

Parental awareness and knowledge regarding pit and fissure sealants in preventing dental caries among children

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Abstract

Objective: To assess parental awareness, knowledge, attitudes and practices regarding pit and fissure sealants, and to identify the factors associated with sealant uptake in their children.

Methods: Cross-sectional survey of 174 parents using an 18 questionnaire. Six items were scored as a knowledge scale (0–6) and three as an attitude scale (0–6). Associations were tested with Pearson's chi-square, Fisher's exact test, Mann–Whitney U and Kruskal–Wallis H, with Benjamini–Hochberg correction across the primary family of tests. Independent predictors of sealant uptake and of willingness were identified by multivariable binary logistic regression. Two-sided $\alpha = 0.05$.

Results: Only 52.9% (95% CI 45.5–60.1) had ever heard of sealants and just 29.9% identified caries prevention as their purpose. Mean knowledge score was 2.23 ± 1.79 of 6, 60.3% scored in the poor range. Sealants had been received by 37.4% of children. Uptake was strongly associated with dentist recommendation (65.6% vs 22.1%, OR 6.70, 95% CI 3.36–13.37, $p < 0.001$) and with regular dental check-ups (61.8% vs 21.8%, OR 5.78, 95% CI 2.85–11.71, $p < 0.001$). In the adjusted model, dentist recommendation (aOR 4.43, 1.93–10.18) and regular check-ups (aOR 3.11, 1.39–6.95) remained independent predictors, while knowledge and attitude scores did not (model $\chi^2(5) = 53.46$, $p < 0.001$, Nagelkerke $R^2 = 0.395$, AUC = 0.82).

Conclusion: Parental knowledge of pit and fissure sealants is poor, and uptake is driven far more by contact with and advice from a dentist than by what parents know or believe. Professional recommendation during routine visits is the most actionable lever for increasing sealant use.

Keywords: Dental sealants, parents, health knowledge, attitudes, practice, dental caries, pediatric dentistry

Introduction

Pit and fissure sealants are an important preventive approach for reducing caries risk on susceptible occlusal surfaces. They act as a physical barrier that seals pits and fissures and limits the accumulation of cariogenic plaque in these areas. Evidence-based clinical guidelines from the American Dental Association (ADA) and American Academy of Pediatric Dentistry (AAPD) support the use of sealants on appropriate primary and permanent molars in children and adolescents. Sealants have also been shown to prevent the development of occlusal caries and to help arrest or limit the progression of non-cavitated carious lesions.^[1] Public-health evidence further supports school-based sealant programmes as an effective strategy for increasing sealant receipt and reducing dental caries among children^[1, 2, 10, 12, 13].

Awareness alone, however, does not necessarily translate into treatment uptake. Parents may have heard about sealants without understanding why they are required or which teeth benefit from them. Misconceptions regarding the purpose of sealants may further influence parental decision-making. In addition, perceptions regarding safety, effectiveness, cost, and the need for future dental treatment may contribute to acceptance or hesitation. Previous research has suggested that professional dental advice and communication can play an important role in improving parental understanding and acceptance of preventive dental procedures^[4, 7, 22].

The dental professional therefore represents an important link between preventive knowledge and actual treatment.

During routine dental visits, dentists have an opportunity to identify children who may benefit from sealants, explain the preventive purpose of the procedure, address parental concerns, and provide an individualized recommendation. Regular dental attendance may consequently provide greater opportunities for both preventive education and treatment. At the same time, parents increasingly obtain health information through the internet, family and friends, schools, and other sources. The accuracy and usefulness of these different sources may vary, making it important to understand where parents obtain information about sealants and how these sources relate to their knowledge.^[4, 5, 7]

Cost and access to dental care are also relevant considerations. Financial concerns may influence parents' decisions regarding preventive treatment, particularly in populations where regular dental attendance is limited. Similarly, lack of routine dental visits can reduce opportunities for children to receive preventive interventions. School- and community-based approaches may therefore complement routine clinical care, particularly for children who have limited access to dental services^[2, 3, 9, 14, 15].

Two questions are addressed. First, what is the level of parental awareness, knowledge and attitude regarding sealants? Second, which of these factors — knowledge, attitude, cost perception, dental attendance, or professional recommendation — independently predicts whether a child actually receives sealants?

