

Marketing of surveillance technology in three ageing countries

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Abstract

Purpose – The purpose of this paper is to review marketing materials of surveillance products for people with dementia and their carers in three ageing countries, as part of a dementia-technology media analysis.

Design/methodology/approach – An online environmental scan was conducted using search terms for surveillance technologies (STs) and dementia through a Google search focussed on the UK, Sweden and the Netherlands. Data were extracted on the products' and websites' marketing messages from consumer and marketer perspectives.

Findings – Information was gathered for 382 product websites, of which 242 met eligibility criteria. The majority of products come from the UK. In the UK and Sweden, the companies behind the websites appeared to be mainly "cottage industries" which focus on selling ST. In contrast, sellers in the Netherlands included a more balanced mixture of small, medium and large companies. In all three countries, the website messaging focussed on the need to manage safety concerns, without considering privacy or consent.

Social implications – Contrary to the perception of future dependence on technology, the ST sector seems to be a niche market. The media messages, equating people with dementia with animals and children, are at odds with initiatives that strive for dignity and dementia friendliness.

Originality/value – No previous study is known to have explored media messages from websites that market ST for people with dementia.

Keywords Safety, Carers, Dementia, Surveillance, Marketing, Technology, Review, Environmental scan, Cottage industries

Paper type Research paper

Introduction

The use of technology designed to help ageing populations, especially those with dementia, is rising in social importance. The EU identifies dementia as a societal challenge and highlights the necessity for research on technology-related care (European Commission, 2015; European Parliament, 2011). Technology is perceived as promising, and significant investments have been made to advance older people's access to, and uptake of, technological products (European Commission, 2007; European Commission, 2015). On a national level, social policies and market priorities seek to facilitate "ageing in place" through the use of technology (Kubitschke *et al.*, 2010; van Hoof *et al.*, 2010) which delays institutionalisation; encourages people to remain in their own home in later life (Brittain *et al.*, 2010); saves costs (Duff and Dolphin, 2007) and reduces caregiver burden (McHugh *et al.*, 2012). Accordingly, technology, as part of healthcare delivery for people living with dementia, is expected to grow in Europe (Kubitschke *et al.*, 2010; Dutta *et al.*, 2015; World Health Organization, 2012; van Hoof *et al.*, 2010; European Parliamentary Research Service, 2016).

Surveillance technology

Surveillance technologies (STs) are devices which monitor movements with the intention to cost-effectively support health and independence (Woolrych *et al.*, 2013). ST has particular relevance for family carers of people with dementia (Berridge *et al.*, 2014). ST can be generally described as comprising "monitoring systems that can allow for 24-hour supervision by carers"

(Kenner, 2008), with specific technologies including, but not limited to: monitoring devices, personal and social alarms, telecare, electric tagging and tracking, and global positioning system (Landau and Werner, 2012; Percival and Hanson, 2006; Robinson *et al.*, 2007; Niemeijer, 2015; Mental Welfare Commission for Scotland, 2005). ST can be used to monitor people with dementia so that a carer can intervene as appropriate to increase safety (Niemeijer, 2015).

“Ageing in place” in the UK, Sweden and the Netherlands

In common with many other nations, the UK (UK), Sweden (SWE) and the Netherlands (NL) all have ageing populations. Projections show that life expectancy for 65-year olds is similar in each of these countries (UK 17.9, NL 18.2, SWE 19.8), and the proportion of older adults who live alone is also similar (UK 32 per cent, NL 32.2 per cent, SWE 39 per cent) (Eurostat, 2015; Office for National Statistics, 2017). As these societies age, the number of vulnerable people requiring long-term care also increases (Berridge *et al.*, 2014; Niemeijer, 2015). A European study found a variety of reasons for family carers seeking to place the person living with dementia whom they care for in a care home, with common reasons including care dependency and caregiver burden (Afram *et al.*, 2014). The use of technology has been identified as a potential solution to help carers and people with dementia to remain living in their own home, lighten the care burden and to support caregiving (Berridge *et al.*, 2014; Kubitschke *et al.*, 2010; Bharucha *et al.*, 2009; Cahill *et al.*, 2007; Kenner, 2008; Pollack, 2005; Topo, 2009).

