

## Towards agency in older adult-caregiver relationships: Lessons learnt from a care home digital radio project in Japan

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Keywords: Web radio, older adults, critical media practice, hospital radio, internal communication

### 1. Introduction

Until recently in Japan, it was the responsibility of the family, particularly women, to care for the elderly. As women have become more professionally engaged, more senior citizens have moved into nursing homes, a change that has limited their ability to socially and civically participate. In studies about older adults and media in Japan, lot of attention has been paid to the development of ICT tools for caregiving or monitoring, however, few studies focus on how caregivers manage older residents' communication challenges.

In order to speak to this literature gap, this study draws on findings from an action research project employing a web radio modelled on an old style hospital radio<sup>1</sup> in the United Kingdom. There, it has been positively assessed for the fact that through requests and the submission of messages, patients felt recognized as individuals and could engage in communication with healthcare personnel through the radio programme. In this way, those patients prone to feeling isolated could gain a sense of solidarity (HBA, 2016, Ogawa, 2018). Our experiment conducted at a care home in Fukui, Japan echoes many other studies on the social positioning of care home residents, which account increasing isolation (e.g. Brown, 2018; ter Voort et al., 2015). Some residents were hesitant to join events or talk to other residents simply because they thought of them as strangers. Older male residents had a particular tendency to become withdrawn from those living around them. More active residents were also reluctant to socialize with those that require greater amounts of care and attention.

### 2. Method

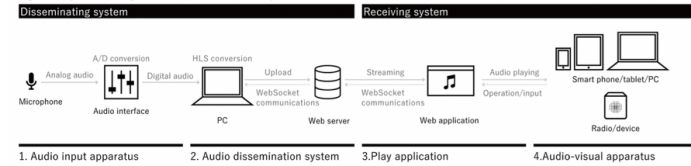
Concerns about social isolation have incited a host of ICT and social interventions targeted at older individuals (Mikkelsen et al., 2019; Chen and Schulz, 2016). In this case, I consider how intervention work in residential care can be managed to promote communicative agency among residents. In particular, I draw attention to the importance of positioning caregivers and residents as members of the same community. We adopted an action research method and an approach of "critical media practice (Mizukoshi, 2007)," which considers the latent and potential aspects of media. We experimentally conducted a Wi-Fi based radio (audio) programmes in a care home in Fukui in September 2018<sup>3</sup>. In these activities, the focus was placed on whether passive older adults (in the 80-90 years range) were interested in event participation through the radio<sup>4</sup>. During the programmes, we observed three older participants in their rooms listening to the radio. In addition, by

conducting a short survey and interviews with these participants and the care staff, we examined whether individuals who are not very interested in regular events held in the facility were interested in event participation through the radio, and whether such an intervention can stimulate social interaction and friendship between residents.

### 2-1. System

Initially, we had envisaged a system that employed low power radio waves, but emitting radio waves in an entire building made of reinforced concrete is difficult based on Japan's Broadcasting Act. Since the facility had no wireless LAN, access points (hereinafter, AP) were installed on each floor, after which we broadcasted the same SSID to each AP, and moreover, aimed at expanded coverage with a wireless LAN repeater. The audio transmission system that employs web technology (hereinafter, web radio) is chiefly composed of the following four apparatuses (Figure 1): an audio input apparatus, an audio dissemination system, a play application, and an audio-visual apparatus.

Figure 1: System Configuration. Care Home Radio System.



### 2-2. Device

In order to engage passive residents in the events held in the care home, three participants that were usually confined to their rooms were given a simple device developed using a Raspberry Pi chip and a 3D printed case from which they could tune in to the radio programme. We designed the device as a user-friendly interface with a large design catered to the needs of older adults, who often have limited hand dexterity and tend to lose things. In addition, the radio was designed by eliminating the power button and reducing the number of operation buttons, and configuring it such that the power could be turned on with just the volume button.



In order to include an element of interactivity and to make listeners feel like they are communicating with others, a feedback button named the "Like!" button was installed on the device. We aimed to create a system in which the audience is not just watching the programme passively but rather has the feeling of participating in it. When someone in the audience presses the button, a notification is provided to the broadcaster that the button has been pressed<sup>4</sup>.

