

Tracking the trackers: Self-tracking in households as social practice

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Abstract

The purpose of this article is to examine the effect of different types of self-tracking users (trackers) on the health behaviours of others living in the same household. The study takes an international perspective, examining tracking practises from 13 households based in Europe, the United Kingdom and the United States to determine how trackers contribute to emerging cultural and social factors across life stages. The findings contribute to digital health understandings by shedding light on collective practises formed within frequently intergenerational households. The study emphasises the importance of cross-cultural and intergenerational tracking research to foster collective and symbolic health engagement. The article delves into the intersection of online and offline dynamics to describe the social practice of digital health culture. It sheds new light on structural and agency issues in households sharing self-tracking experiences.

Keywords

Digital health, general, apps, personalised medicine, qualitative, studies, self-tracking, mHealth, psychology, personalised medicine, technology, general, household

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Introduction

This paper investigates how various types of self-tracking users (trackers) influence the health practices of others living in the same household. The study benefits from an international perspective, but shares limitations with previous research on health behaviour by focussing on those who live in locations with high levels of technological use.^{1–4} The empirical data examines household tracking practices to investigate how different trackers contribute to new cultural and social factors affecting health across life stages. Nettleton and Green⁵ propose the context of ‘social practise’ to best capture the complexities and interconnectedness of health structures and examine why practices change. In this case, they argue for a shift in perspective: ‘to think of physical activity not as a form of health behaviour, but as a mode of social practice.’⁵ (p. 241). Drawing on the classic work of Giddens⁶ and Bourdieu’s⁷ conceptualisation of social practice, Maller considers the need ‘to better understand the dynamics between agency, structure, daily life, health and ill-health’⁸ (p. 53). Ajana’s work on self-tracking surveillance highlights the significance of individual and collective subjectivities in

considering social practices formed within digital health culture and quantified self-identities. Where, the conditions of digital health culture should be examined, ‘not only in terms of online forms of health-related biosocialization, but also with regard to the offline meetings facilitated by self-tracking communities.’⁹ (p. 8). This article delves more deeply into the intersection of such online and offline dynamics to describe the social practice concerning digital health culture and shed new light on issues of structure and agency in households sharing self-tracking experiences.

Self-tracking health culture

Academic literature frequently discusses the potential of digital health technology to disrupt medical and public

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health practise and produce different outcomes for patients outside of the traditional clinical setting.¹⁰⁻¹² Self-tracking technologies, in this context, are part of an always-on culture that is changing how young people in particular, communicate and interact with health information.¹³ Régnier and Chauvel¹⁴ raise new concerns about the growing digital divide and health disparities associated with this self-tracking culture. In their study of middle-class self-trackers in France, they observed significant individual change most often following a major event in the participants' life course (a new job, home or separation); noting how 'the middle class perceives the use of self-tracking as a way to access the practices of the next highest social group to which they aspire.'¹⁴(p. 921). The perceived high social status of wearable tech (e.g. a smartwatch) and access to sophisticated smartphone apps should be viewed as integral to self-tracking health culture and, in turn, social practice. In other studies, the social well-being consequences of health tracking are well documented, focusing on a self-care body ethic and preventative ill-health culture (see¹⁵) In this regard, there is growing interest in the various ways self-tracking technologies are socially and culturally relevant with significant health implications^{4,16,17}. The value of a shared health culture grows, as evidenced by the conditions for achieving health goals in an online and offline environment where new forms of social practise are enacted as part of self-tracking.⁹

Against this backdrop, it is worth noting that there is no universally accepted definition of self-tracking culture. Hofstede defines *culture* as 'the collective programming of the mind which distinguishes the members of one group or category of people from another.'¹⁸ (p. 5). When applied to self-tracking, Hofstede's work relates to a broader sense of health culture or being healthy founded on shared values practised by a specific group of people – such as the 'quantified self' community.¹⁹ When paired with what Beer²⁰ observes as the 'by-product' of digital data, digital forms of health interaction create new opportunities for social practice. As a result of self-tracking becoming a well-established feature of daily lives, we can distinguish how it affects individualised health practises and their overlap with proximate others.¹⁶ Indeed, our understanding of self-tracking as a cultural phenomenon is incomplete unless we recognise the appeal of the health data beyond its 'allure of objectivity'¹⁹ (p. 1706). Moreover, and crucial to the arguments advanced here, the conditions of health change should be read in the context of the specific social and material environments from which self-tracking derives its meaning.