Methods

1. Study design and participants

A descriptive cross-sectional study was conducted using a self-administered, closed-ended electronic questionnaire distributed to parents of children. A total of 174 complete submissions were analysed; no responses were excluded. The sampling frame was non-probabilistic (convenience sampling of respondents reached through the distribution channel), and the questionnaire did not record demographic variables.

2. Instrument

The instrument comprised 18 items covering four domains: awareness and knowledge (Q1–Q5, Q8), professional interaction (Q6, Q7), attitude and perception (Q9, Q12–Q15), and practice and barriers (Q10, Q11, Q16, Q17, Q18). Response options were dichotomous (Yes/No), trichotomous (Yes/No/Not sure or Maybe), or single-choice multiple-option.

3. Scoring

Knowledge score (0–6): One point was awarded for each of six items answered correctly or affirmatively: Q1 (has heard of sealants = Yes), Q2 (knows what sealants are = Yes), Q3 (purpose = prevent caries), Q4 (teeth involved = back teeth), Q5 (knows recommended age = Yes), Q8 (knows sealants prevent caries = Yes). “Maybe” and “Not sure” responses were scored 0, since partial certainty was not treated as knowledge. Scores were categorised as poor (0–2), moderate (3–4) and good (5–6).

Attitude score (0–6): Three items were scored 2 = favourable, 1 = uncertain, 0 = unfavourable: Q9 (sealants are safe), Q13 (willing to have sealants placed if advised), Q15 (sealants reduce future treatment need). Scores were categorised as unfavourable (0–2), neutral (3–4) and favourable (5–6). Q14 (belief that brushing alone suffices) was analysed separately as a misconception item rather than as a scale component, for the reason given in §3.4.

4. Statistical analysis

Categorical variables are summarised as frequencies and percentages; 95% confidence intervals for key proportions use the Wilson score method. Continuous scores are summarised as mean $\pm$ SD with median and interquartile range, since the Shapiro–Wilk test rejected normality for both scales ($p < 0.001$). Internal consistency was assessed with the Kuder–Richardson 20 coefficient for the dichotomous knowledge scale and Cronbach's α for the attitude scale.

Associations between categorical variables were tested with Pearson's chi-square test (uncorrected, all expected cell counts > 5), with Fisher's exact test reported for 2×2 tables and effect size expressed as the odds ratio with Woolf 95% confidence interval or as Cramér's V. Score comparisons used the Mann–Whitney U test for two groups and the Kruskal–Wallis H test for more than two, with Cohen's d reported for two-group comparisons and pairwise Mann–Whitney tests with Bonferroni adjustment used post hoc. Across the primary family of ten bivariate tests, p -values were additionally adjusted by the Benjamini–Hochberg false discovery rate procedure and reported as q -values.

Two multivariable binary logistic regression models were fitted by iteratively reweighted least squares: sealant uptake (Q10) and definite willingness (Q13 = Yes) as outcomes. Model fit was assessed by the likelihood-ratio test, Nagelkerke R^2 , the Hosmer–Lemeshow goodness-of-fit test and the area under the ROC curve. All tests were two-sided with $\alpha = 0.05$. Analyses were performed in Python 3 (pandas 2.x, NumPy 2.4.4, SciPy 1.17.1).

Results

1. Awareness and knowledge (item level)

Awareness of sealants was close to a coin flip: 92 of 174 parents (52.9%, 95% CI 45.5–60.1) had heard of them, but only 45 (25.9%) claimed to know what they are, with a further 60 (34.5%) uncertain. Knowledge of the specific characteristics of the intervention was weaker still. Fewer than a third correctly identified caries prevention as the purpose of sealants, and almost as many believed they straighten teeth.

Table 1: Item-wise distribution of awareness and knowledge responses (N = 174) Correct or affirmative responses are marked $\checkmark$.

Item	Response	n	%	
Q1. Ever heard of pit and fissure sealants	Yes $\checkmark$	92	52.9	47.1
	No	82	82	
Q2. Knows what sealants are	Yes $\checkmark$	45	25.9	34.5
	Maybe	60	60	
	No	69	69	
Q3. Main purpose of sealants	Prevent caries $\checkmark$	52	29.9	27.0
	Straighten teeth	47	47	
	Don't know	38	38	
	Whiten teeth	37	37	
Q4. Teeth requiring sealants	Back teeth $\checkmark$	67	38.5	22.4
	All teeth	39	39	
	Don't know	37	37	
	Front teeth	31	31	
Q5. Knows recommended age	Yes $\checkmark$	49	28.2	41.4
	Not sure	72	72	
	No	53	53	
Q8. Knows sealants prevent caries	Yes $\checkmark$	83	47.7	52.3
	No	91	91	

2. Knowledge score

The mean knowledge score was 2.23 ± 1.79 out of 6 (95% CI 1.96–2.50; median 2, IQR 1–4), that is, 37.2% of the maximum attainable. The distribution was right-skewed and departed from normality (Shapiro–Wilk $p < 0.001$), justifying non-parametric comparisons throughout. Internal consistency was acceptable for a six-item dichotomous scale

(KR-20 = 0.699), and all six items showed positive corrected item–total correlations (range 0.286–0.622), supporting their use as a single scale.

