



Modified ride-on cars and mastery motivation in young children with disabilities: Effects of environmental modifications



Hsiang-han Huang^{a,b,*}, Hsuan-Wen Huang^c, Yi-Mei Chen^d, Yu-Hsin Hsieh^a,
Ming-Ke Shih^a, Chia-Ling Chen^{e,f}

^a Department of Occupational Therapy and Graduate Institute of Behavioral Sciences, Chang Gung University, Taoyuan, Taiwan

^b Joint Appointment with Department of Physical Medicine and Rehabilitation, Chang Gung Memorial Hospital, Linkou, Taiwan

^c Department of Rehabilitation, Saint Mary's Hospital Luodong, Yilan, Taiwan

^d Department of Physical Medicine and Rehabilitation, Chang Gung Memorial Hospital, Taoyuan, Taiwan

^e Department of Physical Medicine and Rehabilitation, Chang Gung Memorial Hospital, Linkou, Taiwan

^f Graduate Institute of Early Intervention, College of Medicine, Chang Gung University, Taoyuan, Taiwan

ARTICLE INFO

Number of reviews completed is 2

Keywords:

Modified ride-on cars
Young children with disabilities
Motivation
Home affordances
Environmental modifications

ABSTRACT

Background: Independent mobility is important for children's psychological development. Modified ride-on cars are innovative, alternative options to enhance independent mobility, socialization, and motivation in young children with disabilities.

Aim: We compared the effects of combining ride-on car use and a social interaction training program on mastery motivation and home affordances with a home education program in young children with disabilities.

Methods and procedures: Twenty-nine children with disabilities aged 1–3 years were recruited. The treatment group (n = 15) received two 2-h sessions/week for 9 weeks of ride-on car training in a hospital environment in Taiwan. The control group (n = 14) underwent similar home education programs. No treatment except regular therapy was administered during the 9-week follow-up period. Assessments included the Revised Dimensions of Mastery Questionnaire–Chinese version and the Affordance in the Home Environment for Motor Development–Toddler version–Chinese version.

Outcomes and results: The treatment group (compared to controls) had significantly greater improvements in object persistence during the intervention. Both groups showed significant improvements in mastery pleasure and home affordances during the intervention.

Conclusions and implications: This novel study showed the potential use of modified ride-on cars to enhance mastery motivation in a hospital environment.

What this paper adds?

Modified ride-on toy cars as physical environmental modifications have become innovative, alternative options for enhancing independent mobility and socialization in young children with disabilities. Studies further suggested that the combination of physical and social environmental modifications may benefit mastery motivation for children to learn and develop skills. This prospective, pretest–posttest control group study provided evidence for combining ride-on car use with an adult-directed, social training program,

* Corresponding author at: Department of Occupational Therapy and Graduate Institute of Behavioral Sciences, Chang Gung University, 259 Wen-Hwa 1st Rd, Kwei-Shan, Tao-Yuan, Taiwan.

E-mail address: hsianghan@mail.cgu.edu.tw (H.-h. Huang).

<https://doi.org/10.1016/j.ridd.2018.08.001>

Received 23 October 2017; Received in revised form 24 February 2018; Accepted 2 August 2018

0891-4222/© 2018 Published by Elsevier Ltd.

which act as respective physical and social environmental modifications for improving mastery motivation in young children with disabilities. The combination of ride-on car use and a structured, social training program facilitates the development of object persistence compared to the home education program after the 9-week intervention. Additionally, young children with motor disabilities in both the ride-on car training and home education programs have increased mastery pleasure during the intervention phase. The findings support the positive impacts of environmental modifications by combining social interaction programs with ride-on car use on mastery motivation for young children with disabilities.

1. Introduction

Young children are initiators and active participants in their world (Butler, 2009; Gibson, 1988; Perry, 1998). They perceive relevant information on affordances produced by their own movements and can discover how the information can be used to guide their subsequent movements. Affordances refer to the fit between a person's capability and environmental properties (Gibson & Pick, 2000). They are action opportunities that allow the child to perceive, learn, and develop skills. For example, once infants can actively stretch out arms and control their legs to explore a surface, they can discover what things feel like and whether surfaces can support their weight (Adolph, 1997). Independent locomotion allows children to learn the action possibilities that relate to their capabilities and surface layout (e.g., furniture), which enhances development. A positive correlation among home affordances, motor, and cognitive development is evidenced in young children with typical development during their first 18 months (Miquelote, Santos, Cacola, Montebelo, & Gabbard, 2012; Saccani, Valentini, Pereira, Muller, & Gabbard, 2013). The perceived affordances and the intention to master one's environment are highly associated with children's independent mobility and mastery motivation.