In their study of interpersonal relationships in the home, Neustaedter et al.²¹ observed how technologies change people's awareness of routines and group dynamics. The study helps us understand how mediated interactions and data become integral to family routines, both 'articulating and verifying the everyday mundane that people are familiar with.'²¹ (p. 2). Pina et al.²² observe how 'Family-centred

informatics would take advantage of shared daily experiences to allow one family member to add information on behalf of others.' According to Pina et al., self-tracking technologies and health self-management have a 'ripple effect' within households, improving family awareness and health goals.²² (p. 2300). One of the study's recommendations is to understand the opportunities for family-centred health informatics and to address family health as a whole. The way health tracking is embedded in the physical environment of the home will aid in the analysis of the various experiences for acquiring self-tracking skills and the conditions for achieving health goals.

Reflecting on these studies, we need to understand the conditions that enable such family/home-focused health practice. Here, the proposition is to examine alternative forms of knowledge to explain how and why health practices are transformed within the home. While the emphasis is on self-tracking and health data as extensions of everyday tech-driven culture, the findings presented in this article have a subtext. Indeed, they should be read in response to Pina et al.'s²² call to investigate the contours of family informatics to gain a better understanding of family health monitoring practices. According to Grimes, Tan and Morris,²³ family-based education 'demonstrated [the] importance of modelling, praise, and family interaction' to facilitate discussions about living healthier lifestyles. This type of facilitation has significant implications for understanding an emerging 'digital-sharing' culture in which health practices recursively fold back into and reconfigure health behaviour^{24,16}. Thus, household self-tracking can in part make this sharing and recursive loop of new health social practices visible.

The central idea is that households are changing the contextual experience of health tracking and opening new spaces for empowerment. For example, Aarhus and Ballegaard¹⁰ emphasise the importance of self-care opportunities outside the clinical setting and integrating health management with other activities in the home: 'to establish routines allows the disease to step into the background.' Such integration considers the practicalities of health at home, how this alters our perception of illness and how self-tracking practices provide health empowerment. Despite the potential for empowerment, Will et al.'s²⁵ study on self-tracking in older couple's intimate relationships emphasises the emotional and physical vulnerabilities associated with a partner's involvement, as well as more traditional forms of control (e.g. gender roles). In contrast, Loe's²⁶ research on the use of health technologies by women nonagenarians, the majority of whom lived alone, reveals a set of health practises centred on a self-care ethic around independence: 'about accomplishing and maintaining a broad sense of health that involves comfort, confidence, continuity, autonomy and social capital in the context of old age.'

The question here is how health data and self-tracking practises reshape and rework one's perception of health

culture. For instance, Yamashita et al.²⁷ argued for the importance of family health tracking in developing coping strategies between family caregivers and care recipients. Elsewhere in computing scholarship, Ferdous et al.²⁸ have built a persuasive case of what they refer to as ‘everyday commonsensailty’ (*italics* in original) as enhanced family experiences through digital augmentation centred around family mealtimes. This study of ICT usage and mealtimes show how recurrent patterns of social interaction, such as those that characterise family dinners, can be examined for ways they reinforce social relations. The surrounding social and cultural structures have important consequences for understanding how and why health practices within households may change: ‘not least because how and why people act as they do is likely to be beyond their cognitive and rational understanding’⁵ (p. 241). One explanation is the emphasis on self-improvement that has long been prevalent in Western cultures and is an essential aspect of self-tracking; as Lupton²⁹ (p. 61) observes, ‘you are your data’.

Such individualised perspective is consistent with recent health surveillance research, which shows that health data enact a specific version of the social world, namely the normalisation and objectification of individual experience.³⁰ This central premise is evident in Jørgensen et al.’s³¹ study of children’s health activity tracking by parents: ‘the data sometimes reassured parents on the children’s physical activity and sleep [...] Also, often the children felt under surveillance.’ While health data tracking opens a new set of analytic possibilities in which individuals seek to have an active attitude towards health, there is also a ‘dark side’.³⁰ As stated by Jørgensen et al.,³¹ we should be aware of the risks associated with monitoring physical activity in the home, particularly in terms of how health surveillance is brought into family settings and the longer-term orientation of the cultural value of self-tracking practises. Other researchers have demonstrated how technologies help loved ones feel connected to each other can enhance caring intimacy, outweighing the risk of data surveillance.^{32,33} Considering ‘care at a distance’ for households in Japan (such as service robots and AI devices) Hjorth and Lupton’s¹⁶ study demonstrates opportunities for new intimacies supported by enduring patterns of social interactions and care that characterise a broader digital health culture. Turning the focus away from the individual tracker and towards the relational and cultural aspects as a mode of social practice is an excellent place to start when examining household tracking.