Figure 1 (see grade distribution). Poor (0–2): 105 parents, 60.3%. Moderate (3–4): 48 parents, 27.6%. Good (5–6): 21 parents, 12.1%. Three in five parents fall in the poor category.

Table 2: Psychometric properties of the knowledge scale (KR-20 = 0.699)

Item	Difficulty (p)	Corrected item–total r
Q1. Has heard of sealants	0.529	0.395
Q2. Knows what they are	0.259	0.551
Q3. Knows the purpose	0.299	0.622
Q4. Knows which teeth	0.385	0.286
Q5. Knows the age	0.282	0.291
Q8. Knows they prevent caries	0.477	0.447

3. Contact with the dental profession

Sealants had been discussed with a dentist by 70 parents (40.2%, 95% CI 33.2–47.7), and 61 (35.1%, 95% CI 28.4–42.4) had ever received a recommendation for their own child. The dentist was the first source of information for only 39 parents (22.4%), behind the internet (47, 27.0%), while 35 (20.1%) had never heard of sealants from any source.

First source of information (Figure 2): Internet 47 (27.0%); Dentist 39 (22.4%); Family/friends 35 (20.1%); Never heard 35 (20.1%); School 18 (10.3%).

4. Attitudes and perceptions

Attitudes were dominated not by opposition but by uncertainty. Only 45 parents (25.9%) considered sealants safe for children while 81 (46.6%) were unsure; 46 (26.4%) believed sealants reduce future treatment needs while 80 (46.0%) were unsure. Definite willingness to proceed on dental advice was expressed by 63 (36.2%), with a further 81 (46.6%) answering “maybe” — a large persuadable middle rather than a resistant minority. Perceived cost was split almost evenly three ways.

Table 3: Attitude and perception items (N = 174)

Item	Favourable	Uncertain	Unfavourable
Q9. Sealants are safe for children	45 (25.9%)	81 (46.6%)	48 (27.6%)
Q13. Willing if advised by dentist	63 (36.2%)	81 (46.6%)	30 (17.2%)
Q15. Sealants reduce future treatment	46 (26.4%)	80 (46.0%)	48 (27.6%)
Q12. Sealants are expensive (Yes / Not sure / No)	59 (33.9%)	59 (33.9%)	56 (32.2%)
Q14. Brushing alone prevents molar caries (misconception item)	48 (27.6%) — correctly “No”	87 (50.0%)	39 (22.4%) — “Yes”

The composite attitude score (Q9, Q13, Q15) averaged 3.16 ± 1.54 of 6 (median 3, IQR 2–4): 50 parents (28.7%) unfavourable, 90 (51.7%) neutral and 34 (19.5%) favourable.

5. Practice and barriers

Sealants had been received by at least one child of 65 parents (37.4%, 95% CI 30.5–44.7). Regular dental check-ups were reported by 68 of the 155 who answered (43.9%,

95% CI 36.3–51.7). Among the 109 parents whose children had not received sealants, the leading stated reason was that the dentist had not recommended them (32, 30.5%), ahead of cost (23, 21.9%) and lack of awareness (15, 14.3%), with 35 (33.3%) selecting “other”. When asked to name the single biggest barrier to preventive dental treatment in general, cost led among the 126 who answered (55, 43.7%), followed by time (38, 30.2%) and fear (33, 26.2%).