## 2-3. Programmes



The radio programme was designed to promote communication between staff and residents, and among residents themselves. Care givers were planning to hold an awards ceremony, originally scheduled to be held on Respect for the Aged Day by the care home. In this regular event, residents gather at the banquet room and caregivers bestow awards on each resident with some warm comments. This goes on for a couple of hours. We redesigned the ceremony into a radio programme. In the programme, we added

two new segments to the awards ceremony which aimed to foster communication and interaction: 1) interviews of residents who were reaching a milestone age in the current year along with a chorus (based on his/her song request), and 2) a bidirectional segment for deepening mutual understanding with the caregivers.



This second segment involved a quiz programme that introduced caregivers' private hobby or pets. This aimed to give opportunities for conversation between older residents and caregivers. In addition, we included a "phone in" style programme where residents gave advice to younger staff members on their problems. Older adults answered questions like "What should I do when it comes to filial piety?" and so on. This programme was also designed to reverse the dynamic

between residents and caregivers and invert relationships of giving and receiving care.

## 2-4. Listening Space

These programmes and the festivities were played on radio devices in three residents' rooms. In addition, we installed two radio devices in the elevator hall by which those who were not attending the event could also listen.

In this practical experiment, there was no existing wireless LAN available, and thus we had to prepare it on our own. During a site survey on the same day as the experiment, it



was found that the radio waves of the Wi-Fi adequately reached each floor, but when radio devices were installed in each room, poor communication occurred, caused by the wireless LAN. In this way, the radio signal was frequently interrupted, so listeners were sometimes confused. As for the device, all three participants placed the radio on their desk, together with a television remote control and books that had already been placed there.

## 3. Outcomes: From the questionnaire and interviews

### 3-1. Opinions of the older listeners

As for the three participants who listened to the radios in their rooms, we asked them if they understood how to use the radio and had them evaluate this with a 5 point scale. The average score was 3.6. The fact that they could not understand the reason why the radio signal was interrupted lowered the score. For the question "Did you enjoy it overall?", the assessment was positive with a score of 4.3. This enjoyability was related to a deeper understanding of caregivers and feeling of connection with other residents.

#### (1) Deeper understanding of caregivers

Two female listeners gave positive feedback on how the radio programme changed their perception of staff members. Mrs. A, a woman in her 70s, said the following about a staff member who served as a radio host: "I was able to see things about the staff at the facility that were different from what I was used to. I did not realize that she is such a pleasant person who laughs like that." Mrs. B, a woman in her 80s, explained, "When I heard the staff member of the facility talking about a resident, I could understand how she thought of the resident in question." The residents that participated in the banquet hall also found the quiz interesting and felt they were able to have a conversation starter with the staff member through the programme.

#### (2) Connection with the other residents

In addition, Mrs. B said about a resident who was interviewed during the programme that "Although I do not ordinarily speak to him or her, I thought of 5 or 6 people that it might be" and "I was surprised that Mrs. C, who rarely attends events, was there." It could be seen that she was listening while imagining in detail what the venue was like, in concert with the human relationships in the care home. Mrs. B gave a positive evaluation of the programme, saying "If I am bedridden and cannot attend an event, a radio that allows me to know what is happening there is very valuable, and I really want it to be introduced."

Although she usually refuses to attend events, she seemed to be connected with the community. In the same way, a caregiver was surprised to see that Mr. C, a 90-year-old man, was interested in the events broadcasted in the radio: "I learned that there was a person who ordinarily does not attend events but who was interested and listened to it on the radio in his own room. I realized that he was not completely uninterested in events." While Mr. C gave a score of 4 in response to the question of whether he could enjoy the contents of the programme overall, he only gave a "2. Not particularly," in response to the question of whether he wanted to participate in the future.

### 3-2. Opinions of the caregivers

Based on the questionnaire completed by the six caregivers who participated on the days in question, half of them assessed the programme positively, but the score in response to the question of whether they wanted to participate in the future was an average 3.3, and there were two staff members that responded "2. Not particularly."

In addition to responses such as "There is no time even for a sip of water", there were also comments that there were residents that did not fully enjoy the programme (two persons) or that the programme was difficult to understand for the residents. A staff member explained, "There were some people who could not understand when the speaker spoke too fast." Thus, more attention needs to be paid to those residents who are hard of hearing. In fact, the host, a staff member, said that it was difficult for her to see if the audience really caught what she was saying, let alone the radio listeners. In addition, it was also difficult for them to react with the "Like!" buttons, and this dismayed the listeners.