Research methods

This research was a qualitative study of participants in major cities in France, Italy, Spain, the UK and the United States. Data were collected over 6 months, following a pilot study with participants who self-identified as ‘experienced and dedicated trackers’ – those with more

than 2 years experience of recording health data and maintaining daily fitness activities. Following approval from the institutional ethics committee, participants were recruited using purposeful sampling and snowball sampling techniques.³⁴ A social media survey (n = 852) about self-tracking was distributed through independent health fitness clubs and online running communities, targeting long-term daily self-trackers. Among respondents, 346 individuals (40%) lived in a household where they were the first to adopt self-tracking activities. The survey had a higher response rate than expected (the goal was to get at least 300 responses) and likely due to people spending more time on social media and attention to health and fitness posts during national and global COVID-19 restrictions.

Following post-survey invitations, 35 households agreed to participate further. Table 1 shows an overview of the household demographics, including the numbers of new and experienced trackers.

Everyone over the age of 19 years in these households agreed to participate in the study for the duration. The paper’s findings include 13 households with a diverse mix of trackers and age ranges (Table 2) to consider entanglements of kinship and care across digital social and material contexts. Excluding dependent children (shown in *italics* in Table 2), there were 16 experienced trackers aged 19–54 years, 11 of whom were male and 5 of whom were female. Participants who were new trackers ranged in age from 19 to 98 years old, with 13 female and 6 male participants.

Households were stable in the sense that their members had lived together for at least 18 months; five had dependants under the age of 13 years, and three had elderly relatives (aged over 65). Four households lived in rented housing, while nine lived in mortgaged housing. All the participants were employed with a steady income or enrolled in full-time higher education. The number of languages spoken in the household was asked to indicate multiple literacies and intergenerational arrangements for health support in the home (see³⁵). Slightly less than one-third (4) speaking a single language, more than half (7) speaking two languages and three households speaking three or more.

Semi-structured interviews were conducted via Zoom lasting for 45–90 min. Households were interviewed on three occasions (every 2 months) with newly emerging themes each time informing the next stage of data collection. Interviews were ordered as follows:

1. The first interview focused on how tracking as a household came about;
2. The second interview focused on changes within the household;
3. The third interview was a ‘hindsight exercise’ in which participants reflected on their shared accounts of tracking.

Table 1. Total number of households interviewed n = 35.

| Country | Number of participants | Median age | Identified as a woman | Identified as a man | New | Exp |
|---------|------------------------|------------|-----------------------|---------------------|-----|-----|
| France | 18 | 58 | 10 | 8 | 9 | 9 |
| Italy | 16 | 48 | 8 | 8 | 7 | 9 |
| Spain | 13 | 49 | 8 | 5 | 7 | 6 |
| UK | 20 | 42 | 10 | 10 | 8 | 12 |
| US | 25 | 43 | 17 | 8 | 9 | 16 |

The interval method was intended to capture the ‘co-evolving’ aspects of tracking and the communicative possibilities of self-improvement through tracking. Interviews were organised so that household members could join the discussion together. The purpose of the discussion was to allow shared narratives in a real-time setting that could be explained or corrected between household members.³⁶ Will et al.²⁵ discovered similar emerging dialogues in interviews with couples about tracking. The digital interview settings offered some exciting possibilities for qualitative interviewing.³⁷ The setting included fitting participation alongside other demands within the home. Participants could prioritise caring tasks elsewhere and take turns responding to questions. Household members wanting to offer spontaneous or fleeting contributions could do so by moving into the interview ‘space’ and joining the Zoom call. Interview transcripts were read and reviewed at each interval for patterns to emerge at one stage and be translated into the next, allowing for ongoing comparison of results. The qualitative data was analysed with ‘in vivo’ coding, which relied on terms used by the participants, and then ‘constructed’ coding, developed by the researcher.³⁸ Household codes were compared to each other to generate dominant and counter themes, going back over and reviewing each set of interviews and running queries in NVivo to check consistency and accuracy.³⁹ The quotations in this article are taken verbatim. The ellipsis dots indicate that minor edits were made to improve readability.

