Trying to find a balance: social support vs privacy during weight-management

Julie Maitland

Dept of Computer Science

University of Glasgow

jules@dcs.gla.ac.uk

Matthew Chalmers

Dept of Computer Science

University of Glasgow

matthew@dcs.gla.ac.uk

Abstract

This work investigates current attitudes towards the involvement of others during weight-management (WM). It is prompted by ongoing attempts to harness social influence within system design so as to promote an increase in physical activity, with obesity often cited as a motivation. Through in-depth interviews, we have found that the complexities of sharing information in existing WM practices are not reflected in current system designs. Initial findings highlight the design tension raised by the need for social support as well as privacy. Preliminary design concepts of *selective disclosure* and *relative comparison* are offered to developers of sociocentric systems supporting WM-

specific behavioural change.

Keywords

social support, health, behavioural change, obesity

ACM Classification Keywords

H.5.2 [User Interfaces]: User-centered design; J.3 [Life and Medical Sciences]: Health

Introduction

Addressing the problem of overweight and obesity is often identified as a potential benefit of the many recently developed physical activity monitoring systems. Early efforts to integrate social influence into these systems' designs have so far had variable success in motivating an increase in activity, especially when compared to single-user counterparts. For example, while Consolvo et al [3] found that integrating social influence into the design of a physical activity monitor motivated a greater change in activity levels, others have found no significant effect [5, 8].

Despite the acknowledged influence that social support has on health [1] and behavioural change [4], it is not yet clear how best to harness social support within health-related behaviour management systems (HBMS) aimed towards helping people who are trying to lose or maintain weight. Current attempts to socialise activity monitoring systems have so far been relatively static:

even in those exhibiting innovative user interfaces and novel appropriation of the monitored data, the data and/or progress towards goals are broadcast consistently to a pre-defined peer group. While the sharing of everyday information such as location and availability between peers in this way has already raised concerns of privacy [7], the sharing of health- and weight-related information is further complicated by its potentially sensitive nature.

The concept of computer-mediated social support is not new to the healthcare and wellness domains of HCI; in particular there is much literature surrounding the provision of social support within online health communities. A crucial difference between this work and those considering online health communities is that it aims to investigate the social support practices within pre-existing social networks. Online community members tend not to use the community to interact with their 'offline' friends and family. Indeed, in their long-term study of online community usage, Maloney-Krichmar et al. [9] found that members purposefully used the community as an alternative source of support to their family during the recovery period. These communities undoubtedly provide valuable support for their community members. However, in the medical literature it is suggested that the most potentially valuable source of support for an individual is their existing social network, where one is available [12]. Yet even within the medical domain, the underlying dynamics and mechanisms of social support remain unclear [2]. In a review of clinical studies into the role of social support in WM interventions, it was found that "social support was clearly defined on a practical level in hardly any studies" [12].

In an aim to address the diverse findings in relation to HBMS and investigate the practicalities of social support during WM, we look closer at how people perceive and manage their weight, with a particular emphasis on identifying if and how peers are currently involved. The primary goal of this study is to establish whether the aforementioned straightforward sharing of data reflects the current practices of 'weight-managers' by discovering their information needs: what weight and weight-loss related information do they share, how, when, why and with whom. The secondary, and ongoing, goal of the work is to provide grounding for the next generation of systems. Here we describe the findings of the in-depth interviews of 14 individuals who considered themselves to be currently or previously overweight; some with extensive and others with no experience or intention of losing weight. We describe current and potential *sources of support*, and highlight *selective disclosure* and *relative comparison* as important aspects of sharing and hiding weight-related information that could or should influence system design. The paper concludes by discussing such initial design concepts and future research plans.

Methods
Taking a qualitative approach, a semi-structured interview schedule was designed to guide in-depth interviews. Emergent themes subsequently steered the course of each interview. The initial schedule was structured around the following general topics: own perception of weight, barriers and motivations to losing weight, the weight-loss experience, influential friends and family, and sources of inspiration and temptation.

