134P



Effectiveness of Non-Pharmacologic Strategies for Parental Smoking Cessation to Protect Children: A Meta-Analytic Review

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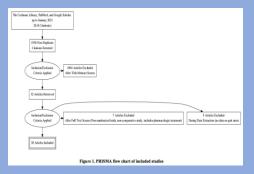


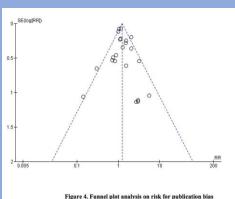
Aims: This meta-analysis aims to synthesize available evidence from published studies on the effectiveness of parental non-pharmacologic smoking cessation programs which aim to reduce children's exposure to secondhand smoke.

Methodology: A database search using The Cochrane Library, PubMed®, Medline, Embase, and Google Scholar, was done by the investigators. This study included 20 randomized controlled trials published up to 2020. Pooled estimates of risk ratio (RR) for quit rates were computed using the random effects model.

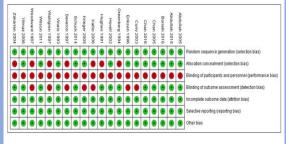
Results: Overall, the quit rate among those who underwent parental smoking cessation was 13.4% while the quit rate for controls was 11.9%. The pooled RR demonstrated that the parental smoking cessation program was significantly associated with higher quit rates (RR=1.22, 95%Cl=1.01 to 1.46, p-value=0.04). The studies demonstrated moderate heterogeneity only (I2=54%). Among studies published prior to year 2000, no significant difference was observed between parental smoking cessation program and control (RR=1.02, 95%Cl=0.62 to 1.70, p-value=0.93). On the other hand, the pooled RR demonstrated that among studies published after 2020, parental smoking cessation program was significantly associated with higher quit rates (RR=1.27, 95%Cl=1.03 to 1.56, p-value <0.0001). Among studies with self-help interventions, parental smoking cessation program has no additional benefit on quit rates (RR=1.20, 95%Cl=0.94 to 1.58, p-value=0.14). Among studies with biofeedback intervention also, no significant difference was observed (RR=1.27, 95%Cl=0.86 to 1.89, p-value=0.23).

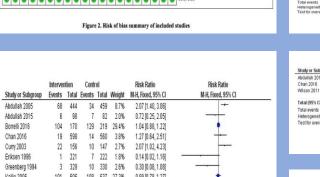
Conclusions: This meta-analysis demonstrated sufficient evidence that non-pharmacologic interventions for parental smoking cessation are effective











ias Yilmaz 2006 Zakarian 2004

Severon 1997

Vineis 1993 Wahlgren 1997



Figure 5. Meta-analysis of effect on quit rates of studies with self-help interventions

	Interve		Cont			Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI
Abdullah 2005	68	444	34	459	6.8%	2.07 [1.40, 3.06]	-
Abdullah 2015	6	98	7	82	1.5%	0.72 [0.25, 2.05]	
Borrelli 2016	184	170	129	219	22.9%	1.04 [0.88, 1.22]	•
Chan 2005	3	40	1	40	0.2%	3.00 [0.33, 27.63]	
Chan 2016	19	598	14	560	2.9%	1.27 [0.64, 2.51]	
Curry 2003	22	156	10	147	2.1%	2.07 (1.02, 4.23)	
Eriksen 1996	1	221	7	222	1.4%	0.14 [0.02, 1.16]	
Greenberg 1994	3	329	10	330	2.0%	0.30 [0.08, 1.08]	
Hovell 2002	8	97	9	96	1.8%	0.88 (0.35, 2.18)	
Hughes 1991	6	47	4	48	0.8%	1.53 [0.46, 5.08]	
Kallio 2006	101	505	108	537	21.2%	0.99 [0.78, 1.27]	+
Krieger 2005	92	110	75	104	15.6%	1.16 [1.00, 1.34]	F
Schuck 2014	5	30	6	30	1.2%	0.83 [0.28, 2.44]	
Severon 1997	47	862	31	644	7.2%	1.13 [0.73, 1.76]	+
Vineis 1993	30	247	36	328	6.3%	1.11 [0.70, 1.75]	+
Wahlgren 1997	6	28	1	26	0.2%	5.57 [0.72, 43.22]	-
Wilson 2011	27	169	18	170	3.6%	1.51 (0.86, 2.63)	+
Woodward 1987	3	50	- 1	45	0.2%	2.70 [0.29, 25.04]	· · · · · · · · · · · · · · · · · · ·
Yilmaz 2006	27	111	. 1	121	0.2%	29.43 [4.07, 213.01]	
Zakarian 2004	6	60	9	68	1.7%	0.76 [0.29, 2.00]	
Total (95% CI)		4372		4276	100.0%	1.21 [1.09, 1.33]	
Total events	584		511				
Heterogeneity: Chi ^a :	41.13, df	= 19 (P	= 0.002)	1 = 54	%		0.005 0.1 1 10
Test for overall effect	Z = 3.76	P = 0.0	002)				Favours control Favours interventi
							r around condition in depote a minery entities

Figure 3. Meta-analysis of effect on quit rates

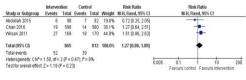


Figure 6. Meta-analysis of effect on quit rates of studies with biofeedback