In the first section of the findings, I consider *tracking transference*, which focuses on a households’ resources and self-tracking practices. Next, I discuss *co-tracking* enabling new joint health practices. In the final section, I focus on intergenerational relationships and how households were *making sense of health change*. The participants’ identities are coded and related to Table 2. The coding includes the household number, gender, age and location; for example, **(H1. f,39, France)** refers to Household 1, female, aged 39 years, located in France, shown in bold as an experienced tracker.

Findings

Tracking transference

Transference practises were identified in the modes of tracking behaviour, describing how individuals sought to work on themselves while also improving the lives of those around them. Tracking transference defines the new types of knowledge associated with health tracking, as well as how the household unit introduced new opportunities to capture and ‘read’ various types of health data together:

We have a daily routine where I get up and the first thing I’m out of the house on a run while my family sleeps [...] This is a set routine for me to monitor my health and to track it. I make personal workout lists, so I can see if I have achieved my goals. My son [aged 11] is interested in whether I am top of Strava’s leader-board that week. I share jokes about ‘mummy’s results’ with my son. **(H1. f39, France)**

I started to notice [the household’s] fitness because of self-tracking and talking about personal changes. Not just about my health or the health of my family or friends, but about what we are thinking and how we are being with each other. **(H2. m42, Italy)**

As a family, we are useless about discussing things, especially health issues. We communicate reasonably well together about everyday things, but personal stuff is more difficult. We care about each other, and we can talk about various health problems in our friends’ lives and stuff like caring for others [...] About six months ago I decided to take my health seriously and was delighted that my family was involved in my success of weight loss [...] we began to look at all of our health habits and to see if we could find a way for the family to do the same thing. **(H3. m51, UK)**

Table 2. Households included in the findings n = 13.

| Household | Household members | Occupations | Country |
|-----------|---|---|---------|
| H1 | Grandmother (f, 77) Mother (f, 39) <i>Dependent child (m, 11)</i> | Retired Engineer | France |
| H2 | Wife (f, 43) Husband (m, 42) <i>Dependent child (f, 10)</i> | Surgeon Nurse | Italy |
| H3 | Father (m, 43) Partner (m, 51) <i>Dependent triplets (f, 6)</i> | Civil Servant Teacher | UK |
| H4 | Five students | | |
| | (m, 19) | Student | |
| | (m, 19) | Student | |
| | (m, 23) | Student | |
| | (m, 23) | Student | US |
| H4 | (m, 25) | Student | |
| | | | |
| | | | |
| | | | |
| | | | |
| H5 | Mother (f, 56) Non-dependent daughter (f, 34) | Retired Student Nurse | France |
| H6 | Wife (f, 58) Husband (m, 45) Non-dependent son (m, 24) Non-dependent daughter (f, 20) | Senior Researcher Marketing Executive Self-employed Self-employed | US |
| H7 | Co-habiting partners (f, 43) (f, 54) | Self-employed Self-employed | France |
| H8 | Mother (f, 61) Non-dependent son (m, 34) and partner (f, 21) | Part-Time Consultant Administrator Veterinary Nurse | Italy |
| H9 | Mother (f, 48) Non-dependent son (m, 21) Non-dependent daughter (f, 31) | Beautician Fitness Trainer Coffee Shop Business Owner | US |
| H10 | Mother (f, 40) Non-dependent son (m, 19) <i>Dependent grandson (m, 2)</i> | Flexible Job Theatre Manager | Spain |
| H11 | Co-habiting partners (m, 31) (m, 52) Dependent parents (f, 77) (m, 78) | Co-Business Owners Semi-Retired | Spain |
| H12 | | | UK |

(continued)

Table 2. Continued.

| Household | Household members | Occupations | Country |
|-----------|---|--|---------|
| | Grandmother (f, 98) Non-dependent granddaughter (f, 31) | Part-Time Model Full-Time Fitness Model and Influencer | |
| H13 | Co-habiting partners (f, 32) (m, 34) <i>Dependent daughter (f, 9)</i> | Construction Worker and Engineer | UK |

Experienced tracker is in **bold** and new users in light.