1.1. Mastery motivation and young children without disabilities

Mastery motivation is a psychological force that drives a child to initiate and persist in problem-solving or to master a skill or task with moderately challenging levels and pleasure (Morgan, Harmon, & Maslin-Cole, 1990). Object (instrumental) and social (expressive) subtypes of mastery motivation can be measured by the motivated behaviors of persistence and mastery pleasure (Morgan, MacTurk, & Hrnčir, 1995). Young children's mastery motivation to move and explore their environments is the foundation of learning during development according to the developmental perspective (Gibson & Pick, 2000; Morgan et al., 1995).

Previous studies showed that toddlers with disabilities, including developmental disabilities, cerebral palsy, and motor delay, may have less mastery motivation and persistence on task performance compared with their typically developing peers (Jennings, Connors, Stegman, Sankaranarayan, & Mendelsohn, 1985; Jennings, Connors, & Stegman, 1988). Diverse experiences associated with physical impairments, social play, maternal didactic interaction, and caregivers' perceptions of children's motivation are possible factors influencing young children's mastery motivation (Hauser-Cram, 1996; Medeiros, Cress, & Lambert, 2016; Wang, Morgan, Hwang, & Liao, 2013; Wang, Morgan, Hwang, Chen, & Liao, 2014). To increase mastery motivation in young children with motor disabilities, physical and social environment modifications by enhancing mobility function and including social play with the caregivers in training programs can be applied (Kenyon, Farris, Aldrich, & Rhodes, 2017; Waldman-Levi & Erez, 2015).

1.2. Early power mobility training and mastery motivation

The use of power mobility devices (PMDs) in early power mobility training is an effective method to increase young children's independent mobility and enhance their motor, social, and cognitive development (Livingstone & Field, 2014). Modified ride-on toy cars as a type of PMDs and physical environmental modification are one such option. They are affordable, easily customizable, attractive, and smaller compared to power wheel chairs (Huang & Galloway, 2012; Logan et al., 2017). They could be used in various settings with appropriate space and environment, such as homes, institutions, and hospitals (Huang & Chen, 2017; Huang, Ragonesi, Stoner, Peffley, & Galloway, 2014; Logan, Feldner, Galloway, & Huang, 2016). Other studies found that the fancy appearance of ride-on cars is attractive to children and can cause them to approach, thus having an advantage of being a "social toy" between children with disabilities and their peers, which may enhance their social participation (Huang, Chen, & Huang, 2017; Logan, Huang, Stahlin, & Galloway, 2014). These studies have also indicated that integrating the concept of family-centered service into the ride-on car training program may enhance children's motivation and caregivers' perceptions of their children's capabilities (Huang et al., 2018; Huang, Chen et al., 2017). Furthermore, the increased motivation may be beneficial for children to initiate movements at home and have more action possibilities.

However, no standardized measurements of mastery motivation and home affordances were applied in previous ride-on car studies to examine treatment outcomes. Furthermore, the reported use of ride-on cars lacked the component of "social play" as a social environmental modification, which may be a key element to promote mastery motivation and further influences social function (Huang & Chen, 2017). A previous study found that the combination of ride-on car use and a structured, adult-directed social interaction program in the hospital environment was beneficial for promoting socialization (Huang et al., 2018); however, whether this combination affects mastery motivation and home affordances in young children with disabilities remains unknown. Moreover, the long-term effects of training also remain questionable.

Consequently, we examined the effects of combining physical and social environmental modifications in the hospital environment (i.e., the combination of modified ride-on cars and a family-centered, social interaction program) on improving mastery motivation and home affordances in young children with disabilities. We also investigated the relationship between mastery motivation and home affordances after administering the training program.

Download English Version:

<https://daneshyari.com/en/article/6848088>

Download Persian Version:

<https://daneshyari.com/article/6848088>

[Daneshyari.com](https://daneshyari.com)