

MASTER'S THESIS

An investigation of using internet website, email and SMS on promoting physical activitiy in Hong Kong Chinese adolescents

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Date of Award:
2009

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An Investigation of Using Internet Website, Email and SMS on Promoting Physical
Activity in Hong Kong Chinese Adolescents

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A thesis submitted in partial fulfillment of the requirements

for the degree of

Master of Philosophy

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Hong Kong Baptist University

August 2009

ABSTRACT

Obesity was associated with decreased life expectancy and has an immediate adverse effect on adolescent's health. Physical activity (PA) was suggested as a modality to tackle this problem. However, adolescent's PA level declined in the last decade. Advancement in Information Communication Technology (ICT) like internet, mobile phone was closely linked with the physically inactive lifestyle in adolescents. On the other hand, the proliferation and accessibility of these ICT devices provided an ideal channel to engage adolescents in PA intervention. Therefore, increasing number of studies has adopted it into health behavior intervention, which is called "e-intervention". E-intervention was found to be more effective than traditional intervention such as face-to-face, mass media and printed materials. It showed promising results on children's disease management (i.e. asthma and diabetes). It also demonstrated positive result in weight loss and PA behavior change in adults. However, its effectiveness on changing PA behavior in Chinese adolescents is still equivocal.

Therefore, the purposes of the present study were 1) to evaluate the effectiveness of using internet website, email and SMS on promoting PA in Hong Kong Chinese adolescents from pretest to posttest in terms of the following behavior indicators: Perceived Benefits to and Barrier of PA (BBPA), Stage of Motivational Readiness (SMR) and PA level. 2) to compare the effectiveness of using different e-intervention

modes on changing the behavior indicators and 3) to examine the impact of gender and internet usage pattern on PA behavior change.

Three hundred and twenty-two participants were recruited from five secondary schools in Hong Kong. Participants were assigned into four groups: The website group (CG) was provided a stage-based website only. The email group (EG) was given a stage-based website and email reminder three times per week. The SMS reminder group (RG) accessed to the stage-based website and received SMS reminder 5 times/ week. The SMS motivator group (MG) was provided a stage-based website and SMS motivator 5 times/ week. The intervention lasted for 8 weeks. Measurements were administered before and after the 8-week intervention.

From pretest to posttest, all groups demonstrated a significant decrease in BBPA [$F(1,242) = 11.09, p=.001$], significant increase in SMR [CG: ($p<.01$); EG ($p=.05$); RG ($p=.001$) and MG ($p<.01$)], and positive but insignificant increase in PA. Although no significant between group differences were detected in all variables, the effect size showed that the MG demonstrated the least magnitude decrease in BBPA, the greatest magnitude increase in PA and reported the largest proportion of participants with stage progression. Neither gender nor internet usage pattern has significant impact on the intervention's effectiveness.

This study indicated that e-intervention is effective on 1) initiating stage progression;

and 2) producing positive but insignificant effect on PA; but 3) has no significant impact on improving BBPA in Hong Kong Chinese adolescents who are in the initial stages of change. 4) SMS motivator (MG) might have a greater added value to the stage-based website. Further study is needed to optimize the intervention to improve the effectiveness.

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