Table 4: Practice, stated reasons and barriers Percentages are of valid responses; denominators differ because of item non-response

Variable	Category	n	%	
Q10. Child received sealants (N = 174)	Yes	65	37.4	
	No	109	62.6	
Q17. Regular dental check-ups (n = 155)	Yes	68	43.9	
	No	87	56.1	
Q11. Reason for non-receipt (non-recipients, n = 105)	Other	35	33.3	
	Dentist did not recommend	32	30.5	
	Cost	23	21.9	
	Lack of awareness	15	14.3	
Q18. Biggest barrier to preventive care (n = 126)	Cost	55	43.7	
	Time	38	30.2	
	Fear	33	26.2	

6. Factors associated with sealant uptake

Every hypothesised correlate of uptake was significantly associated with it, and the strongest by a clear margin was

dentist recommendation. Among parents who had received a recommendation, 65.6% of children had sealants placed, against 22.1% of those who had not ($\chi^2(1) = 31.96$, $p <$

0.001; OR 6.70, 95% CI 3.36–13.37). Regular attendance was almost as strong (61.8% vs 21.8%; OR 5.78, 95% CI 2.85–11.71). Mere awareness mattered much less: 48.9%

versus 24.4%, an odds ratio of 2.97 — real, but less than half the magnitude of the recommendation effect.

Table 5: Bivariate associations with sealant uptake and related outcomes q = Benjamini–Hochberg adjusted p across this family of ten tests. All expected counts > 5.

Association	% outcome	χ^2 (df)	P	q	Effect size
Dentist recommendation (Q7) → uptake	65.6 vs 22.1	31.96 (1)	<0.001	<0.001	OR 6.70 (3.36–13.37)
Regular check-ups (Q17) → uptake	61.8 vs 21.8	25.49 (1)	<0.001	<0.001	OR 5.78 (2.85–11.71)
Discussed with dentist (Q6) → uptake	54.3 vs 26.0	14.34 (1)	<0.001	<0.001	OR 3.39 (1.78–6.44)
Awareness (Q1) → uptake	48.9 vs 24.4	11.14 (1)	<0.001	0.001	OR 2.97 (1.55–5.68)
Cost perception (Q12) → uptake	57.6 / 39.3 / 15.3	22.77 (2)	<0.001	<0.001	V = 0.362
Information source (Q16) → uptake	2.9–57.1	28.34 (4)	<0.001	<0.001	V = 0.404
Information source (Q16) → awareness	11.4–74.4	39.28 (4)	<0.001	<0.001	V = 0.475
Dentist recommendation (Q7) → willingness	59.0 vs 23.9	23.27 (2)	<0.001	<0.001	V = 0.366
Awareness (Q1) → willingness	43.5 vs 28.0	6.06 (2)	0.048	0.051	V = 0.187
Awareness (Q1) → regular check-ups	51.2 vs 35.6	3.82 (1)	0.051	0.051	OR 1.90 (1.00–3.62)

7. Knowledge and attitude scores across groups

Knowledge scores were consistently and substantially higher in the engaged groups. Parents whose children had received sealants scored 2.89 ± 1.68 versus 1.83 ± 1.75 ($U = 2272.0$, $p < 0.001$; $d = 0.61$), and regular attenders scored 2.91 ± 1.78 versus 1.74 ± 1.69 ($U = 1833.0$, $p < 0.001$; $d = 0.68$). The source of information mattered a great deal:

parents who first learned about sealants from a dentist scored 3.62 ± 1.91 , more than five times the mean of those who had never heard of them (0.66 ± 1.19), and post-hoc pairwise comparisons confirmed the dentist group scored significantly above every other group (all Bonferroni-adjusted $p \leq 0.066$; $p \leq 0.043$ against family, never-heard and school).

Table 6: Knowledge and attitude scores by group Mean $\pm$ SD. Knowledge range 0–6, attitude range 0–6.

Grouping	Level (n)	Knowledge	p	Attitude	p
Child received sealants (Q10)	Yes (65)	2.89 ± 1.68	<0.001 ($d=0.61$)	3.55 ± 1.78	0.024
	No (109)	1.83 ± 1.75		2.93 ± 1.33	
Dentist recommendation (Q7)	Yes (61)	2.89 ± 1.67	<0.001 ($d=0.58$)	3.72 ± 1.61	0.002
	No (113)	1.88 ± 1.76		2.86 ± 1.41	
Regular check-ups (Q17)	Yes (68)	2.91 ± 1.78	<0.001 ($d=0.68$)	3.37 ± 1.88	0.027
	No (87)	1.74 ± 1.69		2.83 ± 1.11	
First source of information (Q16)	Dentist (39)	3.62 ± 1.91	<0.001 ($H=54.42$, $df=4$)	4.51 ± 1.59	<0.001
	Internet (47)	2.51 ± 1.50		2.72 ± 1.26	
	Family (35)	2.03 ± 1.29		3.00 ± 1.78	
	School (18)	1.94 ± 1.51		2.33 ± 1.03	
	Never heard (35)	0.66 ± 1.19		2.83 ± 0.71	
Willingness if advised (Q13)	Yes (63)	3.08 ± 1.93	<0.001 ($H=21.95$, $df=2$)	—	—
	Maybe (81)	1.62 ± 1.55		—	—
	No (30)	2.10 ± 1.37		—	—