Interview recruitment posters were created and displayed in several community centres, shop notice

Gender	Age	BMI	Stage of Change
F	20s	Normal	Action
M	20s	Normal	Maintenance
F	50s	Obese	Action
F	40s	Overweight	Action
F	40s	Refused	Action
F	20s	Normal	Maintenance
M	50s	Obese	Contemplation
F	30s	Overweight	Action
F	30s	Normal	Maintenance
F	30s	Normal	Maintenance
F	30s	Refused	Maintenance
F	20s	Obese	Action
M	40s	Overweight	Action
M	70s	Obese	Pre-contemplation

Table 1: Participant Demographics

boards and within the university. They invited individuals who considered themselves to be overweight (or had been in the past), to talk about the 'things' and people in their life that made it easy or difficult for them to lose weight. Interviews lasted between 40 minutes and an hour, and took place at the university or in the participant's home. One interview became an impromptu focus group (composed of the initial respondent and three 'diet buddies' whom she had invited along) lasting for 1 hour and 45 minutes. All of the interviews were transcribed, coded and analysed in accordance with Grounded Theory [11].

As many might expect, the majority of the 14 participants interviewed were female (10). Apart from this, the sample had a relatively broad demographic with respect to age, height/weight ratio[1] and stage of behavioural change [10]. Table 1 presents the group demographics. Preliminary findings are presented below.

Findings
Even within a small exploratory study such as this, the complexities of weight-management as a research domain become apparent. Of the 5 interviewees who were not overweight according to their BMI, only 2 were happy with their current weight. The remaining 3 were actively trying to lose weight. Immediately this raises a grey area: how do we judge whether behavioural change is positive or negative? Is weight-induced behavioural change only positive if the individual is outside their normal BMI range? Is weight- rather than health-induced behavioural change ever positive? For the purpose of this paper no judgment of

[1] Body Mass Index (BMI)

positive or negative change will be made, other than those expressed by the participants.

Of the 12 participants who were currently trying to lose/maintain weight, only 3 were acting independently; the remaining 9 managed their weight alongside peers (typically friends and colleagues) within one of three distinct and unrelated 'unofficial' weight-loss groups. These informal clubs are one of two *sources of support* to emerge recurrently throughout the interviews, the second being the family. The second theme to emerge is that of *secrecy and disclosure*. Both themes are discussed below with preliminary interpretation and suggested implications for the design of weight-management specific HBMS.

Sources of Support
Support networks ranged in size and formality, from having a friend—also trying to get fit—with whom emails are exchanged confessing lapses and declaring successes, to unofficial weight-loss 'clubs' formed by friends and colleagues. Although family members were sometimes members of such support networks, more often than not 'the family' was often seen as a hindrance on weight-management efforts.

THE FAMILY
The day-to-day running of family life affected efforts to diet and exercise. Between working, doing the housework and looking after children, very little 'me time' was left for participants. By the time children were put to bed it was either too dark or too late to go for a walk, or participants were exhausted. While most husbands supported wives' weight loss attempts in theory, there was no evidence of them offering practical support by alleviating their wives' domestic

chores so that the latter could make some time to exercise. It should be said, however, that there was no evidence of any of the participants asking her husband to help in this way.

Husbands are also the worst offenders when it comes to offering 'bad' foods as treats while their wives are trying to avoid such foods. Undoubtedly an expression of care, this was highlighted by all the wives interviewed as the single worst thing that their husband does while they are dieting. Coming home with a Chinese meal and a bottle of wine would normally be welcomed with open arms, but is seen as an unnecessary temptation when dieting. Husbands can find themselves frustrated when it comes to supporting their wives: while it is frowned upon to provide temptation, it is even worse to discourage their wives from eating 'something they shouldn't':

"I would have a wee bowl of crisps, because crisps are my thing. And he would go like that 'erm… two days?' [without having crisps], but not because he thinks that you're getting fat, I never feel like that, but it is not helpful because it makes you think, 'What? Are you the crisp police?'"- Isabelle

Despite any well-meaning intentions, there seems to be a fine line between comments and actions being perceived as encouraging or as interfering.

THE CLUB
Seven of the ten participants actively trying to lose or maintain their weight belonged to one of four unofficial weight-loss clubs. The clubs are typically made up of around 4 friends/colleagues, although one was slightly larger due to its base on a hospital ward. All apart from one resembled formal weight loss clubs, with a focus on dieting as the primary route to losing weight, including weigh-ins complete with recording of weight-loss/weight gain. Despite many members of the other club being on diets of some sort or another, its focus was on increasing and maintaining physical activity levels; they shunned the weekly weigh-in for twice weekly hour–long walks. Participants' experiences of and attitudes towards the weigh-in varies greatly: it is motivating when weight is lost, embarrassing when weight is gained, inspiring when others lose weight, and satisfying when others gain.