In the UK, the government ageing agenda has an eye to cost (Duijnste, 1992; Goins *et al.*, 2002; Kodner, 2003; Walker, 2008). The UK National Health Service and Community Care Act (1990) highlighted the need to incorporate market forces in the delivery of services that facilitate “ageing in place” as opposed to more institutionalised care settings (Welsh Assembly Government & Alzheimer Society, 2011; Department of Health, 2006, 2009; Department of Health Social Services and Public Safety, 2011; Phillipson, 1998; The Scottish Government, 2010). Despite the differences in healthcare systems, the Netherlands and Sweden also have national health and social policies that promote the move from institutional care to “ageing in place” (Kümpers, 2005; Wimo *et al.*, 1999). The capacity to leverage technology for increased well-being is measured by the “Networked Readiness Index”, which is similar to those in the UK, Sweden and the Netherlands (Dutta *et al.*, 2015).

Marketing ST

Marketers have begun to recognise the importance of ST as a market and, accordingly, there has been an increase in numbers of such technological products being sold, particularly through online platforms (Rialle *et al.*, 2008; Robinson, *et al.*, 2009; Wan, *et al.*, 2016). The knowledge base on how ST products for dementia are marketed is very limited, with little beyond the work of Kenner (2008) who describes an “aging enterprise” which constitutes technologies as part of a privatised consumer healthcare trend (p. 262); a trend which might not be influenced by older adults, but rather by other external pressures. These pressures include discourses that influence our understanding about diseases, as well as those affected by them, and which are often framed and negotiated through media messages (Clarke, 2006; Collin and Hughes, 2011; Lyons, 2000; Seale, 2003; Williamson and Skinner, 2011). Clarke (2006) described the importance of recognising the relations between media, disease representations and the interests of powerful organisations who play on underlying fears to market products that offer a solution (Fuller, 1998). Clarke (2006) called for a “dementia media analysis” (Miller *et al.*, 2012; Kleebpung, 2010) to identify and assess what cultural stereotypes and values underlie the media messages that describe and portray people with dementia.

Aim

The aims of this paper are to: investigate the online market for surveillance products for people with dementia in three comparable, ageing countries (UK, SWE and NL), and to describe the marketers’ characteristics; and to respond to the call for dementia media analysis by exploring the marketing messages in online advertisements for STs for people with dementia.

Method

Environmental scan

To identify surveillance products used in dementia care, and explore media messaging used by marketers, an environmental scan methodology was used, adapted from a procedure of Choo and colleagues (Choo and Auster, 1993; Choo, 1999, 2001). Environmental scanning is an information viewing, seeking and organisational learning strategy (Aguilar, 1967; Choo and Auster, 1993; Choo, 2001) through which companies get to “know” the market in which they are situated and are able to effectively respond (Choo and Auster, 1993). Originating in a company context, healthcare researchers have started using environmental scans (Graham *et al.*, 2008); however, there is not, as yet, a standardised approach to environmental scanning (Choo and Auster, 1993; Choo, 1999, 2001). A common approach is to seek answers to a set of pre-defined questions regarding the product of interest (Graham *et al.*, 2008).

To provide information on the ST market for people with dementia and their carers, the environmental scan detailed in this paper entailed: an online product search; selection of eligible products through application of pre-defined eligibility criteria; extraction of product data and marketing messages through answering a set of questions for each eligible product; and data synthesis through both qualitative and quantitative means.

Search strategy

An internet search for surveillance products was carried out using the Google search engine. Search terms and their synonyms are shown in English in Table I. Each search term was translated into Dutch and Swedish for product searches in the Netherlands and Sweden, respectively (translated search terms available on request).

Eligibility criteria

The product web descriptions identified in the online search were assessed for eligibility using pre-defined eligibility criteria.