The above experiences show an evolving culture of health and fitness (often used interchangeably) and are led by self-monitoring methods. For H1, transference influenced the fitness routines shared between mother and son, and in later interviews, the health information shared with the grandmother. The transference experience was slightly different in H2: ‘talking about’ personal change created an opportunity to start related, deeper conversations about health here. In parallel, the father had noticed his 10-year-old son’s interest in health ‘because we [mum and dad] are tracking’. In H3, one partner’s decision to ‘take [his] health seriously’ enabled the transfer of deeper health narratives between experienced and new trackers building on existing interpersonal relationships.²¹

When self-tracking became routinised within a household, this facilitated further health discussion and activities. This contrasts with attempts by participants in Will et al.’s self-tracking study to “draw lines” around appropriate involvement from a partner,²⁵ (p. 117). The focus on different types of tracking technologies is a crucial difference here. Tracking is an extension of social practises within households in this study, compared to tracking care within families, specifically through blood pressure and weight concerns in Will et al.’s²⁵ study. In this study, contrastingly, the experience of tracking enabled new ways to understand health, with broader implications for the household. One reason for this may be the household setting with less emphasis on clinical and medical health practices.¹⁰ With the emphasis on family structures in previous studies^{25,17,32}, tracking transference is also evident here in cohabiting households:

We took the piss a bit at first He [housemate] was wearing his Garmin all day: when he was in bed, and when he had dates over to stay the night [...] but last summer my dad had a health scare and I was scared about the state of my fitness [...] because I knew he [housemate] was self-tracking, I started to rely on him for information about diet, food and fitness. I’ve just started training with him properly and we compete as housemates. (H4. m23, US)

While tracking might be noticed for its mundane data capture, the experiences in H4 reveal how tracking behaviour by a non-family household member was an incentive

to take action concerning health.⁴⁰ Adding to the evidence that tracking health behaviour transfer was a positive experience outside of intimate couple relationships. The self-reported nature of health data effectively allowed members in H5 to understand how health information relates to the intimate and personal space of the household. The tone here contrasts the close intimacies of other households, with humour helping to establish rapport and engagement with health data.

For new trackers, it was crucial to see everyday monitoring behaviour in close proximity. This pushed people to alter their behaviour in addition to noticing a difference in the health of others.

My daughter [aged 34] enjoys her running so well. She’s such a strong young woman in herself. I can see that her confidence has shifted, and how she first places her health and diet. When she has a PB [personal best], she tells me. It cannot be easy for her to still be living at home, but I trust her to know her health and to learn how we can be fit for each other. I’ve enjoyed tracking things together. (H5. f56, France)

Watson et al.⁴¹ further highlight the complexities and relational pressures in which social intimacies might be sustained in their study of sociality during the COVID-19 crisis. For example, H4 anticipated a ‘bad’ health outcome if they continued to smoke and had begun considering tracking elements to provide new motivations to ‘nudge’ them towards healthier behaviours. Therefore, in this study and others, households serve as critical spaces that shape people’s health behaviours and identities, potentially mitigating the intense scrutiny associated with sharing health data and providing new opportunities for reflection.²³

Co-tracking and caring

If attention to health data was a catalyst for new users to become interested in tracking, so too was the desire for body transformation. Weight loss, muscle definition, feeling healthy and strong and the desire to achieve fitness goals were frequently mentioned as ways in which new trackers modelled their goals on experienced tracker

behaviour. While conversations about ‘being healthy’ supported the initial transference of tracking, it was the collective sense of change that allowed co-tracking practices to become apparent. The experience of siblings in H6 exemplify this:

I’ve been self-tracking for a number of years now since I was at university. I recently moved back home to look for a job and both my parents and my sister have become interested in fitness and talking to me about what kinds of apps to use and so on. I have a daily routine that I stick to [...] before college I was pretty average, but I have made some big gains – like I am up by 15kg and I’ve filled out [...] Since I’ve been home, the change in my sister over the last year has been incredible. She was quite shy, and her confidence has blossomed. We talk about our [fitness] achievements daily and share these on our social media. (H6. m, 24, US)

