

An Appraisal-Based Approach to the Stigma of Walker-Use

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Abstract. Walker-use among older adults is often avoided because of the stigma of using one. Drawing on the appraisal theory of stress, we argue that stigma associated with walker-use is subject to various cognitive appraisals that affect whether the user sees the walker as stigmatizing and the extent to which they can cope with that stigma. We followed a participatory design approach to involve older adults in the design of an intelligent walker. One of the activities was to conduct focus groups to explore the role of the aesthetic design of the product in acceptance and use of such walkers. Qualitative analysis of these focus groups provides data explaining the ways in which potential users assess stigma and coping resources. We emphasise that while better design of walkers is important, tackling the self-stigma of users and increasing their ability to cope with using one is equally important.

Keywords: Psychology and cognition · User acceptance · Design

1 Introduction

One reason why some older adults do not use assistive technology such as walkers is stigma [1]: a “devalued identity” associated with their use [2]. When an older adult considers using assistive technology such as walkers, they have to deal with the potential of stigma from others who see the walker as a sign that they are old and disabled. People might talk down to them, treat them as being less mentally capable and exclude them from certain activities. The identity of being an “old person” is widely perceived as undesirable and this affects many of the ways in which older adults behave [3, 4]. Sometimes older adults will even avoid the use of blankets [3] or avoid reporting falls [4] because they fear being identified as “old”. Others avoid using assistive walking aids like canes because of stigma [5, 6]. Devices like walkers are signs that a person is old and these can convey a stigmatised identity. For this reason, older adults sometimes utilise compensatory strategies to avoid stigma such as using umbrellas [7] or shopping trolleys [8, 9] as covert walking support. Such devices provide support for the user but do not evoke the stigma of being an “old person”.

While stigma is a key reason why older adults may avoid using assistive technology, it is not always the case that older people are treated negatively. Sometimes attitudes towards older people can be described as “benevolent ageism” [10] which is a tendency to “over-help” older adults. Stigma associated with aging is also internal as

we are prejudiced not merely against others, but also our future selves [11]. Older adults may fear their future self who uses assistive devices and thus avoid such technology. Rather than simply targeting the wider population to decrease stigma, older adults must confront their own negative attitudes.

When older adults face stigma due to using a walker, whether external or internal, this stigma can be considered as a potential “stressor” [12]. They may fear using the walker because it gives them a negative self-image [13] or because they fear what other people will do or say to them [5]. This fear can lead to stress. However, the effect of this stressor is not the same for all people; different people react to stress differently via different coping mechanisms. According to the appraisal theory of stress [14], a stressful encounter is managed by ascertaining the meaning of the encounter (primary appraisal) and the availability of coping mechanisms (secondary appraisal). The coping strategies can either be problem-focused where the stressor is removed through altering the situation or emotion-focused where the stressor is reduced through regulating emotions. In the case of walkers, primary appraisal will evaluate whether using a walker is stressful and secondary appraisal will provide coping mechanisms if it is perceived as stressful. Those coping mechanisms could take the form of a problem-focused strategy (avoiding using the walker) or an emotion-focused strategy (choosing to focus on the benefits of use). These different coping strategies are apparent when users of assistive technologies negotiate their reliance on them by employing various strategies such as resignation, but limiting use or focusing on the benefits of using it [15].

Multiple strategies can be used to cope with the stigma-stress of using the device and this means that even when stigma does exist, it can be coped with and overcome. One possible way to decrease the stigmatizing effect of assistive technology is to increase our use of universal design principles. One of the key principles of universal design is the principle of equitable use which states that the design should be “useful and marketable to people with diverse abilities” [16]. This suggests that the service should be provided in the same way for all users wherever possible and should avoid segregating and potentially stigmatising users. This principle also emphasises the role of designs which are appealing to everyone. The most quoted example of this is the OXO good grips kitchen equipment, originally designed to be easier to grip by people with arthritis, but the design is sought after by many.

A key concept of universal design, is to provide accessibility without requiring an adaptation or assistive technology, by integrating assistive features unnoticed into the design. By its very nature, it should remove any stigma associated as the same design is used by everyone. Figure 1 illustrates how as abilities lessen, inclusive design has a role to play in increasing the number of people who still can use a product, by increasing the depth of the bottom layer of the pyramid. For instance, e-books with backlights can be seen as an inclusive design, providing greater contrast and font size without having to request an adapted version of a book. More advanced versions can even provide access to audio books, again not only something visually impaired people would want, but with celebrity narrators they are desirable to a wider audience. An alternative approach is to create adaptations which are not perceived as assistive, therefore not impacting self-efficacy, or stigma. As with the example of using a shopping trolley as a walking support, the alternative role of carrying shopping is

emphasized. The final approach is to explore if the design of adapted environments and assistive technologies can be done in such a way that they are evaluated as socially acceptable – even desirable. We have seen such a shift in the design of eyeglasses, from undesirable, stigmatizing and medical to designer-led and aspirational.



