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EXAMINING THE RELATIONSHIP BETWEEN POOR SLEEP
AND SUICIDAL IDEATION FOLLOWING DISCHARGE FROM
A PSYCHIATRIC INPATIENT HOSPITAL: A CO-PRODUCED
DIGITAL ECOLOGICAL MOMENTARY ASSESSMENT

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01. Background

- Suicide is considered a major public health concern worldwide (1).
- Patients are at high risk of suicidal ideation and behaviour following discharge from a psychiatric hospital (2) but also high prevalence of sleep problems before discharge.
- While there is increasing evidence that sleep is an independent risk factor for suicidal ideation and behaviour it is unknown if poor sleep is related to suicidal ideation and behaviour following discharge in the young adults in the UK (3,4,5).
- We also do not know how the possible mechanistic sleep-suicide relationship relates to other risk factors as part of the Integrated Motivational Volitional Model (6) (Fig 1).
- Our main aim was to examine the relationship between sleep and suicidal ideation and behaviour following discharge from psychiatric inpatient care in young adults (aged 18-35) using wearables.

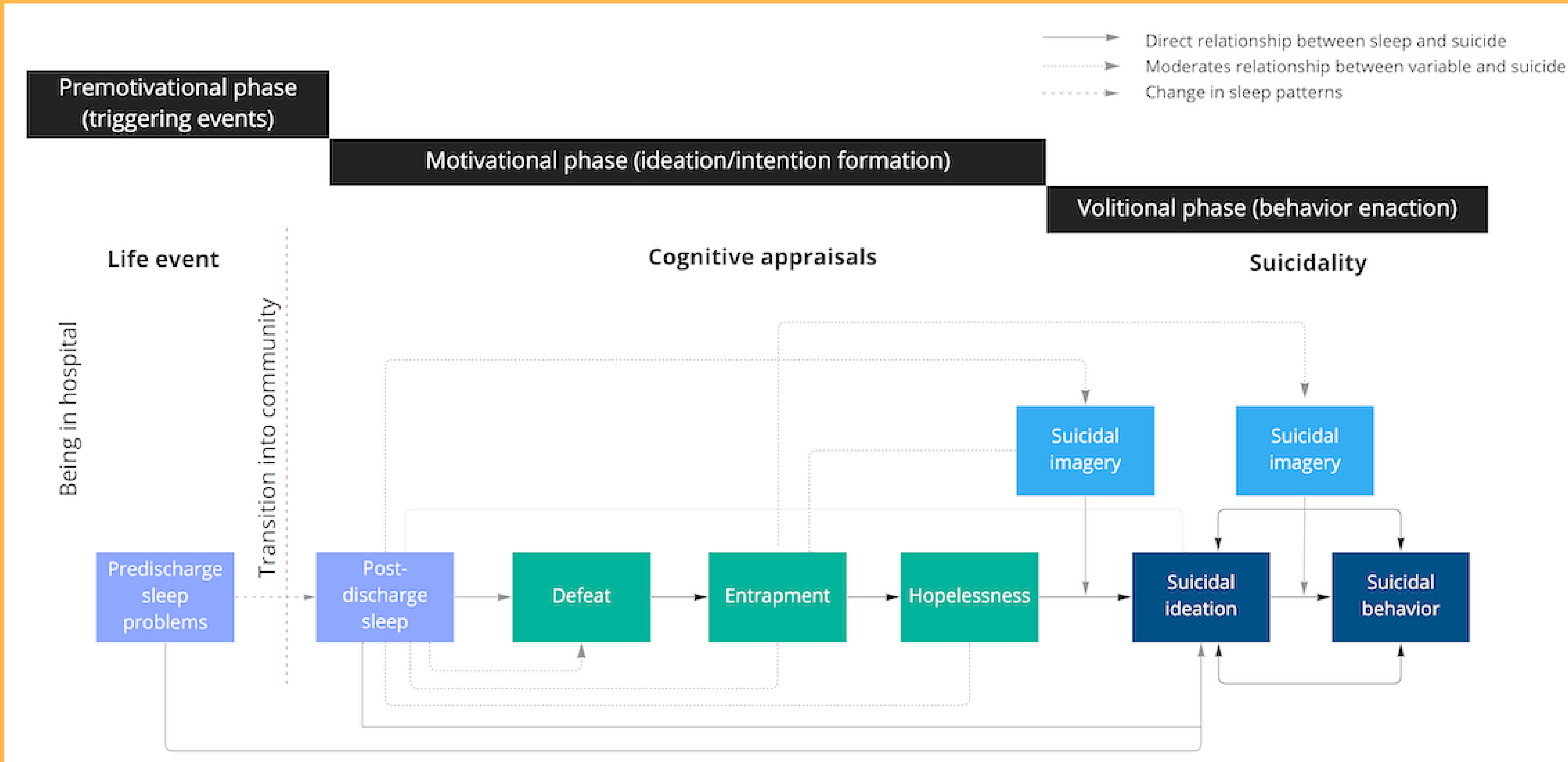


Fig 1: Adapted conceptual model of sleep and suicide in young patients following discharge

02. Methodology

- Our study used a co-produced ecological momentary assessment (EMA) design using the Pro Diary Watch to measure objective and subjective sleep, and other related variables.
- Participants were eligible if they were a prospectively discharged inpatient aged 18-35, diagnosed with a mental disorder, able to give consent and fluent in English and not on sleep medication (e.g. Z-drugs)
- Recruitment started in November 2022 across two acute psychiatric hospitals in London, England.
- Participants completed consent form, baseline assessment including the Pittsburgh Sleep Quality Index and Self-injurious Thoughts and Behaviors Interview-Short Form (7).
- Before discharge, participants were given the Pro Diary Watch to wear (Fig 2). They answered questions on the watch 4 times a day (9am, 1pm, 5pm, and 9pm) before and after discharge (up to 10 days).
- Participants then completed the follow-up questionnaires.



