk factors for violence among their patients through screening, and, if risk factors are identified (e.g., access to firearms), appropriate treatment or referral should occur at that time. A recent report from the AAP's Committee on Injury, Violence, and Poison Prevention indicates that injury-prevention counseling (including firearm safety) should be integrated into every well-child visit. However, due to time constraints, discussing all topics at every visit is not necessary but should instead be based on appropriateness such as season, child's activities, and concerns and questions raised by the parent [13]. The majority of primary care providers agree that they should address these VP issues [14–19], but are unsure how to do so in a time efficient manner.

A number of studies have shown that low perceived self-efficacy and lack of self-confidence are deterrents to delivery of prevention services, such as dental screening, screening for risky health behaviors, domestic violence screening, and safety and family issues [20–23]. Bandura's social-psychological construct of perceived self-efficacy is defined as one's own competence to perform the behavior needed to influence outcomes [24–27], whereas confidence is the feeling or consciousness of one's powers or of reliance on one's circumstances. Individuals can feel confident in their ability to perform a specific task but not feel effective at changing others' behaviors related to this task. For example, Cheng et al. found that 93% of pediatricians had a high level of confidence in counseling during health supervision visits on harm of passive smoke but only 56% believed they were able to prevent the problem. In addition, results from this study showed that gun safety and television use were among the least frequently discussed topics during health supervision visits and were also associated with lower provider confidence in counseling [23]. Likewise, Maiuro et al. identified perceived self-efficacy as one of the attitudinal barriers in addressing domestic violence, which also emerged as the most important factor in determining domestic violence counseling [22].

The present study was designed to evaluate the impact of pediatricians' perceived self-efficacy and confidence on current practices and attitudes regarding provider counseling for children ages 2–11 on three VP topics. The topics chosen—firearm accessibility (gun storage, gun removal) [5, 6], limiting exposure to media violence [8, 9], and discipline techniques [10, 28, 29]—all have strong links to child violence and present clear opportunities for counseling in the pediatric setting. We postulated that perceived self-efficacy would be the mediating factor on reported VP counseling rates.

Methods

Population and survey

Data were obtained from pediatrician responses to the AAP Periodic Survey of Fellows #55. The Periodic Survey of Fellows is conducted four times each year to collect information from the AAP membership on current issues in pediatric practice. Each survey is mailed to a unique random sample of approximately 1,600 active, U.S. AAP members. Survey #55 contained 35 questions, six of which addressed current practices and attitudes regarding VP topics during health supervision (well-child) visits for children ages 2–11. Questions were developed by the AAP's Department of Research staff with assistance from the AAP's Committee on Injury, Violence, and Poison Prevention members, Pediatric Research in Office Settings (PROS) staff and two PROS investigators. Some of the questions were replicated or modified from a previous Periodic Survey (#38, 1998). The survey was pre-tested with a random sample of 100 AAP members. An initial mailing was sent to a random sample of 1,603 U.S. AAP Fellows. Pediatricians who did not respond to the first mailing received an identical survey approximately 3 weeks later, with a total of six mailings conducted. The survey was fielded between October 2002 and May 2003. The AAP's Institutional Review Board approved the survey protocol and participant consent was not required based on exempt status according to federal regulations.

Questionnaire

Questions addressed current counseling practices during health supervision visits with parents and their children 2–5 years and also 6–11 years, confidence in addressing VP-related topics during these visits, and perceived self-efficacy at changing patients' behaviors regarding four VP-related topics: (1) gun storage, (2) gun removal, (3) limiting exposure to media violence, and (4) discipline techniques. Confidence was defined as how strongly the pediatricians agreed or disagreed with their confidence in ability to address statements related to the VP-related topics during health supervision visits. Perceived self-efficacy was defined as how strongly the pediatricians agreed or disagreed that they were effective at changing patients' behaviors on VP-related topics. Regarding current counseling practices, pediatricians were asked, "During a health supervision (well-child) visit for a child [insert either 2–5 years old or 6–11 years old], how often do you discuss [insert individually the four topics]." Pediatricians' self-reported counseling frequencies were calculated for each topic by rating topics on a 4-point Likert scale ranging from discussed "never/rarely (0–24% of the time)" to "almost always /always (75–100% of the time)" while confidence and perceived self-efficacy were rated on a 5-point scale from "strongly agree" to "strongly disagree." The counseling frequency response categories were defined according to the total number of well-child visits conducted within the specified age group divided by the number of patients for which pediatricians discussed the topic.

