This study makes a substantial contribution by describing spanking epidemiology over 25 consecutive cohorts of age-homogenous parents. The data reflect parents’ use of spanking rather than whether a specific child was spanked. The primary limitation of these data was the single-item measure of spanking with limited response options. Although a downward trend was observed, there is a clear need for ongoing education about alternative discipline strategies.

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Pediatric Patient and Caregiver Values in Treatment Decision-making for Uncomplicated Appendicitis

Nonoperative management (NOM) with antibiotics alone has been shown to be safe for uncomplicated appendicitis in pediatric patients.1-3 Shared decision-making to choose between 2 treatments may be facilitated by a better understanding of how patients and caregivers value the specific risks and benefits of each treatment and how those are associated with their treatment decisions.4 A recent survey of parents of children who were healthy showed that 42% of caregivers preferred NOM for their child’s appendicitis; however, these families were making only a hypothetical treatment decision, and factors affecting their preferences were not solicited.5 Our objective in this study was to compare values regarding the risks and benefits of each treatment option between patient-caregiver dyads who chose surgery vs NOM for the child’s appendicitis.

Methods | As part of a randomized clinical trial (NCT02110485), patients were evaluated by a research team physician who introduced both treatment options, answered initial questions, and then randomized patient-caregiver dyads to receive a scripted standardized surgical consultation with or without a tablet-based patient activation tool (https://vimeo.com/91207174). This study was approved by the Nationwide Children’s Hospital institutional review board and written consent was obtained from all participants, with assent obtained from children 9 years and older. Patients aged 7 to 17 years and their caregivers were enrolled from March 2014 to April 2016. All dyads who used the patient activation tool received the same information about each treatment’s expected course and associated risks and benefits and subsequently completed a values exercise rating the importance of 8 treatment-associated risks and benefits of surgery vs NOM using a 5-point Likert scale.6 Three questions assessed aversion to risks of surgical management, 3 assessed aversion to risks of NOM, and 2 assessed preferences associated with missing school or activities and work. After exercise completion, they chose surgery or NOM for the child’s appendicitis treatment.

Value scores were compared by treatment decision using Cochran-Armitage tests, with a significance threshold set at P < .05. Data analysis for this report was performed from July 2019 to March 2020, and SAS Enterprise Guide 7.1 (SAS Institute) was used for all statistical analyses.

Results | Of 96 individual participants, 66 (69%) chose surgery and 30 (31%) chose NOM. The median age of included children was 12 (interquartile range, 10-14) years, with 58 male participants of 96 total participants (60%). There were no significant differences between participants choosing surgery vs NOM in levels of education, income, employment, or marital status; however, patient-caregiver dyads choosing surgery were more likely to have been transferred from another institution (29 of 66 [43.9%] vs 7 of 30 [23.3%]; P = .03) and speak primarily English at home (59 of 61 [91.8%] vs 23 of 30 [76.7%]; P = .04). Mean scores for each treatment-associated risk or benefit according to treatment choice are shown in the Figure. In the group choosing surgery, the highest 3 priorities were avoid-
ing recurrence of appendicitis, risks of bleeding and infection, and adverse effects from antibiotics (mean [SE] scores, 4.8 [0.07], 4.2 [0.11], and 3.5 [0.16], respectively). In the NOM group, the 2 highest priorities were the same as the surgery group, with the third being avoiding an operation for appendicitis (mean [SE] scores, 4.7 [0.15], 4.7 [0.10], and 4.1 [0.16], respectively). The overall lowest 3 priorities were missing less school and returning to activities and not having to take antibiotics at home (among children) and taking less time off work to care for a child (among caregivers) (mean [SE] scores, 3.1 [0.15], 2.6 [0.14], and 2.1 [0.13], respectively).

Patient-caregiver dyads differed in their answers to the following questions assessing aversion to surgical risks, on a scale from 1 (least valued) to 5 (most valued): avoiding risks of bleeding and infection (surgery: 1 [least valued], 1 participant [2%]; 2, 1 participant [2%]; 3, 12 participants [18%]; 4, 21 participants [32%]; 5 [most valued], 31 participants [47%] vs NOM: 1 [least valued], 0 participants; 2, 0 participants; 3, 1 participant [3%]; 4, 6 participants [21%]; 5 [most valued], 23 participants [76%]; P = .007), avoiding the risks of general anesthesia (surgery: 10 [15%]; 15 [23%]; 22 [33%]; 14 [21%]; 13 [20%] vs NOM: 0; 4 [13%]; 7 [23%]; 10 [33%]; 9 [30%]; P < .001), and potentially not needing an appendectomy (surgery: 9 [14%]; 9 [14%]; 21 [32%]; 14 [21%]; 13 [20%]; vs NOM: 1 [3%]; 0; 3 [10%]; 16 [53%]; 10 [33%]; P < .001). In each case, the responses favored NOM. In assessing aversion to risks of NOM, the groups differed in their answer to the question on not having to take antibiotics at home, favoring surgery (surgery: 18 [27%]; 9 [14%]; 14 [21%]; 11 [17%] vs NOM: 1 [3%]; 0; 3 [10%]; 16 [53%]; 10 [33%]; P = .003). Compared with the surgical group, participants who chose NOM had a nonsignificant difference in valuing missing less school (surgery: 14 [21%]; 14 [21%]; 12 [18%]; 18 [27%]; 8 [12%] vs NOM: 5 [17%]; 4 [13%]; 3 [10%]; 7 [23%]; 11 [37%]; P = .055).