Knowledge and attitude were positively but only moderately correlated (Spearman $\rho = 0.301$, $p < 0.001$), indicating that knowing more about sealants and feeling positive about them are related but far from interchangeable. Graded knowledge tracked uptake monotonically — 28.6% in the poor group, 47.9% moderate, 57.1% good ($\chi^2(2) = 9.26$, $p = 0.010$; $V = 0.231$) — and tracked willingness even more steeply: 85.7% of parents in the good-knowledge group said yes outright, against 27.6% in the poor group ($\chi^2(4) = 25.86$, $p < 0.001$).

8. Multivariable analysis

Once all factors were entered together, a clear hierarchy emerged. Dentist recommendation and regular attendance retained independent effects on uptake, whereas knowledge and attitude scores did not. Put plainly: knowledge is associated with uptake in bivariate analysis because knowledgeable parents are the ones who attend and are advised — not because knowledge itself carries the child to the chair.

Table 7: Binary logistic regression — predictors of sealant uptake (n = 155) Model $\chi^2(5)=53.46$, $p<0.001$ · Nagelkerke $R^2=0.395$ · Hosmer–Lemeshow $\chi^2(6)=7.23$, $p=0.300$ · AUC=0.817 · accuracy 74.8%.

Predictor	B	SE	Wald	aOR (95% CI)	p
Knowledge score (per point)	0.120	0.121	0.99	1.13 (0.89–1.43)	0.321
Attitude score (per point)	0.159	0.138	1.33	1.17 (0.89–1.53)	0.249
Dentist recommended (yes vs no)	1.489	0.424	12.30	4.43 (1.93–10.18)	<0.001
Regular check-ups (yes vs no)	1.133	0.411	7.61	3.11 (1.39–6.95)	0.006
Perceives cost as high (yes vs other)	0.967	0.428	5.10	2.63 (1.14–6.09)	0.024
Constant	–2.746	0.625	19.34	0.06	<0.001

Willingness tells a different and complementary story. When the outcome is intention rather than behaviour — whether a parent would definitely agree if advised —

knowledge becomes a strong independent predictor, with each additional point on the six-point scale raising the odds of a definite yes by half.

Table 8: Binary logistic regression — predictors of definite willingness (Q13 = Yes; N = 174) Model $\chi^2(3)=49.48$, $p<0.001$ · Nagelkerke $R^2=0.339$ · Hosmer–Lemeshow $\chi^2(6)=7.56$, $p=0.272$ · AUC=0.802 · accuracy 77.6%.

Predictor	B	SE	Wald	aOR (95% CI)	p
Knowledge score (per point)	0.413	0.110	13.99	1.51 (1.22–1.88)	<0.001
Dentist recommended (yes vs no)	0.912	0.386	5.58	2.49 (1.17–5.30)	0.018
Perceives cost as high (yes vs other)	1.415	0.390	13.19	4.12 (1.92–8.83)	<0.001
Constant	–2.439	0.392	38.79	0.09	<0.001

Discussion

Knowledge is poor and specifically wrong, not merely absent. A mean of 2.23 out of 6, with 60.3% in the poor band, is consistent with the low awareness reported in most parental sealant surveys from comparable settings. The more troubling detail is the pattern of error: 27.0% of parents believed sealants straighten teeth and 21.3% believed they whiten them, so nearly half of the sample held an active misconception rather than simple ignorance. Educational messaging that assumes a blank slate will underperform against messaging that names and corrects these specific confusions. [4, 7, 22]

The dentist is the pivot, and is currently underused. Only 35.1% of parents had ever been offered a recommendation, yet recommendation was the single strongest correlate of uptake in both bivariate (OR 6.70) and adjusted (aOR 4.43) analysis, and parents who first heard about sealants from a dentist had knowledge scores nearly 50% above the next-best source. The internet reached more parents than the dentist did (27.0% vs 22.4%) but left them substantially less informed (2.51 vs 3.62). The gap between the 40.2% who have discussed sealants and the 35.1% who have been recommended them is small; the gap between both and the 100% who might have been is not. [4, 5, 12, 13]