In the last few years, Nick has changed a lot [...] When he was home, I saw how he took the first steps on his fitness and nutrition and stuff like that [...] Last year, I had some horrible high-school experiences and got into a rut somehow. Looking at Nick’s health helped me to understand about my fitness and it has gotten us closer together. I have a lot more confidence and get a lot of positive reactions when I share fitness posts on my Instagram [...] (H6. f, 20, US)

The siblings’ perspectives demonstrate a ‘ripple effect’ in increasing family awareness about health via technology.²² Tracking became part of the ‘natural conversation’ within their household, sharing experiences about health and forming new and profound ways of managing fitness and expressing care for each other. The reference to ‘big gains’ suggests the performative quality of some of his tracking outcomes¹² but is also connected to a desire for other household members to gain confidence. Aesthetic goals were more strongly evident from households in the UK, Spain and the United States (H10, H6, H4 and H3). This theme’s prominence may reflect the rapport established with those households during the interview, during which this type of information was more readily shared. This may also indicate that these households participated in a more goal-specific set of health activities centred on weight loss. Three of these households (H10, H6 and H4) had members in their late teens and early 20s, when (we might speculate) appearance concerns are more pronounced as they enter adulthood.⁴²

In H6, the communicative value of tracking is paramount. A combination of their peer relationship and living together helped to situate their personal needs into a broader set of health and caring activities.^{17,23} Co-tracking formed a vital part of the siblings’ relationship.

Early in the interview exchanges, the siblings talked of co-tracking practices, sharing data to feel ‘closer together’. While there are performative aspects too (sharing ‘a lot’ on social media), both engage in tracking to facilitate new forms of health behaviour embedded within the social practice.⁵

Moreover, the performative aspects may reflect the popularity of fitness-sharing on social media among young people^{11,13} rather than a self-indulgent sensibility. It was observed in later interviews with H6 how the entire family is ‘super fit now’, indicating a personal level of concern for and active engagement with the family’s health within the household. In line with Ferdous et al.’s²⁸ observations, personal advancement was made possible by data comparison with other trackers. Co-tracking, thus, helped loved ones to add value to existing relationships. There is a new dimension to tracking here where co-tracking offers new caring opportunities shared within households. This perspective contrasted with the individualistic and competitive motivation for tracking. Indeed, it was observable in the care characteristics within the household through repeated tracking performance and practices.

The symbolic meanings attached to technologies by how we might care for each other were evident in the construct of co-tracking. Co-habiting partners in H7 discussed adopting a new regime in the aftermath of redundancy:

My partner went through redundancy and she was really suffering badly from mental health and physical health issues as a result. Although we were good financially, it was unsettling. I’m the main user of health apps in the family and during this time I purchased us both a smartwatch. I remember getting up one morning and she had started reviewing her health data, and she wanted me to understand this. It was great to see her improve and get involved in life again. We needed to come together like that. (H7. f, 54, France)

The smartwatch was symbolic of an extension of care, reinforcing Yamashita et al.’s²⁷ shift to more nuanced accounts of tracking and the complexities added with the involvement of intimate partners and caregivers. Similarly to H6, the motivation to share health data and engage in co-tracking activities reflected a desire to look after and care for each other. Further scrutiny is needed to determine the appropriate levels of tracking involvement by close family members.¹⁷ For the members of H6 and H7, we might conclude that as they are younger than the adults in Will et al.’s study, there are fewer complex needs that could add layers of concern around tracking. The difference in national healthcare systems is relevant for H6 and H7, with H6 in the United States being a privatised system (high on uncertainty) and H7 in France being a universal healthcare system financed mainly by government health

insurance. H6 expressly mentions long-term goals and change. H7's use of self-tracking was initially limited to providing support following a major life event.¹⁴

Other factors influencing these reactions include the participation of experienced trackers, who helped address concerns for new trackers within existing social structures and enhanced household experiences.²⁸ For example, the social affordance of the household was significant in determining the conditions of self-tracking in H8.

