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Different Ways of Holding Babies and Physiological Load*

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Abstract. The objective of this study is to investigate the influence of different ways of holding babies on physiological load. Eleven undergraduate volunteers participated in the experiment. The experiment variable factors are three ways of hugging: front hug, back hug, and shouldering, and the walking speed of 2mph and 4mph by using the treadmill. The Quark Pulmonary system recorded the physiological characters such as: respiratory frequency, tide volume, ventilation volume, oxygen consumption and heart rate. The experiment found that the physiological characteristic of speed walking of 4mph is significantly higher than those of 2mph. The experiment data and the participants' objective evaluation showed that physiological load of the back hug and front hug of babies are significantly higher than that of shouldering the babies. Even though the back hug and the front hug of babies have higher physiological loads, especially walking in higher speed, we suggest that using back hug in fast walk condition, or using front hug way in general condition as the suitable way of holding babies.
Keywords: baby, hand hug babies, physiological load, pulmonary system

Abstrak. Tujuan studi ini adalah untuk menyelidiki pengaruh cara-cara menggendong bayi yang berlainan terhadap beban fisiologis. Sebelas orang mahasiswi S1 menjadi relawan dalam percobaan ini. Yang menjadi faktor-faktor variabel adalah tiga cara menggendong, yaitu: gendong depan, gendong belakang, dan gendong bahu; dan kecepatan jalan adalah 2 mil per jam dan 4 mil per jam dengan menggunakan treadmill. Sistem Quark Pulmonary merekam karakter fisiologis, seperti: frekuensi pernapasan, volume tidal, volume ventilasi, penggunaan oksigen, dan detak jantung. Percobaan ini menemukan bahwa karakteristik fisiologis untuk jalan cepat 4 mil per jam lebih tinggi daripada jalan cepat 2 mil per jam. Data percobaan dan evaluasi peserta menunjukkan bahwa beban fisik dari gendong belakang dan gendong depan lebih berat daripada gendong bahu. Meskipun gendong belakang dan gendong depan mempunyai beban fisik yang lebih berat, terutama saat berjalan dengan kecepatan tinggi, kami berkesimpulan bahwa gendong belakang dengan kondisi jalan cepat, atau gendong depan pada kondisi biasa; adalah cara yang sesuai untuk menggendong bayi.
Kata kunci: bayi, bayi digendong dengan tangan, beban fisiologis, sistem paru

Many jobs and activities in life require manual material handling. This includes a wide variety of activities such as loading and unloading boxes or cartons, removing materials from a conveyer belt, stacking items in a warehouse, etc. (Sanders and McCormick, 1987). In the daily life, holding babies by hands is one of the most popular scenes of manual handling of objects. The babies have the sense security in parents' bosom. And parents usually cuddle the babies to nurture them.

The baby conceived in the mother's womb for nine months and is well protected

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