The inclusion criteria were:

- technological device that tracks and/or alerts;
- marketing makes reference to dementia, Alzheimer’s or similar;
- product can be used by a person with dementia or a carer;
- marketing website based in the Netherlands, UK or Sweden; and
- marketing of the product targets care homes, institutions, people with dementia or carers.

Exclusion criteria were:

- “non-technical” products;
- manufacturer not involved in retail;
- traders between the manufacturer and marketing website;

Table I Search terms (English)

Search word	Synonyms
Surveillance technology	Surveillance technologies, devices, products, assistive, GPS, tracking, tagging, tracker, track, monitor, locate, locator
Dementia	Alzheimer, Alzheimer’s, person with dementia, people with dementia
Carer	informal caregiver, caregiver, Family caregiver, family carer
UK	UK, England, Great Britain
AND [...]OR	Safety, independence, empowerment, risk, danger, alert, peace of mind, consent, informed consent

- website designers; and
- webpages marketing second-hand, previously used, or previously owned goods.

Three researchers (English, Dutch and Swedish) were involved in developing the search criteria and screening the websites for information. Every website with at least two of the keywords was selected for further analysis. The researchers placed field notes in the data set, and provided descriptions of what was portrayed on websites. When a product was entered, the reviewer would screen for duplicates by the excel search function in the data set. If a duplicate was found, the new product would not be entered. However, there was a possibility that similar products were displayed by alternative websites under different circumstances. Therefore, the reviewer screened again the data set to remove repetition and irrelevant products (e.g. non-technological products sold on Amazon). This removal was carried out twice after the exclusion criteria. Duplicates of products were included only if they were provided by alternative websites using different marketing techniques.

Data extraction

A draft data extraction tool was devised, based on domains relevant to characteristics of products and marketers, and the anticipated information needs of potential users. The draft tool was validated through discussion with researchers from a “dementia and technology network” (INDUCT) and piloted by the first author after which additional subcategories (market share and growth) were added. The final data extraction tool covered nine domains, extracting information on: identification, marketer characteristics, product functional availability, target market, sales, safety, privacy and portrayals (Table II).

The extracted data were entered into an excel spreadsheet, in formats suitable for the nature of the data. Data types included nominal, categorical, numerical and qualitative formats (Table II). Qualitative data included quotations from websites. Data were collected over a period of one year, between October 2016 and October 2017, with data regarding product prices gathered on the same day in August 2017.

Table II Data extraction items and data types

Domain	Item	Data type
1 Identifiers	Product name	Nominal
	Company/organisation name	Nominal
2 Marketer characteristics	Organisation size	Categorical (cottage industry, small, small-medium, medium, large)
	Market share/growth	Numerical
3 Product function	Main function	Categorical (track, alarm, track and alarm)
	Additional information	Qualitative
4 Availability	Availability in Sweden, UK, the Netherlands?	Categorical (yes/no)
	Country of product origin	Categorical (Sweden, UK, the Netherlands, Other)
	Availability online/in store	Categorical (online, in store, both, other)
5 Target market	Target purchasers	Categorical (consumer, care home, company, other)
	Target end users	Categorical (person with dementia, carer, unclear)
6 Sales	Price ^a	Numerical
	Additional information ^b	Qualitative
7 Safety	Safety messaging	Categorical (user-activated alert, user alerted, alerts carer, alerts both, other)
	Additional explanation	Qualitative
8 Privacy	Access to data	Categorical (user only, carer only, user and carer, 3rd party, other)
	Additional explanation	Qualitative
9 Portrayals	Presence of portrayals	Categorical (yes/no)
	Keywords	Nominal

Notes: ^aIf the origin of a product was unclear, it was classified according to the country in which it could be purchased; ^bpurchase price excluded monthly fees or shipping costs

When websites did not provide information about the marketer that provided the product (e.g. size of marketer, country origin, number of employees), additional public-domain information was gathered online, for example, from LinkedIn. Classification of the size of the marketing organisation was based on the number of employees within that organisation, with “cottage industry” defined as “a small-scale informally organized industry run from home” (Investopedia, 2017) and operationalised as “online web shop indicative of; its location being a private house, a private phone number communicated, or listed with one employee usually described as the owner”. Small-scale companies were defined as having a maximum of 10 employees; small-medium between 10 and 50, medium-large between 50 and 200; and large more than 200 employees.