Fig. 1. Changing Abilities and Inclusive Design

Alternatively, a kettle may be too heavy for a frail, older adult to lift and be dangerous. We could suggest that the older adult requires assistance and design an assistive aid that will support them in the lifting task but this clearly highlights their declining abilities and may lead to self-stigmatising. An alternative would be to suggest a smaller kettle and emphasize the positive effect on the environment and fuel bills rather than the lack of lifting ability. This may inadvertently trigger feelings of loneliness. Alternatively we could suggest the newer designs that remove the need to lift the kettle altogether by pouring the hot water directly into the cup without lifting. These designs again are more environmentally friendly, only heating water as it is poured, allow multiple cups and remove lifting of more than a cupful altogether (Fig. 2).

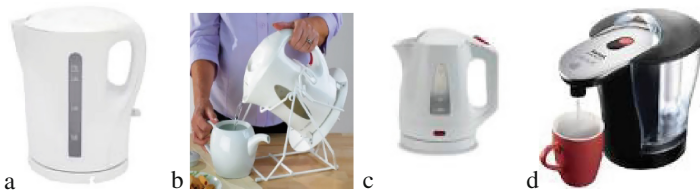


Fig. 2. Presenting adapted technology as aspirational technology

The question is whether or not it possible to make mobility aids more desirable? How can we design walking aids that everyone would be happy to use? An example is the design of Nordic Ski poles, which are widely viewed as more acceptable than a standard medical issue walking stick. They are promoted as an exercise aid rather than as an assistive technology. We also see more elaborate designs of walking sticks, turning them into desirable objects.

Exploring different forms of appraisal allows us to understand individual differences in response to the use of walkers and why not all older adults find using a walker stigmatising. By understanding why some people do not find walker-use stigmatising and how others successfully use coping mechanisms, suggestions can be made for how to assist other older adults to be more willing to use walkers. We conducted this study as part of our work on DALi (Devices for Assisted Living) [9, 17] where we are working with technology partners to design an intelligent walker which supports older adults in large unfamiliar public spaces such as shopping centres and hospitals. Our ultimate goal is to create a robotic support that is both functional and desirable. For people who require assistance, it will operate as a walking and navigation aid and help them to physically carry their shopping. Others will simply use it as a type of desirable “personal assistance”. Consequently, we were eager to explore how to make such a product less stigmatizing and more appealing. Being able to achieve this is important because the development of acceptable walkers and ways to encourage older adults to accept and use walkers will encourage users who may fear going outdoors [18] to become more active. Becoming more mobile is associated with a range of physical, psychological and social benefits which will enhance users’ lives [19].

2 Method

2.1 Data Collection

Five focus groups were held with groups recruited via a database of older participants. Each group contained 4–7 participants. These focus groups took the form of tea parties [17] which are less formal focus groups that include a time for tea and cakes. The less formal nature of these groups has been found to aid more open discussion.

Semi-structured questioning was used, supplemented by use of images of walkers to elicit views. While it can be difficult for participants to talk about what exactly makes a walker’s appearance stigmatizing, discussing photographs provides opportunities for specific designs to be critiqued. We specifically used images that were not created within the project and emphasized to participants that these were not our designs and to feel free to critique them honestly. We felt it was essential for participants to not be “nice to the designers”, a situation we have encountered in other projects. The sessions were recorded by both audio and video recorders.

2.2 Analytic Approach

The transcripts were coded using “template analysis” [20] which stresses the importance of developing an hierarchical structure of themes. The approach allows for a priori categories to be used (e.g. primary and secondary appraisal). The transcripts were read and coded to answer the research question, “What factors influence stigma associated with walker use?” These codes were then grouped into two categories: primary appraisal and secondary appraisal.

3 Analysis

Table 1 provides an overview of the two forms of appraisal. Primary appraisal relates to whether the experience is perceived as stressful/stigmatizing and secondary appraisal relates to the coping strategies that can be used if it is perceived as stressful/stigmatizing. Occasionally themes overlapped both forms of appraisal.