Since I was at university, I've always run and recorded my times and my changes in pace. My training has become something we talk about as a family. Then it's become something to do together [...]I'm competing against people I live with and I see every day. This has radically changed how I train. I am more committed and stricter with my diet and much more aware of the effect on my health because of the people around me. **(H8. m, 34, Italy)**

H8 discussed how they would use tracking to 'check-in' on each other. Including how m34's mother would track the data on his Strava account to ensure he was meeting his health goals. This study shows a significant correlation between intergenerational health prompts and support for improving household awareness.²² Indeed, the intersection of age, ageing and technology raises some intriguing tracking questions, which will be addressed in the final section.

Making sense of health change

While previous research has demonstrated that trackers benefit from materialistic incentives such as reduced health insurance premiums or free goods and services,^{24,43} making sense of and maintaining health change within the household was the primary reason for participants in this study to continue tracking. Using self-tracking, households established whole new routines for maintaining health regimens:

Traditionally, I've been the one to shop and cook all meals, and now we're sharing a lot about healthy recipes and planning special occasions so that we can maintain a healthy lifestyle. We cut sugar, absolutely [...] I don't think we're too strict with our diet and we track what we eat along with what kinds of exercise we've completed [...] We don't buy any risky foods. **(H9. f, 48, US)**

You can't keep your old bad habits if you want to change. That's what I told my family, you're going to change your lifestyle, and you need to look at your wellbeing. These small steps will help us prepare for fitness regimens at different times in our lives and who we want to be. **(H10. f, 40, Spain)**

The members in H9 value the 'collective' decisions about diet and exercise made inside the home and devote considerable time and effort to recording meals and exercise regimens.²³ In comparison, the validation of change in H10 is more direct, with a direct statement to the family who was 'told' they were 'going to change' and a strong emphasis on the importance of maintaining one's health. There is undoubtedly additional work inside H10 in considering the long-term implications of tracking (similar to H6 earlier). Within the H9 and H10 family settings, self-tracking takes a different shape than in prior studies, which placed a greater emphasis on short-term or episodic health data profiling.^{2,19,44} The emphasis on food to achieve longer-term health goals may reflect the participants' life stage and, consequently, the roles of providers and caregivers in these families. The participants in H9 described how tracking encounters resulted in a robust set of motives for change sustainability:

My mom had a rough time when my dad left us. She's extremely protective of my sister and me [...] I'm a great advocate of training and playing semi-pro soccer. I was self-tracking to maintain my fitness level, so I didn't get bored with training when it was out of season. My mom trains with me and my sister everyday now, so she's strict about our diet. I'm so proud of her and the opportunities she's offering us. **(H9. m, 21, US)**

For the experienced tracker in H9, interest in self-tracking was initially separate from the rest of the family and contrasted with some of the cynicism in the literature in the context of an increasingly influential data culture and autonomous healthcare systems.^{30,45} H9 discussed tracking as an essential part of the shared sense-making journey.

- m21: Mom started getting too strict with her calorie counting.
- f48: Because I wanted to lose a bit of my 'mom weight'.
- f31: Mom, you look great. You don't need to lose any weight.
- [laughter]
- f48: Ok, ok, so it took a while to shift my mindset away from short-term gains and weight goals [...] I think it's important us being together, doing this together [...] being able to talk openly about our health. You don't get that in every family. We never ever talk about health with my parents – oh my god, they're totally turned off.
- f31: Mom, I'm proud of what we've achieved.

The response to concerns about weight demonstrates the family's health validation while making fun of the aesthetic

tracking goal. The use of humour shows family closeness and pride. I believe the conversation reassured each member about their fitness level while also allowing them to briefly raise ongoing concerns about not being able to 'talk about health'. In their study, Will et al. describe the interview as a 'location for negotiating tracking as care'²⁵ (p. 119). The interview's tone changed when f48 mentioned not discussing her health with her parents. While caring is evident here, so is intergenerational conflict over the actions of other family members.

In other households, taking pride in health opened up discussion about trust in tracking:

I know it might be silly to really trust an app, but I enjoy control of my health and learn new things about fitness that I can share with my family. (H11. m,31, Spain).