Additional questions assessed other management practices, including the percentage of patients seen for well-child exams during a typical work week, amount of time spent currently addressing VP issues in their practices (1 = too much, 2 = about the right amount, 3 = too little), and whether there is sufficient time during well-child visits to address VP issues (ranging from "strongly agree" to "strongly disagree"). Questions were also asked regarding demographic features of the pediatrician (e.g., age, gender, race, ethnicity) and practice (e.g., area, setting).

Statistical analysis

Dependent variables—A total of eight dependent variables were assessed in terms of counseling frequencies regarding discussing each of the following four topics twice (once for 2–5 year olds and once for 6–11 year olds) during well-child visits: (1) gun storage; (2) gun removal; (3) limiting exposure to media violence; and (4) discipline techniques.

Analysis—Frequencies and percents were calculated. Descriptive statistics were used to summarize the sample, and a Chi-square test was conducted to compare gender of responders versus non-responders while an independent samples *T*-test compared age. Responses to the amount of time addressing VP issues were compared to the eight individual questions regarding counseling frequencies (dichotomized into categories of "occasionally" and "rarely/never" versus "often" and "almost always/always") and demographic characteristics (age, gender, area, setting) of respondents using the Chi-square test. Correlation coefficients were calculated between confidence and perceived self-efficacy for each topic.

Generalized estimating equation (GEE) is an extension of logistic regression and used to model correlated data from longitudinal/repeated measures studies and clustered/multilevel studies because measurements are expected to be correlated due to same subjects and measures (repeated measures) and same genetic, environmental, measurement effects (clustered measures). If this correlation is not taken into account, the standard errors of the parameter estimates will not be valid and hypotheses testing results will be non-replicable. GEE was performed to determine the association between perceived self-efficacy and confidence to each self-reported VP counseling frequencies as practitioners were responding twice to the same question but regarding the two age groups. Responses to each topic for both age groups were treated as a cluster of responses per topic rather than individual responses, which resulted in the eight dependent variables being combined to produce four dependent variables (one per topic). GEE was chosen because it takes into account the correlation between the two responses and provides unbiased estimates of model parameters. An alternative approach would be to separately analyze the two responses. However, this approach would have resulted in the reporting of twice as many tables (one table per age group by each topic) and not allowed for the comparison of the two related variables in one analysis.

The dependent variables for each model (each VP topic for: (1) 2–5 age group and (2) 6–11 age group) were dichotomized as indicated above, and the perceived self-efficacy and confidence variables for each model were dichotomized into the categories of “strongly disagree,” “disagree,” and “neutral” versus “agree” and “strongly agree.” Because high versus low perceived self-efficacy and confidence as well as high versus low counseling frequencies were being analyzed, the middle response group for these variables (“neutral” and “occasionally”) was included in the low groups. Therefore, high perceived self-efficacy and confidence are being presented in the models. In order to determine if pediatricians were discussing a specific topic more often with the younger or older age group, an age group variable (2–5 years vs. 6–11 years) distinguishing between the two groups was created and included in the models. Other variables included in each of the models were: pediatrician gender and age, practice area and setting, percentage of patients seen for well-child exams during a typical work week, and amount of time spent addressing VP issues. Three of the variables (pediatrician age, percentage well-child exams, time addressing VP issues) were treated as continuous variables. Analyses were performed using the SPSS 12.0 program (SPSS, Inc., Chicago, IL) and SAS 9.1 Proc Genmod (SAS Institute Inc., Cary, NC). Statistical significance was defined as $P < .05$.

