Web-based Exercise Diary for Improvement of Physical Fitness among Hospital Staffs in Health Promoting Hospital Program

Ming-Lun Tsai , Physical therapist, Department of Rehabilitation, Buddhist Dalin Tzuchi Hospital

Introduction

- The completion of the executive records of the health promoting project is important.
- Web-based application seems to be a good tool.
- From 2009, web-based exercise diary was incorporated into our projects.
- The study was designed to explore the effect of the diary for the physical fitness status.

Methods

- Prototype of web-based exercise diary was designed in 2007.
- The application was tested for one year in 2008.

Fig. 1 Webpage of the exercise diary

- We shared the web-based exercise dairy for the participants to access and entry easily in 2009.

Methods

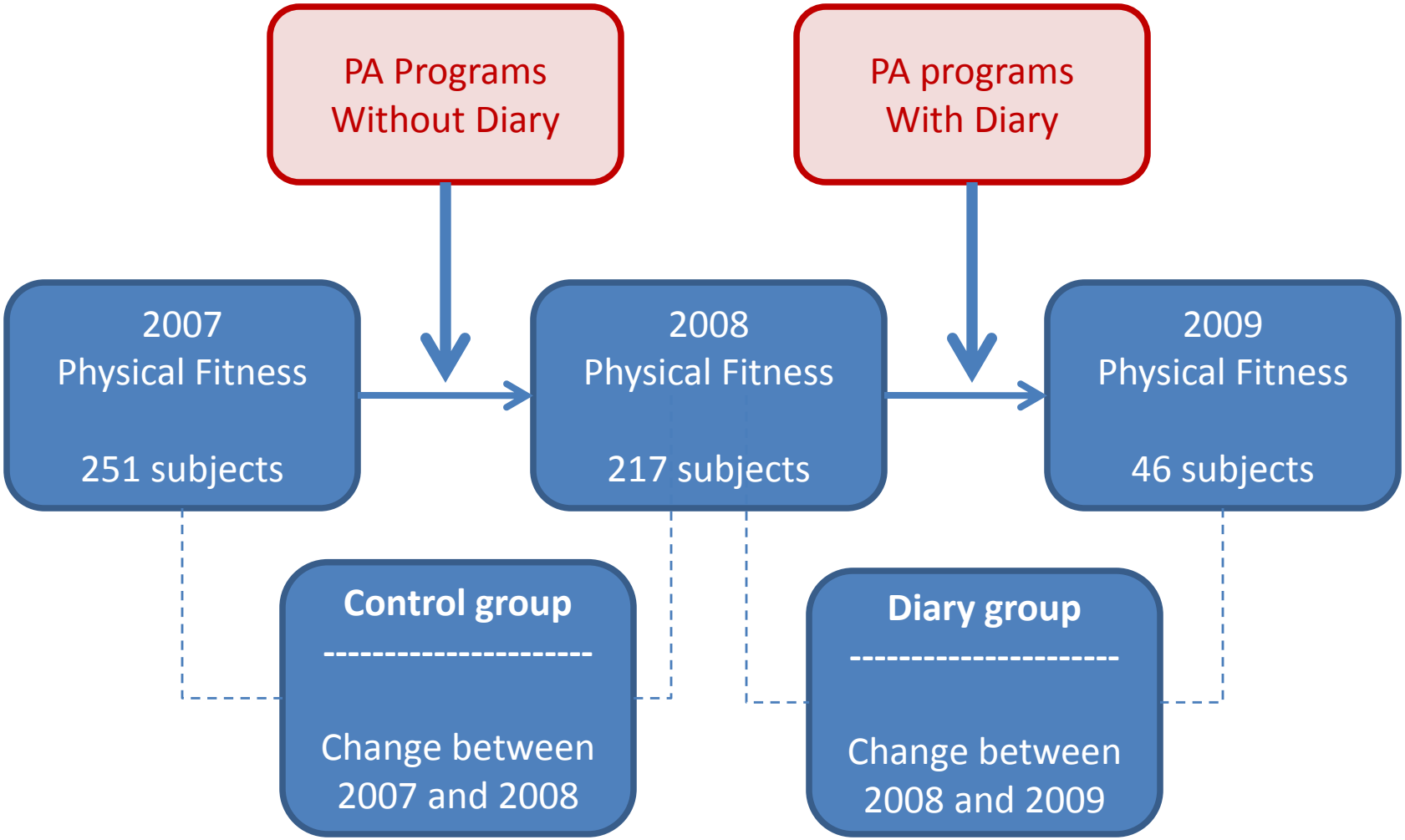

Fig. 2 Flowchart of the study design

Methods

	N	male	female
Sex	**46**	**11**	**35**

	N	Mean	Std. Deviation
Age	**46**	**31.4**	**5.9**

Table 1 Demography of the subjects

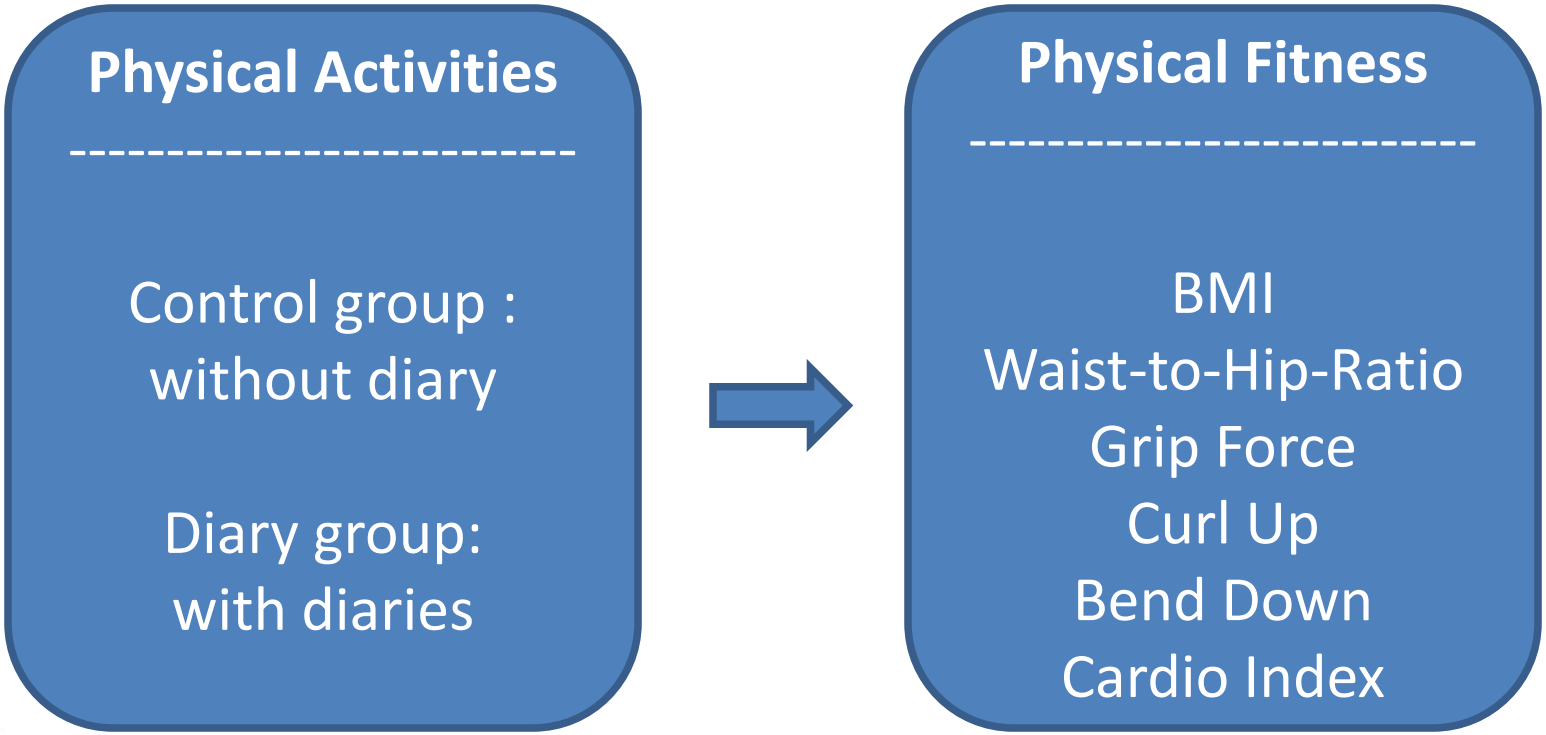

Fig. 3 Independent and dependent variables of the study

Results

- Statistic analysis
  - Independent-sample t-test
  - $\alpha<.05$
- $p< \alpha$
  - Waist-to- Hip Ratio
  - Curl up

Physical fitness	Change of Control group	Change of Diary group	Tendency Up/Down	Independent-samples t-test p-value
BMI	-0.015	0.152	Up	0.4
Waist Hip Ratio	0.035	-0.011	Down	0.01 *
Grip Force	-0.309	0.47	Up	0.36
Curl Up	-0.233	1.6	Up	0.04 *
Bend Down	0.544	-2.081	Down	0.1
Cardio Index	0.104	-0.666	Down	0.65