Table 1. Table of main themes from qualitative analysis

Primary appraisal	Appearance of walker → Walker as extension of self → Perception of function and identity → Attention-drawing → Attractive design Social acceptability Self-esteem	Secondary appraisal	Problem focussed → Ability to customize → Social support Cognition focused → Cognitive emphasis on benefits → Necessity → Age-related apathy → Time reduces stigma
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3.1 Primary Appraisal

Appearance of Walker

Walker as Extension of Self. The appearance of the walker is important as it is linked to the person using it, - if it looks bad, the user looks bad. One participant compared the use of a walker to clothing and accessories: *“It’s almost an extension of your dress really, it’s an extension of your external appearance, it’s another appendage, like a watch ...”*

If a walker is unattractive, this causes the user to look bad. On the other hand, an attractively designed walker can offer a user the same positive benefits as an attractive watch or attractive clothing. For this reason, some users also talked about the need to have gender-relevant designs. Walkers would be a positive benefit only if their appearance matched the gender of the user.

Perception of Function and Identity. A device that is designed for people with disabilities confers on the user the identity of “disabled”. On the other hand, when participants discussed various devices, the devices that were associated with positive functions (i.e. those that stressed the *ability* of the user) often led them to confer a positive identity on the user. One participant noted that the use of racing wheelchairs is not associated with a negative identity: *“If you look at somebody in a racing wheelchair, particularly a young person in a racing wheelchair, people don’t look at them with pity do they?”*

This fear of being “pitied” is interesting insofar as the user is not necessarily concerned about being maltreated as much as being perceived as less able than others. This is the essence of stigma which can be described as a “devalued social identity” [21]. Nevertheless, it is important to note that the wheelchair per se is not stigmatizing

and that when it is constructed in a way to display the *ability* of the user, it avoids giving the user a devalued social identity. When participants were shown a range of designs, they preferred the designs that stressed positive attributes of the user: *“It’s got impact you see hasn’t it? It gets away from the idea of disability, it gets away from... It’s got more of the idea of being “with it”.*

In the design mentioned here (Fig. 3) the participant perceives that the design avoids connoting disability and instead confers upon the user the positive attribute of being “with it”. However, we should not assume that all users react in the same way and for some, the same walker was perceived as bulky and unattractive. The notion of primary appraisal makes sense of this because some users find the same product identity-enhancing while others find it stigmatizing.

The participants often mentioned the idea that the design of walker communicates a “message” to others. Some designs say negative things: *“It says to me, very disabled that one”* (Fig. 4). Other designs, on the other hand, say positive things:

“It doesn’t shout disability it says, “I’m out shopping”” (Fig. 5).



Fig. 3. A design described as being “with it”.



Fig. 4. Device perceived as “disabled”;



Fig. 5. Shopper-walker hybrid

While the message conveyed is a functional one (shopping), this is inextricably linked to identity because the activities performed often point to the identity of the person performing them. Being a “shopper” is perceived as positive while being “disabled” is negative.

People often arrive at their perception of function and identity by comparing the device with pre-existing products. Thus, when a design looks like a “baby bouncer” it is deemed inappropriate but when it looks like a golf cart it may be deemed suitable:

“A: In this form, it looks like a golf trolley; B: Or a wheelie bin! C: have your golf clubs in it! A: Yea, I quite like that” (Fig. 5).

As the quote above demonstrates, different people may have quite different reactions to the same device. For one the design is like a golf trolley whereas the other sees it like a bin. One design that was particularly liked by participants was likened to a scooter and participants said that they could pretend they were on a “Vespa or

Lambretta or something” (Fig. 7). The kind of comparisons people make therefore, form the basis of whether they find the device stigmatizing.

Attention-Drawing. Generally, most participants preferred walkers which did not draw attention to themselves. This attention can either be visual attention or attention caused by the size of the walker. One participant talked about how he noticed a woman on his bus struggling with the walker which was obstructing others and how it was embarrassing. Everyday incidents like this caused concern to participants about stigma. In the more extreme examples of walking aids, the idea of attention is prominent:

“A: To be outside in that would be horrible! I mean, ...B: you couldn’t miss it! C: no no! D: you’d get people lining up to watch” (Fig. 6).

The idea of having people deliberately watching causes the participants discomfort. Nevertheless, some participants feel at ease with being watched as long as it is for the right reasons: *“You are the one people are going to stare at. If they stare at you because it’s funky, it’s different.”*

In this context, the participant anticipates being stared at but would accept it if it were because the walker is “funky”. While not all participants are comfortable with attention, for some it is acceptable if it is positive.



Fig. 6. Hanging walking aid;



Fig. 7. A popular design;



Fig. 8. Walker with model

Attractive Design. Designs which are unattractive can make the user feel stigmatized or embarrassed:

“You could walk with it but you’d to have a bag over your head wouldn’t you.”