Data analysis

Price conversions were made into pounds and the Excel “AVERAGE” function was used for calculating the mean purchase prices. The “COUNTIF” function was used to summarise the frequency of specific words in nominal data (e.g. “safety”). For categorical items, the SUM function was used.

Findings

In total, 382 products were identified online. After the application of the eligibility criteria and removal of duplicates, 242 products remained. Reasons for exclusion included: being “non-technical” products, e.g. identification bracelets without tracking facility; and networking facility without detection monitors (e.g. for temperature, light or fire[1]). In a descending order of frequency, the identified products originated from: the UK, Australia, the USA, Sweden and the Netherlands.

Price

The purchase price of ST displayed ranges from £0 to £654 in the three countries, with similar products priced differently by different providers. Thirteen products were under £10. The headline price displayed often included extras (i.e. shipping costs, monthly fees). However, the mean price is unknown because many websites neither displayed prices, nor included extras.

Marketers

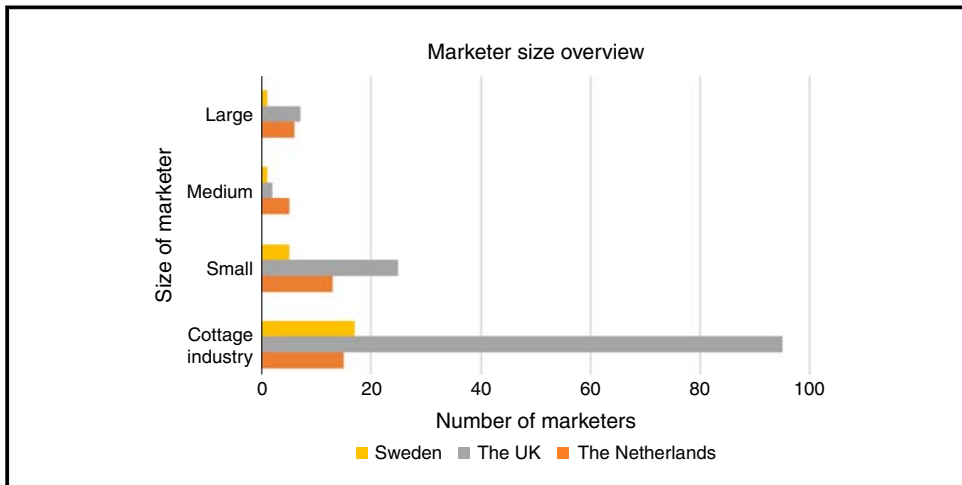
Figure 1 displays the response to the question “what is the size of the marketer”. The “cottage industry” category was the largest single category in all three countries, marketing through single-handed online web shops or companies with up to ten employees. Whereas the majority of ST marketers in the UK and Sweden were cottage industries, there was a different pattern in the Netherlands where there was more balance across the size of a company. Many marketers in the data set made unsubstantiated claims to be the market leader.

Safety

In scanning the web descriptions for “what is mainly communicated about what the product does for safety”, two main types of products were elicited; products that “detect” and those that “alert”. The latter required that the person with dementia should push an alert button in case of emergency, or that somehow the carer was made aware of an emergency, although there was generally scant detail on how, when, where or to whom alerts would be raised. Most of the detectors did not send notifications. However, some products both detected and alerted, for example, a tracker watch that could notify the carer with information about the recipients’ location and health status:

The [...] can act as both a locator for keys and bags or a tracking device for a loved one, to help keep them safe if they wander. Location tracker – cottage industry 1.

Figure 1 What is known about the size of the marketer?