When the clubs are formed, members bring with them their previous experiences and knowledge of formal weight-loss programs. The clubs provide a shared resource for diets, eating plans, recipes and exercise classes/walking routes etc. In addition to such practical support, the time spent with other club members is deemed as allocated 'weight time'. During such times it is possible to complain about the diet and talk about your weight without fear of being a burden, something which prevented participants expressing their feelings to other peers.

Secrecy and Disclosure
Varying degrees of secrecy were maintained that surrounded several aspects of an interviewee's weight management: their actual weight, whether they perceived their weight to be a problem, and their weight-loss plans and actions. Carol's story is illustrative of many of the emergent themes/strategies relating to secrecy and disclosure during weight loss:

"Just now I keep mine a bit private because I was a wee bit fat… I don't really care what anybody thinks but

you get embarrassed because, if everybody starts saying 'oh god I didn't realise she was 18 stone 2', that would embarrass me." - Carol.

Carol had been dieting for 5 weeks when she was interviewed and had lost 17lb from her original weight of 252lb. Colleagues at her work had formed a 'diet club', sharing diet plans and participating in a weekly weigh-in every Tuesday after shift handover: all club members would go into an office and an allocated member would weigh each one, recording weight loss or gain in a booklet. Because she wanted to avoid the embarrassment of quantifying her weight, Carol performed the weigh-in in secret with a trusted party. Other members of the club did not know that she was participating, and it was only when her weight loss progressed and they started to notice that Carol was prepared to 'come out' and start publicly participating in the group.

Whether or not a participant disclosed particular aspects of their weight-management to their peers often depended on how well the participant could *relate* to the peer. The process of disclosure often progressed or regressed incrementally, depending on the interviewee's progress towards their weight-related goals or on how previous disclosure attempts had been received.

RELATIVE MEASURES OF WEIGHT
Participants often compare their own circumstances with those of others. As well as using these comparisons to judge the relative weight-loss successes and failures of themselves and others, they often will only feel comfortable *disclosing* weight-related plans and achievements with those who they think are comparable with them. In some cases this relative disclosure is out of self-interest, seeking support from those who can relate and understand. Alternatively it is sometimes out of concern for the other person: the three eldest women all expressed concern about discussing their weight-loss with younger colleagues for fear of cultivating obsessive attitudes.

Conclusions and Future Work
While this study has shown that people do share activity and diet-related information with others, their willingness to share is contextually dependent on the people with whom information is being shared and the current state of progress towards weight management goals. In contrast to the previous work that has also found context-dependent but relatively relaxed and generally positive attitudes towards sharing everyday information [6], the sensitive nature of weight-management is reflected in interviewees' practices of disclosure rather than their privacy preferences.

There appears to be a degree of tension between the need for social support and the need for privacy. This study has elicited some of the *selective disclosure* and *relative comparison* strategies that individuals employ to manage such tensions. The study can inform the design of sociocentric systems to support weight-management specific behavioural change in the following ways:

- Allow for the selective, partial and incremental disclosure of (self or automatically) monitored behaviours, weight status, plans and progress towards goals, rather than static pre-defined sets of people to be notified automatically

- Enable relative comparison between individuals using the system based on current/previous weight loss attempts/goals/successes/failures and age/gender/social context, rather than absolute statements of gain or loss.

As part of our ongoing work, we are currently exploring implementations of these design concepts and refining them into formative design guidelines.

While the focus of this work has been drawn to existing support networks of friends and colleagues, it highlights the need for further investigation into family-based behavioural change technology. Technology that shares the responsibility and benefits of behavioural change 'in the home' and between family members stands to reduce the well-documented pressures faced at home, made evident by the interviewees.

This study represents the preliminary exploration of issues faced by a population championed as potential beneficiaries of current innovations in activity promotion technology. The work described here is by no means comprehensive; analysis is ongoing and we plan to explore the potential for technological support in everyday weight management and formal weight loss programs. Further investigations are called for into populations represented by this study's outliers, e.g. men, those not yet contemplating weight management, and individuals who prefer to act alone. By highlighting the complexities of harnessing social support during weight management, this work informs the design of 'appropriately social' weight-management systems and identifies avenues of future research within this domain.

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