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Barriers to correct child restraint use: A qualitative study of child restraint users and their needs

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ABSTRACT

Motor vehicle crashes are a major cause of death and injury to children worldwide. Although risk of injury to child passengers can be reduced by using a child restraint, most restraints are incorrectly used. This greatly reduces the restraints' protective potential; however there is limited research on drivers of correct child restraint use. The aim of this study was to explore perceived barriers and motivators of correct child restraint use in experienced child restraint users, to inform interventions to promote correct use. Motivations and risk perceptions concerning incorrect child restraint use among high and low socioeconomic populations and culturally and linguistically diverse (CALD) child restraint users in Sydney, Australia were qualitatively examined. Six focus groups (N = 44 participants) were facilitated using a semi-structured discussion guide. Transcriptions were deductively analysed using QSR NVivo11 software and the COM-B model of behaviour. Common perceived barriers to correct restraint use were: (a) difficulty interpreting instructions and labels, particularly among CALD participants; (b) remembering and attending to correct use information; (c) lack of information and behavioural feedback on how to correctly install and use a child restraint; and (d) low confidence in ability to install and use a child restraint correctly. The results indicate current child restraint product information is poorly understood, particularly among those whose first language is not English. Interventions to increase correct child restraint use should address access to correct use information, capability to understand and use these, and the influence of motivation, memory and attention in the process.

1. Introduction

Despite legislation mandating child restraint use for child passengers in most high income countries (WHO, 2015), and increasing adoption of legislation globally in response to the World Health Organisation road safety campaign in 2004 (Nazif-Muñoz, 2015), traffic injuries remain a leading cause of death for children, and child passengers account for up to half of these deaths (Peden et al., 2008). Using age-appropriate restraints reduces the risk of death and injury (Elliott, et al., 2006). However for optimal crash protection restraints must be used correctly (Brown et al., 2006), as misuse significantly increases the risk of injury during a crash (Bilston et al., 2007). Correct use of child restraints requires restraints to be installed and the child secured as intended by the manufacturer. Legislation requiring use of age-appropriate child restraints does not necessarily prevent errors in the way restraints are used (Brown et al., 2013b). Recent estimates at discharge from a maternity hospital in the United States saw up to 95% of child restraints being used incorrectly (Hoffman et al., 2016). Incorrect use of child restraints is also widespread in Australia (Koppel et al., 2013).

It is common to see variation in rates of misuse with socioeconomic status (Bilston et al., 2011), with higher rates of errors in culturally and linguistically diverse (CALD) populations (Bilston et al., 2011). Educational interventions for child passenger safety should be developed in accordance with the needs and motivations of parents/carers, regardless of cultural and linguistic background (Ishikawa et al., 2014; Weaver et al., 2013). For this reason, involving users in the design and implementation of interventions is critical. This 'consumer-centered'

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Fig. 1. COM-B Model of Behaviour with Theoretical Domains Framework (TDF) Domains (Diagram constructed based on detail provided in Michie et al., 2011).

approach is well documented in other areas of health, e.g. involving users in the design process for developing patient information materials that are more 'relevant, readable, and understandable to patients' (Pg 2, Nilsen et al., 2006)

Information supplied with child restraints at the point of sale is a potential intervention delivery method that can reach all child restraint users. To maximize the potential use of this information as an intervention to counter errors in use, there is therefore a need to provide mechanisms for incorporating consumer input into its design. Furthermore, as this type of intervention targets behaviour change, there is a need to capture this input within a behaviour theory framework.

Michie et al. (2011) have developed the COM-B model (see Fig. 1) as a framework that allows behaviour change targets to be defined in terms of behavioural theory. The COM-B model outlines how a person's behaviour (B) is a result of their capability (C), opportunity (O), and motivation (M) to perform the behaviour (Michie et al., 2011). While this type of model has never been previously used to explore the needs and motivations of parents/carers in developing educational interventions focused on child restraint use, this model intrinsically provides a useful framework for interpreting consumer input from a behavioural theory perspective.

We have some preliminary insights into capabilities, opportunities, and motivations experienced by child restraint users from the literature (Brown et al., 2013a; Simpson et al., 2002). However, there is insufficient research on these factors cross-culturally and across demographics. Previous research has assessed the impact of macro level factors such as legislation on the use of child restraints (Brubacher et al., 2016; Nazif-Muñoz et al., 2017) and speculated on the macro level barriers to using a child restraint system e.g. the influence of appropriate use legislation and public policy (Brown et al., 2013b). However, there is a need to identify the micro-level barriers and enablers of child restraint use, i.e. at the level of the individual to guide future research on promoting correct use and preventing misuse. We aim to use the COM-B model of behaviour to interpret consumer needs for information supplied with child restraints. This will ultimately provide insights to guide development of interventions targeting reductions in errors in use of child restraints. Specifically we aim to explore how child restraint use might function as part of an individual's capability, opportunity, and motivation and how this varies across high education and income (high SES), low education and income (low SES), and culturally and linguistically diverse (CALD) users.

2. Method

The COM-B model of behaviour was used to deductively analyze discussions from six focus groups conducted in Sydney, Australia. The focus group method was chosen for the study because group interaction was deemed valuable in providing new insights from shared experiences (Ivanoff and Hultberg, 2006) and it has been used previously in research on child restraints with culturally and linguistically diverse participants (Brown et al., 2013a).

We sampled three groups of child restraint system (CRS) users with the following criteria:

- (a) Participants in high income and high education brackets (high SES)
- (b) Participants in lower income and lower education brackets (low SES) and
- (c) Participants from a culturally and linguistically diverse background (CALD)
- 2.1. Sample

High SES participants were recruited through university and research organisation email distribution channels. Community playgroups specifically for English as Second Language residents in Southeastern Sydney, and community playgroups in areas of socioeconomic disadvantage (low SES) as indicated by the Australian Government Socioeconomic Index for Areas (Australian Bureau of Statistics, 2013) were used to recruit CALD and low SES participants. This recruitment strategy also maintained homogeneity within groups, which has been noted previously as important for participant comfort and free discussion (Brown et al., 2013a).

Based on our previous experience using a similar deductive approach with a behaviour theory framework (Brown et al., 2013a) we sought to recruit participants for two focus groups within each

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