Location finding may require the carer to access real-time monitoring on a computer or phone (Kenner, 2008; Mulvenna *et al.*, 2017):

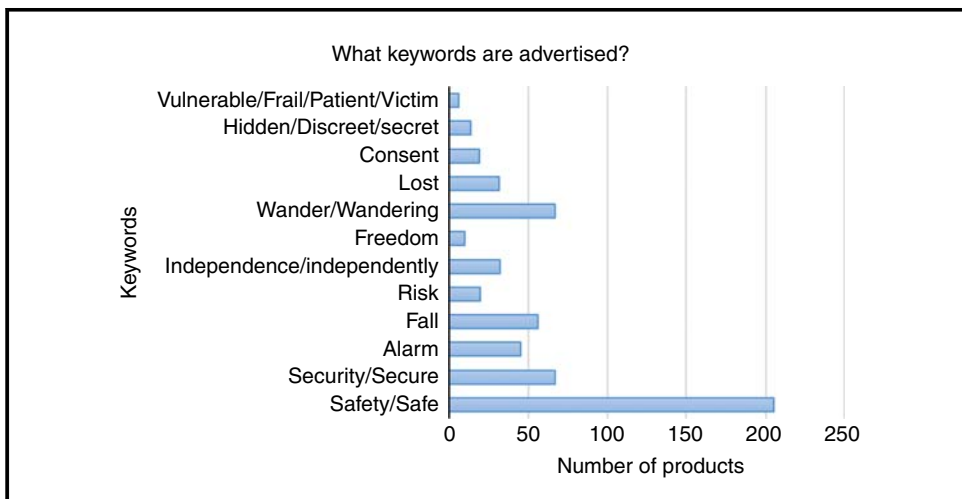
Ideal for monitoring: pets (e.g. dogs/cats/horses etc.), children/teenagers of all ages & abilities, vulnerable adults or frail elderly who may misuse the SOS & on/off buttons e.g. autism, Alzheimer's/ dementia sufferers. SOS button – cottage industry 2.

A minority of products were described as “preventing risk”; however, little or no explanation was provided on the mechanism for this.

Marketing by keywords and portrayals

Figure 2 illustrates the key descriptors used on websites. The greatest emphasis was on safety and security. The target problems were wandering, being lost and falls. There were differences in the diversity of keywords used in each of the three countries. In Sweden, keywords were descriptive of “spy” and “camera”. In the Netherlands, “sensor” was a common keyword. In the UK, words such as “ethics” and “consent” were used, which remarkably were not used in Sweden and the Netherlands. However, the word “consent” was not used in relation to having

Figure 2 The keywords advertised on providers' web descriptions



approval to use ST on a person with dementia. Instead, words such as “hidden”, “discreet” and “secret” were used, indicating covert surveillance.

Keywords were often accompanied by striking visuals of people with dementia, pets, children and possessions, either kept safe through ST use, or portrayals of being lost and harmed through non-use of ST. No major between-country differences were identified in visual portrayals.

Marketing target

There were no examples of marketing messages being targeted at people living with dementia. Instead, messages were aimed at families and carers, researchers or organisations involved in social care provision:

[...] provides an ideal way for families and caregivers to keep track of the people they love. Ideal for children [...] and seniors who value their independence. It's all about having peace of mind when you're not there with them. Location tracker – cottage industry 3.

Our customers include: dementia & Alzheimer's patients, stroke patients, local councils, care homes, schools, rehabilitation centers, dementia research groups, universities, cautious parents, travelers/ employers. Location tracker- cottage industry 4.

Privacy

Most products identified through the environmental scan required data sharing. The majority reported that carers would receive data, such as the location of the person with dementia. However, the second largest group involved data sharing with third parties (e.g. online cloud storage, alarm centre):

GPS personal alarm and its 24/7 response service lets you to carry on with your life knowing that there is help available at the press of a button. Location tracker with SOS button – Cottage industry 5.

Few STs reported that they provided the person with dementia with the data of their location or gave them instructions to guide them home, although this is an expressed need of people with dementia (Robinson *et al.*, 2009).