Even though this is a humorous quote, it belies a serious point. Users want to have designs which do not draw unnecessary attention and make the user feel proud of their walker. Not only do participants seek to have a product that is attractive for them, but they want something that other people would like.

“It looks as though everybody would want one” (Fig. 7).

They also talk about being proud of the device if they took it outside and joked about having brand names like “MacLaren” or “Ferrari” on it – labels typically associated with prestigious and desirable products. A minor theme related to this was

the idea that the apparent cheapness of a device was something that created stigma. Devices that appear to be more expensive are deemed more desirable and attractive.

Social Acceptability

Quite frequently, participants talked about how walkers would be more acceptable if used by others including prominent individuals. One person said that if the Queen used one, it would go a long way towards making their use more acceptable: *“If the Queen started to use a walker ... it would become more acceptable”*.

But it is not just prominent individuals that people look for when thinking about walker-use. The way ordinary people use their walkers contributes to their assessment of the walker. This became apparent when participants began discussing the models using the walkers in the images. In some images, the models were perceived as enhancing their impression of the walker: *“The one that I got, which has a positive outdoor looking lady on the top, influenced my opinion a lot”* (Fig. 8).

Because the model in this instance was perceived as being “positive”, this contributed to the participant’s sense that the walker was a positive thing. On the other hand, when the model is associated with negative characteristics, this negatively impacts their assessment of the walker: *“See that image of somebody bent over with their shoulders, it just ruins it.”*

This means that the relationship between the walker and the person using it is not a one-way relationship (i.e. the walker can make the user look good or bad by virtue of its appearance) but a two-way one in which the user can also influence others’ perceptions of the walker. People look to others who use walkers to make their appraisal of whether the walker is a stigmatizing device.

Self-Esteem

By making the user feel old or dependent, the walker can be a source of stigma. Nevertheless, being treated as an “old person” by others is something which some participants enjoy while others dislike:

“[People] ask questions over your head or shout at you because they think you’re deaf. I think it’s lovely! I love it [...] you know, it doesn’t bother me one iota.”

This person apparently enjoys being treated as an older adult because many of the ways in which this can occur are benevolent rather than malicious. She explained, for example, that she enjoyed being allowed to join the front of the queue because she was perceived as older. However, while this experience of “benevolent ageism” is perceived as positive by some participants, others react against it. They talk about the “danger that you will be treated as an old person” and link this to avoidance of walking aids. One participant referred to her use of a wheeled shopping bag to carry her groceries and even linked this to stigma:

“I used to have one of those [a shopper] before I had a car, and I must admit I did feel a bit stigmatised because it felt like an old lady’s trolley”.

The participants felt that shoppers and walkers both have a similar appearance sometimes. This is why the participant above refers to feeling “stigmatized” because she felt her trolley attributed the identity of “old lady” to her. This devalued identity is

something that participants seek to avoid and while some people appreciate the benevolent aspects of ageism, others prefer not to be perceived as “old” in any way.

3.2 Secondary Appraisal

If walker-use is stigmatizing in some way, this does not mean that it will necessarily be avoided. Perceived stigma will be moderated by users’ coping strategies. These coping strategies can be more problem focused or more cognition focused.

Problem-Focused

Ability to Customize. Some participants liked the idea of customizing their own walker to reflect their personalities. By doing so, this offsets some stigma associated with using a walker: *“One with flowers on it? Perhaps like the walking sticks? You could personalise them because that seems to be, people are much more creative now, and that might appeal to people to be able to put different motifs on them, different coloured seat covers or whatever you’ve got.”* In this extract, participants suggest that customizing walkers would help to make them more acceptable.

Social Support. Social support can be both a primary and secondary appraisal strategy. If walker-use is common, this can encourage people to see them as devoid of stigma (primary). And if people use the walker with others, this can diffuse the stigma (secondary). One design of a walking aid was quite robotic and eye-catching. Participants talked about taking it into the city centre: *“A: The first time you did it, you might get some funny reactions; B: But if we were together...A: ... If you took it out a few times then people would get used to seeing it.”*

The idea that being together would reduce the stigma associated with using it may stem from a diffusion of the stigma. Alternatively, the collective use of the walker may reflect identity dynamics whereby being associated with a social group provides a coping mechanism to reduce stress/stigma [22].

