

Characteristics of Socially Acceptable Healthcare Devices

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The current design of healthcare devices is often very medical, and therefore challenges their social acceptability for everyday wear.^{3,4} We consider the particular case of glucose monitors, where factors like how they function, how individuals feel when interacting with them, and their aesthetics define how socially acceptable they are.^{1,2}

We consider characteristics of commercially available and participant-designed glucose monitors.

Commercially Available

A

Dexcom G7

B

Medtronic MiniMed 780G

Participant-Designed

C

Vibrating pendant

D

Flashing, beeping purse

E

Vibrating hairclip

1 Feedback Modality

- What sense(s) do the alerts activate?
-- **haptic**, **visual**, **audio**
- How is data communicated?
-- **exact**, **abstract**

Device	Alert Activation	Data Communication
A	haptic, visual, audio	exact
B	haptic, visual, audio	exact
C	haptic, audio	exact
D	haptic, visual, audio	exact, abstract
E	haptic, audio	exact

2 Feedback Audience

- Who is the alert visible to?
-- **only the user**, **everyone**
- Is the device designed to intentionally invoke the respective audience?

Device	Alert Visibility	Audience Invocation
A	only the user, everyone	Yes
B	only the user, everyone	No
C	only the user	Yes
D	only the user, everyone	No
E	only the user	No

3 Device Form

- How big is the device?
- How noticeable is it that this is a medical device?
- To what extent is the device attached to the body?
- Are on-body attachment mechanisms built into the device?

Device	Size	Noticeability	Attachment	On-body Mechanism
A	Minimal	Subtle	On-body	Built-in
B	Minimal	Subtle	Off-body	Built-in
C	Minimal	Subtle	On-body	Built-in
D	Bulky	Obvious	Semi on-body	Somewhat
E	Minimal	Subtle	Semi on-body	Built-in

4 Personalization Opportunities

- Can users edit what alerts are given, how, and when?
- Can users change the device's aesthetics?

Device	Alert Control	Aesthetics Control
A	Somewhat	Somewhat
B	Somewhat	Somewhat
C	Somewhat	Yes
D	Somewhat	Yes
E	Somewhat	Yes

In contrast to wearables generally, the social acceptability of a healthcare device primarily concerns the device user. Our comparison highlights the need for providing device users with control and freedom over how their healthcare devices look, are used, and function, given their need for continued use regardless of audience, environment, or context. Given this focus on device users, our future efforts will explore questions such as how much control do users currently have over different aspects of their devices, how much control might we be able to provide them with, and how much flexibility do they have when it comes to engaging in designing their devices.

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