Discussion

This paper represents the first media analysis of online marketing of surveillance products for use with people with dementia. The key finding about marketers was that they were predominantly “cottage industries”, especially in the UK. In all three countries, the products being marketed were generally unsophisticated, able to either detect or alert, rather than both. Product descriptions emphasised safety and security, referencing risk situations such as wandering, falling or being lost, even where the product had no function that would prevent such risk. Advertising was targeted at carers or service providers, and not people with dementia. People with dementia were commonly portrayed as a “problem to be managed”, and the consideration of ethical issues (such as freedom to choose, consent and covert surveillance), whilst varying by country, was largely absent.

Niche market?

Huge investments have been made in the research and development of telehealth and telecare (Department of Health, 2008; Woolrych *et al.*, 2013), including the Whole System Demonstrator randomised controlled trial (Steventon *et al.*, 2013) and NHS testbeds such as “Technology Integrated Health Management for dementia” (Galea *et al.*, 2017). Yet, counter-intuitively, the majority of marketers identified in the environmental scan were “cottage industries” suggesting a “niche market”. This finding may be due to data collection being by product rather than by market share. The UK has a large home-care social alarms market, and is a significant adopter of telecare (Taylor, 2012; Goodwin, 2010; Kamalasekar, 2010; Gibson *et al.*, 2016). People who meet the eligibility standards for social care can access pendant alarms commissioned by local authorities (Berridge *et al.*, 2014). In Sweden, municipalities pay for alarm installation, and users contribute to this monthly service. There is a mix of public and private sector provision, with private

manufacturers financing much of the research and development into advanced telecare (Berridge *et al.*, 2014). In the Netherlands, the social security system, municipalities, well-being organisations and other home-care organisations provide alarms but payments are not standardised but vary according to who is using the technology, and for what purpose (Kubitschke *et al.*, 2010).

Not “fit for purpose”?

The number of websites claiming to be “market leader” suggests that a certain amount of creative licence was employed in advertising, and it was clear that many products had been re-purposed for the dementia market having originally been designed for a different use.

People living with dementia have expressed the need for technologies to have a simple user interface that can be tailored to individual needs and skills that allows people with dementia to engage in everyday activity and allows carers to have a break knowing that they will receive an alert if risk situations arise (Dixon, 2016), such as personalised notifications when the person with dementia leaves an area of safety (Phillips and Zhao, 1993; Schulz *et al.*, 2012; Seelman, 2012). However, the majority of identified products could either detect or alert, or required real-time monitoring.

Carers have concerns over false alarms (Dixon, 2016; Niemeijer, 2015; Hall *et al.*, 2017), privacy (Dixon, 2016), and data sharing with other parties (Robinson *et al.*, 2007; Fisk, 2015; Niemeijer, 2015) yet most products involved third parties such as call centres. Product descriptions included only limited information on functionality, and focussed instead on risks such as falling, wandering and getting lost. Whilst the promotion of ST products emphasises independence and safety (Kenner, 2008), this outcome has not necessarily been established through research (Futrell and Melillo, 2002; Hughes, 2008a, b; Marr, 1989; MWCS, 2005; Moffat, 2008; Nelson *et al.*, 2004; Niemeijer, 2015; Plastow, 2006; Robinson *et al.*, 2007; Sävenstedt *et al.*, 2006; Welsh *et al.*, 2003). Alerts from ST devices can signal when a fall happens, but do not avert the fall. The question posed by Niemeijer *et al.* (2015, p. 124) therefore remains unanswered: “[...] does ST actually offer more security?”

Throughout the EU, there is an expectation that businesses to not misrepresent their products when advertising to consumers (Collins, 2005; Van Boom, 2015). The “Unfair Commercial Practices” directive underpins the national advertising authorities in the UK, the Netherlands and Sweden (Advertising Standards Authority, 2018; Netherlands Enterprise Agency, 2018; Reklamombudsmannen, 2017). Consumers in the three countries can submit complaints about misleading advertisements, and companies are penalised where complaints are upheld. However, problematic practices are not always addressed (Van Boom, 2015), and in a media-rich online environment, consumers may not be aware of being misled (Van Boom, 2015; Mitra *et al.*, 2008).