Results

Characteristics of respondents

A total of 851 completed surveys were returned, for a response rate of 53%. Residents ($n = 106$) and respondents who indicated that they did not provide well child exams for children ages 2–11 ($n = 259$) were eliminated. The 486 pediatricians who had finished training and were currently providing health supervision were included in the analysis. Pediatrician and practice characteristics of the respondents are shown in Table 1. During a typical complete work week, respondents indicated on average that 36% of patient visits were well-child

exams (range = 1–90%). Pediatricians reported serving on average 31% Medicaid patients (SD 28.81) among all patients in their practice, with most serving at least some Medicaid patients. Also, using the AAP membership database, we found that the distribution of age was similar for respondents versus non-respondents ($t = .463$; $P = .643$), but there was a higher percentage of females among respondents (60% vs. 40%, $P = .001$).

Time spent addressing violence prevention issues

Table 2 shows the self-reported counseling frequency percentage according to response category (e.g., “always/almost always” to “rarely/never”) that respondents indicated discussing each VP topic during health supervision visits with parents and their 2–5 and 6–11 year olds. Overall, most pediatricians did not routinely discuss VP issues during health supervision. Pediatricians reported discussing discipline techniques most often during visits with 2–5 year olds (41%) and limiting exposure to media violence with 6–11 year olds (34%). Gun storage and removal were discussed the least regularly for both age groups.

Most pediatricians (64%) reported currently spending too little time addressing VP issues during health supervision visits, with younger pediatricians (<45 years) more likely to indicate this response than older pediatricians (69% vs. 56%, $P < .01$). Also, Chi-square analyses showed that for all four topics for both age groups pediatricians who reported discussing the topics either “occasionally” or “rarely/never” were more likely than those responding “often” or “almost always”/“always” to report that they “spent too little time” addressing VP issues (all $P < .01$ but discipline for both age groups (NS); χ^2 value range of 5.58 to 36.18 with $df = 1$). Most pediatricians (71%) also reported that there is insufficient time during well-child visits to address VP issues.

Confidence in addressing violence prevention issues versus perceived self-efficacy at changing patients’ behaviors

Pediatricians expressed higher confidence than perceived self-efficacy when counseling on all four VP topics. While most pediatricians felt confident in discussing and effective at changing discipline techniques (91% vs. 76%) and limiting exposure to media violence (89% vs. 50%), they felt less confident and less effective at changing behaviors in regards to safe gun storage (54% vs. 35%) and removal of guns from the home (51% vs. 17%). Bivariate correlations indicated that confidence and perceived self-efficacy were highly correlated for each topic (ranged from 0.31 to 0.79). Based on these results, the confidence and perceived self-efficacy variables were included in separate GEE models.

Determinants of counseling practices

Table 3 presents bivariate relationships between independent variables and counseling frequencies. Table 4 reports the GEE results according to VP topic with responses to both age groups (2–5 and 6–11) included. Correlations estimated from GEE between the two age groups for each topic ranged from 0.48 to 0.87. Discipline techniques was the topic least correlated between the age groups, while the topic of gun removal was the most correlated.

As the odds ratios for perceived self-efficacy indicate in Table 4, after controlling for other factors pediatricians with higher perceived self-efficacy were more likely than pediatricians

reporting lower perceived self-efficacy to discuss all of the VP topics (range from 2.6 to 5.5 times more). Also, females were more likely than their male counterparts to discuss all topics (gun storage: odds ratio [OR], .61; $P < .05$; media: OR, .54; $P < .01$; discipline: OR, .64; $P < .05$) but removal of guns from home (OR, .74; $P = .22$). As expected, pediatricians discussed discipline techniques significantly more during health supervision with younger children than older children (OR, .37; $P < .0001$) but discussed limiting exposure to media violence (OR, 2.02; $P < .0001$) and removal of guns from the home (OR, 1.20; $P < .01$) more with the older children.

