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A Family Smoking Cessation Intervention for Parents of Children 0-18 Months: A Randomized Controlled Trial

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Aim: This is a single-blinded, multi-site randomized controlled trial aiming to evaluate the effectiveness of a proactive multi-step theory-based family smoking cessation intervention delivered by smoking cessation nurses to non-smoking mothers and smoking fathers, to protect their infants from exposure to household second-hand smoke and to help the fathers quit smoking.

Methods: A total of 24,315 families were screened at 22 Maternal Child Health Centres in 2008-2010. 1,158 families with smoking father, non-smoking mother and an infant under 18-month were randomized into intervention and control groups. The intervention group received face-to-face and telephone counselling (mothers) on executing a complete household-no smoking policy and supporting their husbands to quit smoking; 3 telephone smoking cessation counselling sessions (fathers); an additional face-to-face family intervention session with NRT (if necessary); and a smoke-free kit with health education materials. The control group received a pamphlet about smoke-free home (mothers) and a self-help smoking cessation pamphlet (fathers). All families were followed up at 6- and 12-month to assess the fathers' smoking status, implementation of household smoking policy (mothers), role of mothers' general self-efficacy to assist fathers quit smoking, change in marital relationship (both spouses), and the utilization of health services (infants).

Results: The intervention group had a higher quit rate for fathers (13.7% vs. 8.0%, $P < .01$) and a higher reduction in infants' hospitalization ($n = 19$ vs. $n = 5$; $P < .01$) at 12-month follow-up. No significant difference was found on mothers' execution of household no-smoking policy. Both the intervention and control group had improved marital relationship at 12-month follow-up. Fathers in the intervention group perceived an improved positive to negative family interactions. No significant change was found on mothers' self-efficacy over time. Qualitative interviews of families of the intervention group indicated the importance of positive spousal support in helping the father to change his smoking behaviour, and the family intervention had no negative impact on marital quality. The incremental cost-effectiveness per quality-adjusted life year saved for fathers ranged from HK\$3525 (aged below 30) to HK\$10,428 (aged 40-44) by age group; and from HK\$926 (action stage at baseline) to HK\$10,716 (pre-contemplation stage at baseline).

Discussion and Conclusions: This proactive multi-step theory-based family intervention is effective in helping the fathers quit smoking; enhancing the mothers' support to their husbands; and improving household smoking hygiene and reducing the infants' hospitalization rate. It is also cost-effective in saving the quality-adjusted life years of fathers. This multi-step family intervention should be adopted as standard practice to engage new parents with smoking fathers to quit smoking so as to protect the baby from exposure to SHS at home.

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