Portrayals of dementia

The portrayal of people with dementia as a “problem to be managed” has been highlighted in previous research (Rozanova *et al.*, 2016). Placing people with dementia in the same class as wallets, keys, young children, dogs and/or prisoners is reminiscent of the “objectification” described in healthcare prior to the person-centred care movement, and is concordant with “abjection”, a defining feature of the social imaginary of the fourth age (Higgs and Gilleard, 2014). Marketers may have simply adapted existing advertising materials when dementia care was identified as a potential new market, assuming a lack of autonomy and decision-making capacity in line with the “empty shell” portrayal of dementia (Alzheimer Europe, 2013).

No marketing was directed at the person with dementia themselves, even though people in early stages of dementia may choose to engage with ST, for example, actively seeking out devices such as ST bracelets (Niemeijer, 2015), safe in the knowledge that they can be monitored by a “supportive other”. In these circumstances, ST can indeed help to maintain independence (Essén, 2008) and freedom (Dorrestijn and Verbeek, 2013), reflecting Foucault’s (1997) notion of freedom incorporating an individual’s conscious choice to use technology.

There was between-country discrepancy in use of terms such as “ethics” and “consent”, but none of the marketers considered personal choice of the person with dementia. Little information was provided on the acceptability of surveillance devices from the perspective of people with dementia.

Whilst most products are solely designed for, and used by, carers (Topo 2009; Demers *et al.*, 2009), this should not mean that the perspective of the person with dementia should be ignored. Some people may not like having an unfamiliar device attached to them (McShane *et al.*, 1998; Wan *et al.*, 2016) and may take off items such as pendants or bracelets. As Niemeijer *et al.* (2015) observed, when an ST bracelet is taken off, it no longer does its job. This may explain the emphasis on “hidden” devices for covert monitoring.

Media representations of dementia can influence interactions with people with dementia and make a difference to the utilisation of healthcare resources (Kessler and Schwender, 2012). Bodies now exist that review and counteract media messages. For example, the Glasgow Media Group (GMG) reviewed various claims used in the media (e.g. issues of war, representations of AIDS, communications of risk), and how this impacts negatively on certain groups (e.g. refugees, disabled people) (Briant *et al.*, 2011; Eldridge, 2000). Whilst members of the GMG have worked, and continue to work, to publicise their critiques (Eldridge, 2000), the unhelpful media coverage of dementia keeps on growing (Kessler and Schwender, 2012).

Implications for stakeholders

There are important implications from this study for a range of stakeholders including manufacturers, marketers, the media and researchers, in addition to all those living with dementia. Families, and people living with dementia themselves, should consider the power of media messaging which may present out-of-date and inappropriate technology as “tried and tested” or “market leading”, or may emphasise safety enhancement or risk reduction for products that provide only “after the event” alerts. Organisations that support people with dementia and their families could play a role in highlighting some of the decisions that need to be made, such as whether a product has the appropriate combination of detection and alerting functions to suit an individual’s particular circumstances. In addition, support organisations could also highlight ethical considerations of surveillance, for example, whether a person with dementia themselves is choosing to use technology, or whether carers are making choices in circumstances that do not yet require “best interests” decision making (for an illustration of carer fears over safety leading to autonomy restriction, see Graneheim *et al.*, 2001). Manufacturers and marketers should pay closer attention to the potential market of people in the early stages of dementia who can express their own needs and preferences. Furthermore, marketers and the media should be made aware of the potential for stigma exacerbation from media messages that objectify people with dementia.

Conclusion

This paper draws attention to an emerging issue of ST for people with dementia. The marketing of ST does not take into consideration the needs of people with dementia themselves. The marketing of STs raises issues of rights, autonomy, dignity, privacy and consent but all too often the marketers’ messages run counter to the maintenance of dignity in later life.

Note

1. Detection monitors that raise alerts are used to manage potential risk situations, for example, when a person with dementia continues to use their own kitchen but is at risk of causing a fire by forgetting to turn off the gas to the stove.

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