Discussion

In spite of existing guidelines for incorporating VP into routine primary care, pediatricians do not routinely discuss these issues during health supervision visits. One explanation may be insufficient time during these visits to address VP issues, as reported by 71% of the respondents, due to the large number of anticipatory guidance topics expected to be covered during the short well-child visits. Barkin et al. have suggested that pediatricians should prioritize between 5 and 8 topics for discussion during health supervision visits to increase parental recall [30]. The field of anticipatory guidance is full of important topics but lacking evidence of effectiveness. Violence prevention is no different; however, when examining the potential public health impact of addressing VP-related topics, it appears that VP topics should be one or more of the suggested 5–8 topics.

Age appropriate topics do appear to be discussed but only at a low frequency (e.g., 2–5: discipline techniques-41%, limiting exposure to media violence-33%; 6–11: limiting exposure to media violence-34%). And, although about 35% of American households have firearms present [7], gun storage was discussed only about 25% of the time during health supervision visits with both age groups. Also, as in other studies [31] gender was found to be associated with counseling, specifically, females discussed most topics more frequently than males.

Overall, respondents felt more confident in their ability to address VP topics during health supervision visits than effective at changing their patients' behaviors regarding these topics. This discrepancy likely influences routine VP counseling, especially given limited time during a health supervision visit, and could result in pediatricians prioritizing other prevention/counseling issues that they feel more confident and comfortable discussing. Lack of specific training, which is linked to knowledge, is yet another potential reason as to why pediatricians may have low self-efficacy for discussing VP issues. Sege et al.'s report of pediatrician focus groups indicated that time constraints and lack of specific training were barriers to discussing VP topics [32]. In addition, due to the absence of evidence that VP counseling changes parent/patient behavior, providers may be discouraged from discussing VP topics. Conducting outcomes research in this field is, therefore, essential.

Since counseling practices were found to be related to self-efficacy, boosting pediatricians' perceived self-efficacy could ultimately improve counseling rates. A few studies have shown that training or tools can improve providers' perceived self-efficacy and increase rates of domestic violence management [33, 34], smoking cessation counseling [35], and violence

screening (e.g., weapon access/use, violence at school/neighborhood, fighting history) [36]. Comprehensive training programs that included components such as training sessions, clinic educational rounds, dissemination of clinical protocol and materials, and feedback of results have demonstrated that health care providers can increase their perceived self-efficacy in responding to domestic violence victims, which improved rates of identifying these victims [33, 34]. Also, Abraham's study suggests confidence and self-efficacy are pivotal in changing provider behavior to address VP topics that are recommended for discussion but often uncomfortable to address [36]. The use of a violence-screening education program was shown to improve violence-related topic inquiry and increase perceived comfort and importance in violence screening among pediatric residents and medical students. Future research should examine the effectiveness of VP counseling training on providers' self-efficacy rates to determine if results similar to those found for identification and management of domestic violence can be reached.

Potential study limitations should be addressed. The survey used for this study reflects physician attitudes and does not directly measure actual behavior in practice but rather self-reported counseling frequencies via broad response categories. However, research has indicated that attitudes may be among the most important predictors of behavior [37]. Also, since the response rate was only 53%, attitudes and perceptions of non-respondents may have differed from respondents. But, although some non-response bias was found with females being more likely to respond to the survey, this tendency is consistent with previous AAP surveys where the non-response bias was examined and found to be minimal [38]. Finally, results from this study are based on AAP membership, which constitutes a large subset but not all U.S. pediatricians and no family physicians. These latter factors may limit the ability to generalize our results to U.S. pediatricians who routinely provide health supervision for children ages 2–11.

Nevertheless, given that multiple health organizations have issued guidelines to routinely address VP, our findings indicate that identifying tools or training to build providers' perceived self-efficacy in regards to VP counseling is warranted in order to increase rates.

