

Information Services to Promote Family Engagement in Healthy Living

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Abstract

We are looking at new effective ways to engage families in weight management. Going beyond targeting individuals out of their family context with a single intervention, we investigate ways of delivering tailored health information as an information service, using the family as a major contextual factor. In particular, we explore interaction modes and processes of engagement with families that would be most effective to provide an information service that users will perceive as a real benefit to them.

1. Introduction

Weight management is important as obesity is increasing in many countries. In Australia, the “overweight and obesity epidemic” has now become a national health priority. During the last decade, there has been a lot of work investigating the impact of individually tailored health education material vs. generic health brochures (e.g., [1], [5] and [2] for a literature review). These studies showed that the material produced is more likely to be read, remembered, saved, discussed with others, and considered as interesting. Thus, effort has been invested in providing people with tailored information products such as personal letters or newsletters.

For several reasons, however, the provision of one information product to help individuals manage their weight is not enough. Firstly, weight management is a long-term issue, and a single intervention is not likely to be sufficient. Furthermore, providing relevant information is only one aspect of a possible solution. The family context has been shown to be important and effective when combined with other health education

programs [6]. While the importance of support is acknowledged, the only form of support that is commonly provided to date is peer-support from people who also signed up in the program (through meetings, e-mails, chats, etc.). Little is actually done to involve the family in the weight management process.

In this context, our aim is to engage the family to provide support to the individual needing to manage his or her weight and promote sustainable family healthy living. In this paper, we discuss our approach to delivering tailored health information as an *information service*, using the *family* as a major contextual factor. We illustrate this with a scenario, and conclude by describing an exploratory study we are conducting.

2. Related work

Health promotion programs tried in the past show that influencing behaviour is a difficult task, rendered even more difficult when dealing not just with individuals but with families. Families are complex entities. Each member potentially influences other family members but without necessarily having the ability to control their behaviour [4]. As a result, it is difficult to know to which family member the intervention should target. Nutrition interventions in particular have been directed to almost all family members involving various family strategies with mixed success.

Mothers have been particularly targeted by researchers as they are perceived as the one responsible for the family diet. Children and adolescents, also often considered as being able to influence the whole family, have been targeted through school-based interventions. However, it has been shown [7] that parental involvement is necessary to lead to behavioural

changes. This suggests that it is crucial to engage the *whole* family in the implementation and the maintenance of such programs to ensure the adoption of healthy habits by the family.

Finding cost-effective ways to engage the whole family is still an issue. The recruitment of parents and the ability to maintain their participation throughout the programs is difficult. Families are increasingly interacting around various media for the delivery, exchange, and assimilation of information. This has changed the way people share information, build relationships, communicate, and develop communities of interest. We propose to exploit these IT advances for the delivery of information in weight management and the associated lifestyle changes to support sustained impact.

3. Our research questions

In our work, we are investigating new effective ways to engage families in weight management programs, building on work in tailored information delivery and adaptive hypermedia (e.g., [1], [5]). We address two limitations of existing solutions in this domain: 1) we want to provide more than a single information product, and 2) we seek to engage the whole family.

More specifically, we are investigating which information services can improve the whole family engagement. As family engagement and support are crucial, we want to explore effective ways to achieve it. Examples of services include providing a chart of progress, giving medical information as to the benefits of losing weight, offering a recipe or a tip, etc.

We are also investigating the most cost effective ways of tailoring services. By cost effective, we refer to the total system and participant costs balanced against effectiveness [3]. By effective we mean both increasing the positive attitude of the user and the user seeing the service as a benefit. This raises a number of questions: Should the services proposed to people be tailored? Because people can have different preferences, some people might want to receive certain services, others might not; Should the information provided by a service (its content) be tailored? Some information such as medical information should probably be tailored, while tips might remain generic; What elements of the family context or users' personal characteristics need to be taken into account? What exactly needs to be tailored (e.g., content, presentation), and how much tailoring is enough?

We started investigating these issues in two ways. Firstly, we are developing user scenarios with personas to brainstorm on what we envisage a desired IT

environment to provide. This will be used for mock-ups. Secondly, we are also conducting an exploratory study aimed at gathering information on preferred interaction modes (e.g., web, email), processes of engagement (e.g., email reminders or email at fixed intervals), type of information desired, etc.

4. A family-oriented web space

Our first step was to envisage a concrete scenario with personas. The scenario is built around a personalised online lifestyle planner which provides information specifically tailored to each family, who has ownership of the space and the services. The scenario is meant to help us getting feedback on services that might be available, and on the different levels of tailoring that might be appropriate. We are currently seeking feedback on a number of features: a weekly mission and an overall goal (both individual and family); summaries of family/individual journey against goals and missions; ways to record what was a success or what does not work; a lifestyle journal to allow family members to record their daily food intake, exercise and family activities; and private and shared spaces, as required by each member of the family.

4.1. A scenario

Step 1: Getting started – The family meets with a health professional to discuss a weight loss program for them. The family profile is collected. It might include: physiological information, living habits, goal and timeframe to achieve the goal, people they would like to include as part of their support. Then, a personalised web space is set up for the family. This is where the family will access personalised information.

Step 2: Setup the family environment – The family gets familiar with their space exploring the services offered to them and personalising some aspects.

Step 3: Get your weekly mission – Each week the family receives *a mission*. It includes individual goals and family goals that are to be achieved collectively. The family can discuss and record how they will achieve their mission and what obstacles might get in their way; individual members can request the support of other members. Tailoring is done through the mission setting as it takes into account the family/individual and their goal. The tailoring is also done through the type of information provided to the family during the week to help them reach their mission (short term) and goal (long term).

Checkpoints with the health professional – Throughout the journey, the system sends reports to

the health professional, especially when obstacles are encountered.

4.2. The family profiles

We are building mock-ups around this scenario for the two following family profiles (our “personas”). Note that family is to be understood as a nuclear family i.e., including the parents and children only, living in the same household. In the Smith family, only the mother is overweight. This makes her position difficult as she is alone in her situation. The challenge here is to include the family in the program to support her and ensure that, as a whole, the family has a healthy life style. In the Jones family, both parents are obese and the children are overweight. The challenge here is to find appropriate goals for both individuals and family, and to engage the whole family, all in support of each other. The long-term goal is for them to turn their life style around and acquire a healthy life style.

The mock-ups built around these two families are meant to help us think about what to provide and how, in very different family contexts, and also allow us to gather feedback from families.

5. Exploratory study

We are also currently conducting an exploratory study, mostly designed to gather information about families. Eligible families must at least have one adult categorised as overweight or obese and must have at least one child. This study explores issues related to information service, family engagement, and interactions. This is done through a questionnaire which aims at gathering information regarding: what types of services might be appropriate for individuals and families; how the family may be engaged more readily; and what types of interactions might be appropriate.

The results of the study and the feedback from our mock-ups will be used to inform development, investigation, and further experiments.

6. Conclusions

Weight management has become a national priority in Australia. Our work aims at developing an IT environment to support families in managing their weight and adopting a healthy life style. In particular, we explore what interaction modes and processes of engagement with families would be most effective to provide an information service that users will perceive as a real benefit to them. In this paper, we discussed our approach and presented the type of information

service that we are exploring through the development of a scenario.

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