Discussion | The relative importance of treatment-associated risks and benefits differed between patients and caregivers choosing surgery vs NOM. However, the 2 most highly prioritized treatment-associated risks and benefits were the same in both groups. This suggests that the associated risks and benefits of each treatment were interpreted and valued differently by individual patients and caregivers. These results support the need for shared decision-making with patients and their caregivers when deciding on treatment for uncomplicated appendicitis.

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Saliency-Driven Visual Search Performance in Toddlers With Low- vs High-Touch Screen Use

During toddlerhood, a peak period of neurocognitive development, increased exposure to sensory stimulation through touch screen use, may influence developing attentional control. While TV’s rapidly changing, noncontingent flow of sensory information has been hypothesized to lead to difficulties voluntarily focusing attention, video gaming’s contingent and cognitively demanding sensory environments may improve visual processing and attention. Toddler touch screen use involves both exogenous attention, driven by salient audio-visual features, and endogenous/voluntary control, eg, video selection and app use.

The current study compared high- and low-touch screen users on a gaze-contingent visual search paradigm, assessing exogenous, saliency-based attention (single-feature trials), and endogenous attention control (conjunction trials).

Methods | Individuals aged 12 months were recruited from October 2015 to March 2016 (as part of the TABLET project) and followed up longitudinally at 18 months and 3.5 years. Parents gave informed written consent, and the Birkbeck, University of London institutional review board approved this study. Before each visit, parents were asked, “On a typical day, how long does your child spend using a touchscreen device (tablet, smartphone or touchscreen laptop)?” Participants were recruited as high users and low users based on median use of 10 minutes per day reported in a previous survey sample. At 18 months and 3.5 years, user groups were reassigned using the within-sample median (15 minutes per day). At recruitment, groups were matched on developmental level (Mullen Scales of Early Learning), age, sex, background TV (parent-reported minutes per day), and mother’s education.

The visual search task was administered at 18 months and 3.5 years (Tobii TX300 eye tracker with 120-Hz tracking, 60-cm distance, 5-point calibration). Arrays were presented (single feature [target red apple among blue apples; set sizes 5 and 9] or conjunction [target red apple among blue apples and slices of red apples; set sizes 5, 9, and 13] only set sizes matched across conditions were analyzed, ie, 5 and 9) for 4 seconds or until the target was fixated. Trials were presented continuously, grouped into blocks: (1) 3 single feature, fixed order; (2) 1 single feature, 9 conjunction, randomized; and (3) 4 single feature, 9 conjunction, randomized. P values were 2-sided and were significant at less than .05. SPSS version 24.0.0.1 (SPSS Inc) was used. Analysis began November 2018 and ended in November 2019.

Results | Of 56 infants recruited, 49 were followed up longitudinally at 18 months and 46 were followed up at 3.5 years. Data quality and accuracy did not differ significantly across groups. Linear generalized estimating equations for saccadic reaction time (SRT) (Figure) were run with an unstructured correlation matrix (deviation from preregistered 3.5-year analysis of variance; https://osf.io/fxu7y) to include missing data and treat group as a time-varying predictor (some children changed user groups over time; usage correlations: 12 to 18 months, Spearman $r_s = 0.78$; 18 months to 3.5 years, Spearman $r_s = 0.33$; 12 months to 3.5 years, Spearman $r_s = 0.31$).

User groups did not differ significantly in conjunction SRTs, but high users were faster than low users in single-feature trials (Table). Post hoc analyses showed faster SRTs for high users vs low users in block 1 single-feature trials (Bonferroni-corrected $P = .003$; mean difference $= 360$ milliseconds; SE $= 104$ milliseconds) with no group difference in remaining single trials (Bonferroni-corrected $P = .75$, mean difference $= 118$ milliseconds, SE $= 77$ milliseconds).

Follow-up multiple regressions tested the specificity of concurrent vs longitudinal associations. At 18 months, duration of concurrent use was associated with single-feature SRT ($\beta = -0.62$; $P = .03$), over and above 12-month usage ($\beta = 0.48$; $P = .09$). At 3.5 years, concurrent use was margin-

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