Mobile patch EEGs - Acceptability, barriers and facilitators of patch use in people with mild to moderate dementia

#108041

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BACKGROUND

- Sleep disturbance is common in dementia and often leads to breakdown of home care.
- Actigraphy and commercial headbands are bulky and poorly tolerated.
- PGV Inc.'s **HARU-2** is a lightweight, flexible EEG patch worn on the forehead that streams data wirelessly.

AIMS

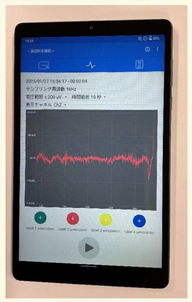
- **Feasibility:** Test if people with mild/ moderate dementia can wear the patch at home overnight.
- **Acceptability:** Assess perceived comfort, burden and confidence.
- **Implementation:** Adapt original Japanese instructions, which were designed for health professionals, to English and for patient use.

METHODS

- **Participant (n=6):** Community-dwelling adults with mild–moderate dementia, enrolled with or without a supporting friend or family member.
- **HARU2 user guide:** The Japanese manual was translated into English and adapted into lay language, then reviewed with PPI members to ensure clarity for the target population.
- **Procedures:** Home visit for explanation and hands-on patch demonstration → participants used the device for 1–3 self-managed nights → follow-up interview about positive and negative experiences → review of data.
- **Ethics**: Approved by the Life and Medical Sciences ERC UCL (Project ID: 1084).

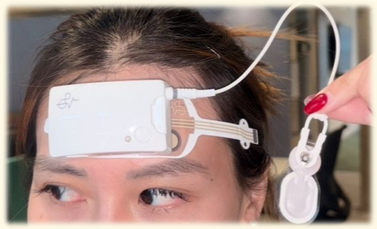
EEG SET & TABLET

(Tablet)

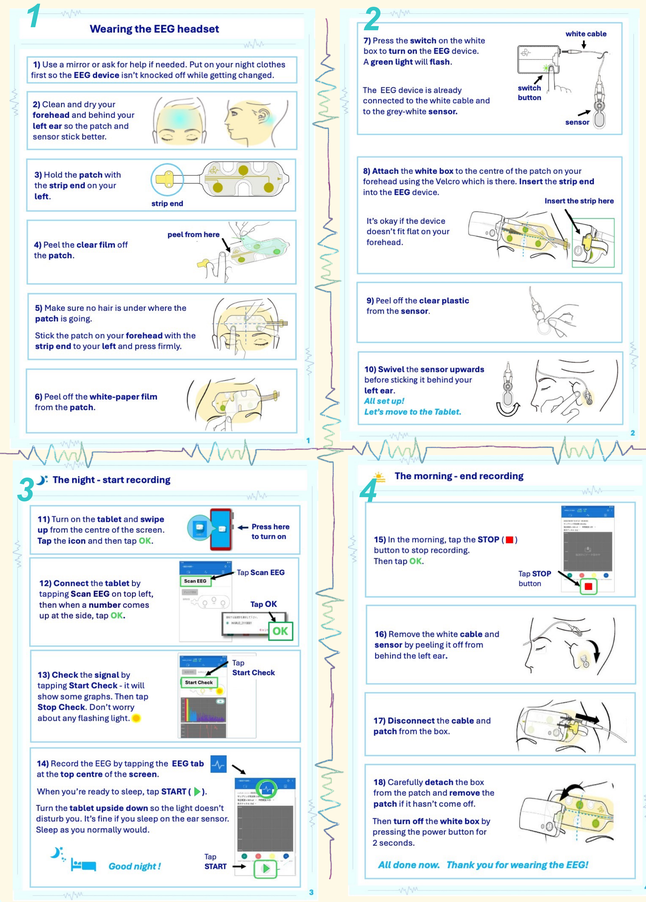


(Box and patch)

(On the forehead)



ENGLISH VERSION OF HARU2 USER GUIDE



RESULTS

Table 1 Demographics of recruited participants

	Age	Ethnicity	Sex	Type of dementia	MMSE score
1	79	Other white background	M	AD	28
2	77	Asian Bangladeshi	M	AD & VD	25
3	80	White British	F	AD	23
4	73	Other white background	M	AD	28
5	75	Other ethnic group	M	DLB	28
6	63	White British	M	AD	19

Note. AD, Alzheimer's disease; DLB, Dementia with Lewy bodies; F, female; M, male; MMSE, Mini-Mental State Examination; VD, vascular dementia.

- All participants required assistance to set up EEG headset.
- All found it acceptable overall.
- No side effects reported, e.g. skin irritation.
- Participants preferred to avoid placing the ear electrode on the side they sleep on.
- People who got up at night left the tablet by the bed, disrupting the Bluetooth connection. We changed to storing data on the device overnight.
- We found the patch cannot be re-adjusted once applied so included spare patches.
- Some reported waking during the night to check the EEG recording.
- The device storage is only 17 hours, so they can only wear two nights without researcher downloading.

FUTURE PLANS

- The patch is feasible and acceptable to date for people with mild to moderate dementia, with assistance.
- **Next step:** More testing and setting up a joint pilot.

ACKNOWLEDGEMENT

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Scan QRcode for link to more details on HARU-2