On the other hand, there were some positive feedbacks from the staff members. The chorus of the requested song was highly evaluated and thought to bring about a feeling of solidarity. Staff members said, "It was nice for everyone to sing together," and "It seemed residents liked the performance unlike karaoke (with only one person singing)." In addition, in the questionnaire survey, there were the following reactions: "I was surprised that persons with cognitive disorders could engage in the consultation without problems. I was amazed that a dialogue at that venue could be achieved instantaneously just by directing the microphone at them, even though they immediately forgot what had been said previously." It was also said that the act of directing a microphone at someone indicates "I want to hear from you." These staff members felt that using a microphone in the atmosphere of this event was able to stimulate participation from residents they felt usually could not participate.

### 4. Prospects

These findings show that a small scale radio system can support care home residents who are not willing to attend events because they find relationships with other residents or staff difficult feel more connected with the care home community. The participants mostly seemed to enjoy discovering unfamiliar characteristics of caregivers and other residents and enjoyed the programmes over the radio. Finally, I would like to consider some issues that were learnt from this experiment.

#### (1) Technostress --Between analogue and digital

While the participants found the radio devices easy to use, the technologies used in this project were sometimes inconsistent with the residents' usual media habits, preferences or technical skill level and this resulted in some exclusions or frustrations. When it comes to the problem of the signal strength of Wi-Fi, we provided an explanation for why the transmission sound was interrupted, but the audience members themselves tilted the radios on their own or took it over to the window and sought to correct the problem with the device as if it were regular radio waves.

As for the Like! button, which was provided with the intention of bidirectional connections, in reality this feature was not fully used. The participants said things like, "Can't the hosts hear my voice?" and "I want to convey that it is me". These participants were not accustomed to interactions like "Like!" on social media, and listening itself requires concentration. In addition, it is hard during the programme for the hosts to respond to the "Like!" button which has a time difference at the site of a public broadcast, so it might be that the residents felt no incentive to press a button for which a response cannot be obtained. Moreover, since there was a time difference between the audio in the event room and the other rooms due to the Wi-Fi casting, the listeners could not enjoy the laughter and songs at the same time. This made it hard for them to get the feeling of solidarity that comes from the production of truly synchronous communication.

#### (2) Towards better relationships between users and caregivers

Finally, this experiment showed that we need to rethink how and with whom we design these kinds of interventions. Some care staff seemed to feel excluded from the project design. Future work should integrate residents and care staff into all stages of the project design and in ways that overcome the traditional separation between these two groups. For those in residential care, relationships with care staff can be the most important. Where ICT and social interventions are now commonplace in care homes, it is important to consider the influences of interventions on resident-caregiver relationships as the power dynamic in these relationships could be a key factor in residents' sense of social agency.

#### Acknowledgement

This study was made possible by a research grant from the Okawa Foundation for Information and Telecommunications in 2018. We would like to express our gratitude for this.

#### Notes

1. Radio with only audio was thought easier for patients to listen to, and the use of such radios spread widely in the UK in the 1950s. Their use continues to the present day. In the original model, volunteers made rounds to the patients' rooms, meeting the residents and collecting song requests or messages for the hospital staff and family members. These songs and messages were then broadcasted using a wireless/wired radio from a small-scale studio set up inside the hospital.

2. The "Like!" button was proposed based on meetings in which it was said that the nurse call buttons were frequently used by hospital patients and nursing home residents when they were ill at ease or felt isolated. This may have originated in the fact that the nurse call button is the sole interface enabling communication for those in sick rooms. For a facility radio, responding to such unease should be included in future projects, so we suggest that a substitute might be achieved by installing a "Good!" button that aims at bidirectionality. For the feeling of pressing down the button for the nurse call and the way in which it is used, we used FUJIMOTO, MORISAWA, et al. (1995) as a reference.

3. This programme was broadcasted in the building banquet hall at 14:00-15:30 on September 17. On September 18, we used the radio to broadcast the audio of Fukui's "Meeting of Memories," which utilizes the reminiscence therapy method. Softdevice inc. designed the system and the devices, while Shota UEMATSU designed the transmission console. Shoichi FUJITA and Akiko OGAWA were in charge of the planning of the programme associated with the headquarter members or the care home. OGAWA was in charge of overall control.

4. It was assumed that the frequency at which the "Like!" button is pressed would be high, and this directed the space allocated for each button and the design of its size and shape. In addition, a spring was placed under the buttons mimicking the mechanism of press-down buttons on older generation radios.

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