INSTRUMENTAL SUPPORT IN THE PHYSICAL ACTIVITY COMMUNITY - PRELIMINARY RESULTS

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ABSTRACT

Currently, we witness the growth of ICT-mediated solutions for chronic diseases management, especially to assist and support patients in lifestyle changes in order to improve their health condition. Being physically active is one the recommended lifestyle changes for patients with chronic diseases. The challenge within those ICT-mediated solutions for physical activity support is to allow patients to manage themselves their physical activity level (PAL) and provide them with the needed social support. One of those solutions available is the use of Virtual Community (VC). Current VCs provide a part of social support needed by patients, mostly informational and emotional support, but not appraisal (feedback) and instrumental support. Our current work is focusing on the providing patients enrolled in the VC the instrumental support.

To achieve our goal, we developed a VC for physical activity support. The VC allows its members to interact within a Social Networking Portal. We used a sensor system (a triaxial accelerometer and a smartphone) coupled with it to record the PAL of the VC's members. Monitoring the physical activity of the VC's members in term of energy expenditure is how instrumental support will be provided. They are able to see their current physical activity level, to share it within their community and to comment on the results. The platform provides members some communication means that allows them to provide feedback and emotional support to their peers. The VC is based on two modules: a personal and a group module. Activity performance metrics within those modules were suggested in [1] used to enhance the understand of the PAL and, the collaboration and communication between VC's members. The personal level module the members can understand their PAL with some extended metric, decide to share it within the VC and get system feedback. The group level module defines a group metric for the VC and computes the contribution of each member to a group goal. In addition, members can view each member contribution to the fulfilment of the group goal, can view the PAL of the members, if shared, can comment on what other members shared or the group goal, and give other feedback on the results.

A preliminary evaluation of the implemented VC was done with 2 groups of 5 healthy subjects each for two days. It was conducted to test the performance of the VC, and to test the PAL support modules, for both personal and group levels. No errors or anomalies that have impact on the stability or the functionality were detected. First results suggest that the group dynamics depend on a person who takes the role of leader spontaneously; if the "leader" is active and encouraging the other members, they get also active. Also feedbacks and encouragements of the administrator had the same effect.

Since the evaluation was conducted only for two days, these results are not conclusive: a longer period evaluation is needed to confirm it. More improvements are needed to be done in the personal and the group module to provide more extended services to members; improvement of the instrumental support. Next steps will be also about the provision of the appraisal support/ feedback in the VC.

REFERENCES

[1] L. Elloumi, B.J. van Beijnum, and H. Hermens, "Towards Physical Activity Support Community", 6th International Symposium on Medical Information and Communication Technology, 26 - 29 March 2012, la Jolla, California, USA, (2012).