Cognition/Emotion-Focused

Cognitive Emphasis on Benefits. While the use of a walker may seem stigmatizing, users can use a coping strategy which stresses the benefits of using a walker. Participants talked about the benefits of being perceived as old at airports, in shops and on public transport. For these participants, the walker functions as a sign to other people that the user is elderly and implicitly invites benevolent age discrimination: *“People are very considerate of them, they do make room for them and they do help them onto buses and they do, you know, it’s a sign to other people”.*

This use of the device as a signal to other people is both a good thing and a bad thing. For some users, the signaling that the user is old and dependent is limiting and stigmatizing whereas for others, it provides the help they desire. While participants recognize why some people do not like using walkers, they believe that persuading others of the benefits can encourage their use: *“I don’t know, well I do know why people don’t want to use them, I do understand that but, if you could just persuade them of the benefits of using them”.*

The walker may be stigmatizing in some ways, but users can cognitively reappraise what the reaction of other people means. Rather than perceiving it as a negative thing (pity or patronization), they can frame it as something positive (help and support).

Necessity. Another cognitive strategy that people use is to see the use of the device as a necessity. By being convinced of the need to use it, participants can outweigh the stigma of even the most unattractive of devices. One device that was particularly unattractive and conspicuous (Fig. 6) received unfavourable comments from many participants. Nevertheless, many also stressed that they would use it if it enabled them to perform tasks that they could not otherwise perform. Again, another lady who remembered her time when she could not walk and was bedridden said: *“If it had been offered to me, if it was pink with green spots and had feathers sticking out of it and it jangled like a tambourine, and they’d said, “P, this will help you get on your feet”, I would have done it.”* As she describes the walker, she deliberately emphasizes the extent to which it could be stigmatizing (*“pink with green spots”* with *“feathers”*) and stresses that in spite of this, necessity would outweigh stigma. This coping strategy focuses on the need to use the walker and thus reduces perception of the stigma (or concern with it).

Age-related apathy. On several occasions it was mentioned that in old-age there is less concern about what other people think. There is an acknowledgement that stigma may still be there, but it becomes irrelevant: *“But do you find that as you get older, one of the advantages is that you don’t give a damn what anyone else thinks?”* This construction of the self as someone who does not care about what other people think allows the participants to ignore any stigma that may be present.

Time Reduces Stigma. Sometimes when participants saw images of walkers, they acknowledged that the walker may be initially stigmatizing but also believed that over time, the stigma would decrease. This was not used to argue that the participant would only use one when the stigma had decreased in the future, but the belief that the stigma would decrease in the future gave them reason to consider using it in the present:

“A: I think it’s an amazing piece of equipment [(Fig. 6)...] but if we’re talking about walking round Eldon Square [shopping centre]; B: Of course people would get used to seeing them; A: There’s that point!; B: The first time you saw it you would think, “What on earth’s that?” But if you kept seeing it you would get used to it.”

Participants acknowledged that there may be initial negative reactions but offset this with the belief that this type of reaction will fade over time. Beliefs about what the future will be like can provide a coping mechanism for enduring stigma in the present.

4 Discussion

Stigma associated with walker use is a subjective issue and influenced by appraisal of various issues. Seeing stigma through the eyes of the stress appraisal literature [21] allows us to argue that walkers are not stigmatizing per se but must be appraised as such by the potential users. While this may mean that they avoid using them, this study also argues that even the perception of stigma is not sufficient to discourage use if the user can mobilise coping strategies. This study has explored a range of ways in which

people evaluate the use of walkers as stressful or not and if so, how they anticipate coping with using one.

This has relevance insofar as much research emphasizes developing more aesthetically pleasing devices or targeting problem attitudes in wider society [1]. We concur with this but argue that insufficient attention has been paid to helping the users come to terms with technology use. The range of strategies that can be used to either perceive a device as lacking in stigma or cope with stigma provide insight into encouraging the uptake of walkers. Older adults need help to see the benefits of using a walker. Furthermore, if the problem that many older adults face is that of self-stigma, their own stigmatization of walker-users, then changing older adult's appraisal of walkers is essential.

Our work suggests that more attractive designs, more gender relevance, hidden assistance and more positive societal attitudes are not important but equally we emphasise the importance of seeing stigma as an appraisal issue and then helping potential walker-users come to see their walker in a positive light.

5 Conclusion

We believe that this study addresses some important questions about psychosocial influences on mobility and well-being in older adults. These new results also have important clinical implications, highlighting the need to develop intervention strategies that deal with potential psychosocial barriers to mobility, such as fear of stigmatisation. This will help to ensure that mobility interventions, like the provision of mobility aids, do not fail at the outset as a result of user avoidance, but enable aging adults to have the best possible quality of life. It also highlights the need to carefully consider how design might influence older adults' perceptions of themselves and their abilities. Our work emphasizes the importance of using project independent stimuli to evoke genuine evaluation from participants – good and bad. The ultimate goal is to design assistive technology that is aspirational not stigmatizing.

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