Table 2 Results of the improvement of the physical fitness

Discussion

- User-friendly Interface
  - Exercise type & place are user-defined
  - Take less time to input because of few mandatory fields
  - Self-setting favorite exercise parameters (up to 3 mode)
  - Batch input for group exercise manager
  - Step by step to be familiar to more detail exercise parameters

Discussion

- Software feedback
  - Everyone can access to personal exercise raw data
  - Provide classification, organization, and statistic analysis
  - Provide information of the exercise science
- Social norm
  - Program request participants to enter exercise data
  - Promoter remind the participants to enter data
  - Web page prompt

Discussion

- Confounding variables
  - Any of exercise type, frequency, intensity, duration could influence the cardiopulmonary training effect.
  - According to our exercise diary data analysis, low average energy expenditure of every week exercises could be the answer why cardiopulmonary indexes and BMI did not change significantly.

Conclusion

- Using web-based exercise diary to record and evaluate the progress of health promoting activities of hospital staffs joining the health promoting project helps to improve the adherence of the activities.
- After one year of experiment, waist-hip circumference ratio and curl-up times of physical fitness did improve.

Conclusion

- However, cardiopulmonary indexes are not different significantly. BMI , grip force and the flexibility didn’t change.
- Further studies should be done for more understanding of the system.

Thanks for your attention