

Comparison of a barcode-based smartphone application to a questionnaire to assess the use of cleaning products at home and its association with asthma symptoms

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Supplementary Materials

Table S1: Cleaning products ingredients categorization; terms searched

Bleach	Hypochlorite de sodium Hypochlorous acid Sodium hypochlorite	Clorox Antiformin Javel
Ammonia	Ammoniaque Ammoniac Ammonia Hydrogen nitride Trihydrogen nitride Sulfate d'ammonium	Ammonium sulfate Nitrogen trihydride Hydroxyde d'ammonium Chlorure d'ammonium Ammonium chloride
Scented products	Parfum Parfums Perfume Perfumes 1-benzopyrane-2-one 2h-chromenone Cumarine Géraniol Geraniol (2e)-3,7-diméthyl-2,6-diène-1-oltrans- 3,7-diméthyl-2,6-octadién-1-ol Isoeugenol Salicylate de benzyle 2-hydroxybenzoate de benzyle O-hydroxybenzoate de benzyle Citral Pinus palustris oil Limonene D-limonene Pinene A-pinene	Lemonal 3,7-diméthyl-2,6-octadiénal Geranial Géranial Neral Néral Nerol Nerodol Neraniol Nérol Nérodol Cis-3,7-diméthyl-2,6-octadién-8-ol (z)3,7-diméthyl-2,6-octadién-1-ol Essential oil Huile essentielle Citronellol 3,7-diméthyl-2,6-octadién-1-ol Linalol Coumarine Coumarines

Table S2: Cleaning products name scanned; text terms searched

Bleach	« javel » NOT « sans »	« bleach » NOT « without »
Ammonia	«ammonia»	«ammonia»
Scented products	«parfum» «senteur» «odeur»	«perfume» «fragrance» «odor»

Table S3: Included and excluded population characteristics at baseline in the SEPAGES study

	Included	Excluded	p(chisq)
Questionnaire data	101	324	
Age (years)^a, mean ± s.d	32.5 ± 3.6	32.5 ± 4.0	0.88
Smoking status^b, n (%)	101	324	
Current smoker	11 (10.9)	25 (7.7)	0.32
Qualification level^a, n (%)	88	295	0.52
Worker to supervisor or equivalent	41 (46.6)	149 (50.5)	
Manager or equivalent	47 (53.4)	146 (49.5)	
Household Help, n(%)	100	320	0.37
Participant alone	15 (15.0)	65 (20.3)	
Participant and help	76 (76.0)	220 (68.8)	
Help alone	9 (9.0)	35 (10.9)	
Asthma Symptoms Score, n (%)	96	316	
≥1	18 (18.8)	60 (19.0)	0.96
Weekly spray use, n (%)	91	305	
Yes	34 (37.4)	119 (39.0)	0.78
Nb of weekly spray use, among users, n (%)			
1	22 (24.2)	78 (25.6)	0.96
≥2	12 (13.2)	41 (13.4)	
Weekly irritants use	98	302	
Yes	45 (45.9)	142 (47.0)	0.85
Nb of weekly irritants use, among users	45	50	
1	39 (39.8)	110 (36.4)	0.41
≥2	6 (6.1)	32 (10.6)	
Weekly bleach use, n (%)	100	319	
Yes	10 (10.0)	37 (11.6)	0.66
Weekly scented products use, n (%)	98	307	
Yes	42 (42.9)	152 (49.5)	0.25
Nb of weekly scented products use, among users n (%)			
1	33 (33.7)	99 (32.2)	0.15
≥2	9 (9.2)	53 (17.3)	

^a before pregnancy^b between conception and pregnancy detection : non repeated data

Table S4: Comparison of the two HDCP assessment methods at each of the three different data collection time

	Smartphone data Weekly product use, n					
Questionnaire data Weekly spray use, n	T1 ^a		T3 ^a		M2 ^a	
	No	Yes	No	Yes	No	Yes
No	15	7	29	13	34	15
Yes	3	13	12	17	6	14
Concordance (%) / Discordance (%)	74/26		65/35		75/25	
Kappa coefficient [95%CI]	0.47 [0.20-0.75]		0.27 [0.05-0.50]		0.35 [0.13-0.56]	
Phi coefficient	0.49		0.28		0.36	
p ^b	<0.01		0.03		<0.01	
Weekly bleach use, n						
No	30	6	58	7	58	8
Yes	3	3	7	3	2	3
Concordance (%) / Discordance (%)	79/21		81/19		75/25	
Kappa coefficient [95%CI]	0.26 [-0.11-0.63]		0.19 [-0.11-0.49]		0.29 [-0.02-0.6]	
Phi coefficient	0.28		0.19		0.34	
p ^b	0.10		0.12		0.02	
Weekly scented products use, n						
No	1	18	9	30	9	39
Yes	1	20	2	31	1	20
Concordance (%) / Discordance (%)	53/47		56/44		42/58	
Kappa coefficient [95%CI]	0.0 [-0.15-0.16]		0.16 [0.01-0.31]		0.10 [-0.01-0.2]	
Phi coefficient	0.01		0.24		0.18	
p ^b	0.51		0.05		0.26	
^a data collection times: first trimester of pregnancy(T1), third trimester of pregnancy(T3), second month after delivery(M2), ^b p for two-sided Fischer's exact test						

Figure S1: Collection times for used exposure and respiratory data in the SEPAGES study

