Purpose The growing aging population is accompanied by chronic diseases, which will lead to tremendous burdens on medical care services and on individual families in China. Given that sedentary lifestyle is one of the main causes of some chronic diseases that are common in elderly persons, encouraging elderly people to be physically active is recognized as an effective solution to prevent the increase of such diseases. Designing Persuasive Technology (PT)[1] to motivate them to participate in physical activities has become therefore an important question in this context. In this paper, we explore how to develop interventions with PT principles to stimulate physical active behaviour for the elderly in the sociocultural context of China. **Method** Although earlier research suggested that PT could offer many opportunities in supporting the health of elderly persons, very little work has explicitly investigated PT implementations when targeting for specific culture groups. We approach this issue from a cultural-centred[2] perspective, whereby two important points have been considered in the design process: First, the proper use of cultural metaphors[2] could create impactful values for users in the context; Secondly, in collectivist cultures such as China, identified by Hofstede[3], individual's behaviour is determined heavily by social influences. In this study, we conducted our research from these two considerations. We firstly looked up the explicit representatives for physical activity in Chinese culture. We then developed the PT principles for our design based on the social support[4] in PT theory. **Results & Discussion** Based on the method we used, we carried out the design of ShuttleKickers (*Figure 1*), a novel technology to facilitate co-located social exertion game that derived from the traditional Chinese sport of shuttlecock-kick. The form of our prototype replicated the tradition, a cork with colourful feathers attached above. ShuttleKickers integrated with technology in order to record the score and to convert the data into an app, which was designed with persuasive mechanisms related to social interaction. We conducted a field study with our prototype. From the user test, we found that although ShuttleKickers can stimulate physical active behaviour for Chinese people in general, the simply use of single persuasive mechanisms in our prototype could not work very effectively for different individuals, such as sportive and sedentary people. In the future, we will work on how to customize PTs within one culture for different people to finally achieve our research purpose.

References

1. Fogg BJ. Persuasive technology: using computers to change what we think and do. San Francisco: Morgan Kaufmann; 2003
2. Shen ST, Woolley M, Prior S. Towards culture-centred design. Interacting with computers. 2006;18(4):820-852; doi:10.1016/j.intcom.2005.11.014
3. Hofstede G, Hofstede GJ, Minkov M. Cultures and organizations: Software of the mind. London: McGraw-Hill; 1991
4. Oinas-Kukkonen H, Harjumaa M. Persuasive systems design: Key issues, process model, and system features. Communications of the Association for Information Systems. 2009;24(1):28; doi:aisel.aisnet.org/cais/vol24/iss1/28

Figure 1. The ShuttleKickers game