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Table 1

Demographics of respondents

	Respondents (N = 486)
Gender	
Male	40%
Female	60%
Age	
<45 years	58%
45 years	42%
Race	
White	74%
Asian	19%
Black	5%
Native Hawaiian/other Pacific Islander	1%
American Indian/Alaska Native/ Multi-racial	1%
Ethnicity	
Hispanic or Latino	7%
Not Hispanic or Latino	93%
Practice area	
Urban, inner city	15%
Urban, not inner city	21%
Suburban	48%
Rural	16%
Practice setting	
Self-employed solo or 2-physician practice	19%
Pediatric group practice	43%
Multispecialty group practice	17%
HMO or community health center	5%
Hospital, medical school, or parent university	13%
Other	3%

Table 2

Percentage of pediatricians currently discussing violence prevention topics during health supervision with patients ages 2–11

VP topic	VP counseling frequency response categories			
	Always/almost always	Often	Occasionally	Rarely/never
Gun storage				
2–5	112 (23%)	76 (16%)	129 (27%)	167 (35%)
6–11	115 (24%)	84 (17%)	124 (26%)	160 (33%)
Gun removal				
2–5	77 (16%)	53 (11%)	137 (28%)	215 (45%)
6–11	82 (17%)	64 (13%)	132 (27%)	203 (42%)
Limiting exposure to media violence				
2–5	132 (27%)	138 (29%)	142 (29%)	71 (15%)
6–11	164 (34%)	168 (35%)	97 (20%)	56 (12%)
Discipline techniques				
2–5	199 (41%)	219 (45%)	60 (12%)	8 (2%)
6–11	160 (33%)	188 (39%)	122 (25%)	15 (3%)

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Table 3

Unadjusted odds ratios between topic discussed and covariates

Covariate	VP counseling topics OR (<i>P</i> value)			
	Gun storage	Gun removal	Limiting exposure to media violence	Discipline techniques
Patient age group ^b	1.10 (.06)	1.15 (.004)	1.75 (<.001)	.41 (<.0001)
Practice area ^c	.63 (.17)	1.09 (.81)	.85 (.54)	.90 (.81)
Practice setting ^d	.92 (.77)	1.06 (.85)	.33 (.001)	.92 (.79)
Gender ^e	.77 (.17)	0.81 (.31)	.66 (.02)	.65 (.03)
Pediatrician Age ^f	1.00 (.62)	1.00 (0.93)	.99 (.53)	1.01 (.53)
Time addressing VP issues ^{**f}	.38 (<.0001)	0.33 (<.0001)	.49 (.0001)	.62 (.02)
Percentage well-child exams ^{*f}	1.02 (.68)	1.04 (.55)	1.02 (.79)	1.29 (.004)
Perceived self-efficacy ^a	8.26 (<.0001)	8.47 (<.0001)	4.30 (<.0001)	3.57 (<.001)
Confidence ^a	6.43 (<.0001)	5.91 (<.0001)	6.31 (<.0001)	3.62 (<.001)

^a Comparison group: strongly disagree/disagree/neutral^b Comparison group: age 2–5^c Comparison group: rural^d Comparison group: others^e Comparison group: female^f Continuous variable

** Odds ratio between two consecutive categories (too much time versus about right, and about right versus too little time)

* Odds ratio is the odds between a level of proportion of child care visit to a level that has 10 percent more well child care visit

Table 4

GEE analysis of perceived self-efficacy and confidence for the four VP counseling topics

Covariate	VP counseling topics OR (95% CI)			
	Gun storage	Gun removal	Limiting exposure to media violence	Discipline techniques
“High” perceived self-efficacy	6.54 (4.21–10.17)	5.66 (3.22–9.96)	4.90 (3.22–7.46)	3.58 (2.25–5.69)
“High” confidence	5.50 (3.49–8.68)	4.99 (2.09–8.10)	5.68 (3.06–10.56)	3.62 (2.01–6.53)

ORs adjusted for patient age group, practice area, practice setting, pediatrician gender, time addressing VP issues, percentage well-child exams, pediatrician age

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