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Parental and retail supply of tobacco to minors: Findings from a community-based social supply intervention study

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ABSTRACT

Aim: We report on findings from a quasi-experimental community trial of a complex intervention aimed at reducing social and commercial supply of cigarettes to young people.
Materials and methods: The intervention comprised a package of school, community and home-based smokefree strategies implemented over three years from 2007 to 2009 in a low-income area of Auckland, New Zealand, with another area serving as the control population. The main outcome measures were relative change in parental and retailer behaviour and in attitudes to the provision of tobacco to youth. We analysed baseline and follow-up data from questionnaires administered to parents and children living in the intervention and control areas using PASW Statistics 18.
Results: No difference was found between groups in parents' permissiveness of smoking and in retailer compliance to the tobacco sale legislation over the course of the study, either because our intervention had no or only a limited effect, or alternatively because limitations in the study design diluted any effect.
Conclusions: Nevertheless, a key finding was that parents and retailers persisted as important sources of cigarettes for young people. Further study is required to identify effective interventions to address this issue.

1. Introduction

The majority of tobacco smokers start smoking well before the age of 18 [1,2]. Evidence suggests that the younger the age of smoking initiation the more likely the person is to become dependent on tobacco [3] and therefore become a lifelong smoker.

Reducing access to tobacco by young people has been proposed by the World Health Organization (WHO) as one of the key ways to prevent uptake of smoking by this group [2,4]. Young people who are below the age at which they can legally purchase tobacco (hereafter referred to as 'minors') commonly obtain tobacco from social sources, among which peers are the most popular [5–9], followed by adults, including parents [5,8,9]. However, studies from a range of countries indicate that a substantial proportion, over 60% of minors obtain cigarettes from commercial sources [7,10–14]. The importance of commercial sources is greater for established smokers [7,10–13], those in

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older age groups [7,9,11,14,15], and males [7–9,11,14,15]. Both commercial suppliers and parents have been shown to be important precursors for subsequent provision of cigarettes by peers [5,6,16]. It has also been found that where strong restrictions on access to commercial sources are in place, reliance on social sources, especially parents, has increased [5].

Interventions to restrict access by minors overwhelmingly focus on commercial supply [17–26]. Active enforcement programmes are the most popular choice of intervention, and typically involve penalizing retailers who fail to comply with the tobacco sale legislation with fines or suspension of their license to sell tobacco. Studies have suggested that active enforcement may decrease such illegal tobacco sales to minors [17,20–24,26,27]. However, many of these studies have serious design limitations. For example, only three of the eight published studies had control groups [20,22,24], making it difficult to attribute any observed change to the intervention alone.

Some studies [19,23,24,28] found that following a commercial supply intervention, minors reported obtaining tobacco by asking others to buy it or steal it for them, or in some cases their perception of ease of access from social sources remained unchanged. In other words, efforts to restrict minors' access to cigarettes by reducing commercial supply are undermined by the availability of cigarettes from social sources [5,29]. In New Zealand, it is illegal to supply tobacco to those younger than 18 years old, whether by commercial or social supply. Nevertheless, it still occurs. In this paper, we report on a New Zealand intervention study, called Keeping Kids Smokefree (KKS), which sought among other tobacco control efforts to reduce both commercial and social supply of tobacco to minors.

2. Material and methods

2.1. The keeping kids smokefree study

The KKS study was a quasi-experimental trial of a community-, school-, and family-based intervention aimed at modifying smoking behaviours and attitudes of parents in order to reduce uptake of smoking among the groups with the highest smoking prevalence among New Zealand youth [30], Māori and Pacific Island children from lower socioeconomic communities [31]. Bronfenbrenner's ecological model and a holistic Māori model of health, Te Whare Tapa Wha, which underpinned the design of the intervention are explained more fully in a previous paper [31].The study involved low income communities around four 'intermediate' schools (serving School Years 7 and 8 children 11–13 years old). The schools had high numbers and proportions of Māori and Pacific Island students. The schools were categorised as 'low decile', reflecting the average socioeconomic deprivation of the communities they serve. Decile 1 indicates the most deprived 10% of the population [30]. We sought to match the two intervention and two control schools on decile, school size and ethnic composition. However, we were unable to match the schools exactly on decile because we wanted the intervention schools to be in a contiguous area so as to minimise contamination. The rationale, context, methodology and methods involved in establishing the KKS study have been reported in detail elsewhere [31].

Table 1
Baseline and follow-up surveys of students and parents for all four schools by (starting) class and (4 term) year.

	2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4
Year 7	sp-	-	-	-	-	-	-	▶ sp				
Year 8	sp			p								
Year 7					sp	-	-	-	-	-	-	▶ sp
Year 7									sp	-	-	▶ sp

Note: Only parents with 2 years follow-up were used in this analysis (i.e. 2007–2008 and 2008–2009).

2.2. Participants

At the start of the study, all students and their parents were invited to take part. At the end of the first year of the study (2007) and the second year (2008), only parents of students finishing Year 8 were surveyed (Table 1). At the beginning of the second and third year (2009) of the study, the new cohort of Year 7 students and their parents were surveyed and at the end of the third and final year, all students and their parents were surveyed. This analysis was restricted to parents of children who were in the study for two continuous years and data from students collected at the beginning of the study and the end of the study. We used parental data from 2007 to 2009 but because of a programming error in our PDA's there was significant loss of students' data on access to cigarettes in 2008, meaning we had to omit students' data for that year.

2.3. Reducing parental and retail supply strategy

The strategy to reduce parental and retail supply of tobacco to minors consisted of five components (Controlled Purchase Operations (CPOs), Information Campaigns, KKS Wallet Card, KKS DVD and Social Artwork). In the first year only CPO's were implemented, in the second year CPO's, Information Campaigns, the Wallet Card and DVD and all five in the third year.

2.3.1. Controlled purchase operations

The KKS study partnered with the regional provider of health protection services, Auckland Regional Public Health Service (ARPHS), to conduct a programme of CPOs within the intervention area. CPOs involve a supervised minor (aged 14 to 16) attempting to purchase cigarettes from retailers. Dressed casually (vs. not in school uniform) as instructed by ARPHS staff, the volunteer minors were driven to stores identified as sellers of tobacco and given $20 to buy a packet of Holiday cigarettes (one of New Zealand's lower priced, widely sold cigarette brands). They were instructed to tell the truth about their age if asked and to say that the cigarettes were for their personal use. If the shop assistant requested identification, the minor was to say they were not carrying any. If a sale was made, a file on the retailer was prepared and sent to the Ministry of Health who made a decision on whether to prosecute.