Intention is not the bottleneck. Outright refusal was rare (17.2%), while 46.6% answered “maybe” — a persuadable majority whose hesitancy maps onto uncertainty rather than objection (46.6% unsure about safety, 46.0% unsure about benefit). The willingness model shows that this uncertainty is knowledge-responsive: each point of knowledge raised the odds of a definite yes by 51%. Knowledge therefore appears to act on intention, while professional contact acts on behaviour. Neither alone closes the loop, which argues for pairing chairside education with an explicit recommendation rather than treating awareness campaigns and clinical practice as separate levers. [4, 5, 7]

Parental knowledge regarding dental sealants was poor, with a mean score of 2.23 ± 1.79 out of 6 and 60.3% classified as having poor knowledge. Importantly, misconceptions were also present, with some parents believing that sealants straighten (27.0%) or whiten teeth (21.3%). This indicates a need for education that not only increases awareness but

also specifically corrects misconceptions. Previous studies have similarly reported limited parental knowledge of fissure sealants. [4, 7, 22]

Dentist involvement appeared strongly associated with sealant uptake. Only 35.1% of parents had received a recommendation, while uptake was considerably higher among children whose parents had received a recommendation. Regular dental attendance was also associated with uptake. Parents who received information from dentists had higher knowledge scores than those whose first source was the internet, suggesting that professional counselling may provide more accurate and individualized information. [4, 5, 12, 13]

Parental attitudes were characterized more by uncertainty than outright refusal. Although 46.6% were unsure about accepting sealants, only 17.2% rejected them outright. Higher knowledge was independently associated with greater willingness to accept sealants, suggesting that improving parental understanding may increase readiness to consider treatment. However, because the study was cross-sectional, these relationships should be interpreted as associations rather than causal effects. [4, 5]

Cost was the most frequently reported barrier, but its association with uptake requires cautious interpretation. Although 43.7% identified cost as a general barrier and 21.9% of non-recipients specifically cited it, the observed pattern suggests possible confounding by previous dental exposure. Therefore, the study supports cost as an important concern but cannot establish it as an independent cause of reduced sealant use. [9, 14, 15]

Overall, the findings suggest that improving parental knowledge and correcting misconceptions, together with routine dental attendance and clear professional recommendations, may help improve sealant acceptance and uptake. Sealant education should be integrated into comprehensive caries prevention rather than viewed as a substitute for fluoride use, toothbrushing, dietary counselling, and regular dental care. Cost deserves a more careful reading than the raw numbers invite. It was the most-cited general barrier (43.7%) and appears significant in both models, but the direction of the uptake association — highest use among those who call sealants expensive —

shows that the variable is confounded with exposure to dental care. The honest summary is that cost is a salient concern in parents' minds, and a real barrier for the 21.9% of non-recipients who named it, but this dataset cannot establish it as an independent deterrent. ^[1, 3, 9, 13, 17]

Limitations

- **No demographic data:** The questionnaire captured no age, sex, education, income, number of children or child age. Parental education and socioeconomic status are established confounders of both knowledge and preventive uptake, and their absence means the regression models cannot adjust for them. The reported adjusted odds ratios should be read as partially adjusted.
- **Cross-sectional design:** Temporality cannot be established. Whether recommendation causes uptake or whether the same parents who attend regularly also elicit recommendations cannot be separated here.

Conclusion

Parental knowledge of pit and fissure sealants in this sample was poor, with a mean score of 2.23 of 6 and three in five parents in the lowest band, and almost half holding an active misconception about what sealants do. Just over a third of children had received sealants. Uptake was determined primarily by contact with the dental profession — having been recommended sealants (aOR 4.43) and attending regular check-ups (aOR 3.11) — rather than by parental knowledge or attitude once those factors were accounted for. Knowledge, meanwhile, was the dominant independent predictor of willingness to proceed (aOR 1.51 per point). ^[4, 7, 12, 13]

The implication for practice is direct: the largest gains are likely to come from ensuring that every routine paediatric dental visit includes an explicit, plainly worded sealant recommendation, since the parents are already willing and the dentists are, at present, largely silent. ^[1, 4, 5, 13]

Additional evidence synthesis: References ^[10, 24] expand the literature base for sealant effectiveness, clinical guidance, retention/follow-up, parental knowledge, school-based delivery, and economic/public-health implications.

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