Home connections aided in alleviating the suspicion associated with health data surveillance. Again, the interview's digital format enabled this discussion, plus contemplation on the 'dark side' of tracking.³⁰ In H12, participants discussed the importance of sharing health data across generations:

It has been amazing to see her (Grandmother, f,98) light up during our walks together. She wasn't so keen to track what she was up to, saying that it was pointless, and she didn't trust the technology. Now we're sharing about our steps and her favourite is the sleep data. (H12. f,31, UK)

Though distrust of 'the technology' was discussed, well-being investment was crucial in abating such concerns. In reply to her granddaughter, (f98) talked about a 'renewed sense of closeness' with family. These arrangements contrast with Loe's²⁶ findings, whose older female participants desired greater autonomy by utilising technology's agential capacities to navigate health challenges independently of family members. Where a large proportion of Loe's participants were living alone, they did not have the opportunity to negotiate health information and support structures on a more intimate level.

Far from seeing tracking data as a cause for concern, participants did not feel anxious about sharing their data and took pride in sharing their achievements. One explanation could be, in contrast to the United States with privatised healthcare, for European nations and in the UK, there is a lower prevalence of commercial organisations using tracking to incentivise commercial health plans.^{24,43} Although awareness of commercial aspects of tracking was evident, sense-making was primarily linked to social structures to inform behaviour, as in H13:

It's odd to be so conditioned to your health and rely on technology to tell you what to do. 'Being watched by the Gods', as they say, reminding me that I can't do anything 'bad' but

at the same time I want to indulge I was overweight for a long, long, long time and I have a constant anxiety about going back to that. (H13. m, 32, UK)

In H13, doing anything 'bad' might invalidate future health choices. Tracking is a practise forming part of what Nettleton and Green⁵ observe as 'embodied and embedded social action,' and it is clearly demonstrated in this study in the social and material environment of the home where health and being healthy derive meaning.

Discussion and study limitations

Trackers will become more diverse, addressing different health concerns, as tracking technologies become more affordable and internet and smartphone infrastructures more widely available. Like those in this study, many more trackers are not locked into aesthetic online health communities and do not belong to any formal health movement.^{22,40} The attention to the consistency of health change within these households helped temper concerns raised in other studies about how individuals are conditioned by their health data.¹² The consensus amongst participants was improved family caring and other household caregiving situations.²⁷ Participants repeatedly spoke about new ways to focus on maintaining health within the home, taking the focus away from performative social media sharing.^{1,11} Such techniques can help explain contradictory accounts of practise, such as the need to be on social media while criticising its content. This viewpoint was discussed in the context to share and stay connected, which has become an expected part of everyday digital culture.

The lives of these trackers suggest that responses to questions about health responsibility should be less individualistic and include co-tracking social practises. While public policy rhetoric emphasises the cost-effectiveness of preventative health measures for individuals, opportunities to care for loved ones in the more intimate household setting resulted in sustained positive health behaviour change.⁴¹ More fundamentally, in outlining the possibilities for tracking practise and identifying the conditions for health change, we must go beyond simply noting that tracking is about self-monitoring and begin incorporating the structural social and material conditions.^{21,28,31}

The study has obtained novel findings on health behaviour as social practice and the dynamics of tracking within households, but it has limitations. All households were primarily English-speaking, potentially limiting the ability of those using their second language to engage in more organic and tangential discussions during interviews. Participants' awareness of the joint interview setting is likely to have encouraged more performative interactions and conversations, with some of the more negative aspects of tracking perhaps glossed over – evident in H9 in the context of the hidden and tense set of practices

around health. Relatedly, some of the experienced trackers were dominant forces during interviews, necessitating talking space for the new trackers to contribute. This was accomplished by introducing new talking points and exchanging personal tracking experiences. Further, I am curious how my experiences influenced the interviews: my personal tracking experiences (e.g. data on chronic pain) made conversations more candid, and the shared nature of our reflections was described as ‘reassuring’ by participants and stimulated interest in the study’s findings. Finally, the study reinforces the privileged characteristics of trackers living in cities with ubiquitous access to technology.

Conclusion

This study contributes to research exploring the communicative value of self-tracking within social groups. Households can teach us how tracking can open up conversations about health, further scrutinise health technologies within the home as potential instruments of control; and identify ways in which health behaviours are meaningfully constructed and sustained. The value of identifying social practice in tracking research is that it recognises combinations of behaviour and repeated performances of certain practices.

The household dynamic afforded longer-term opportunities to invest in health practices for these trackers. Therefore, the true tracking is not of the health data but of the accounts of daily check-ins, of new opportunities for care and the social relationships within the household that motivated and underpinned embodied social practice.

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