Fig 2: Example questions coming through on Pro Diary Watch



Fig 3: Researcher with two of the co-researchers to discuss project

03. Patient and public involvement

- Three young adults became co-researchers and joined the research team in November 2020 to work across all research stages (e.g. design, planning, getting funding, ethical approval).
- We met throughout the project regularly and shared decisions (using mainly WhatsApp to communicate) and power throughout (Fig 3).
- Reflections on challenges, recommendations and impact have been collected throughout.

04. Results

- To date, we have approached 55 people following eligibility testing (Fig 4). Of these, 18 have been recruited and 13 have completed baseline. So far, 7 have completed baseline, ESM questions and follow-up.
- Initial baseline assessment results indicated some had sleep problems and some were good sleepers, however over half had previous suicidal thoughts (55%) and a fifth had attempted suicide (40%).
- Initial objective sleep varies across patients (Fig 5, 6). Qualitative results suggest participants like using the watch and all would recommend using it to other patients following discharge.

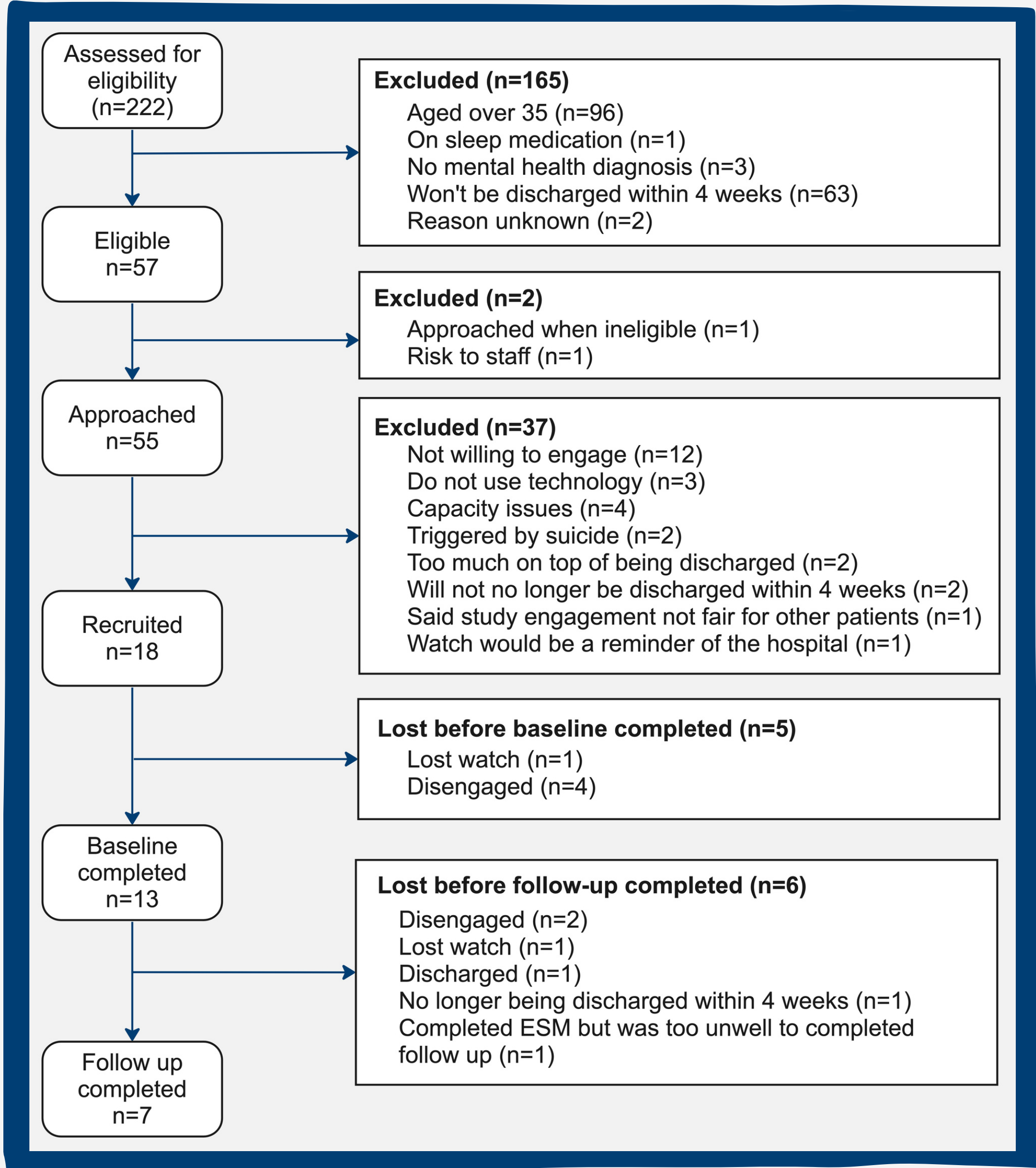


Fig 4: Flowchart showing recruitment so far

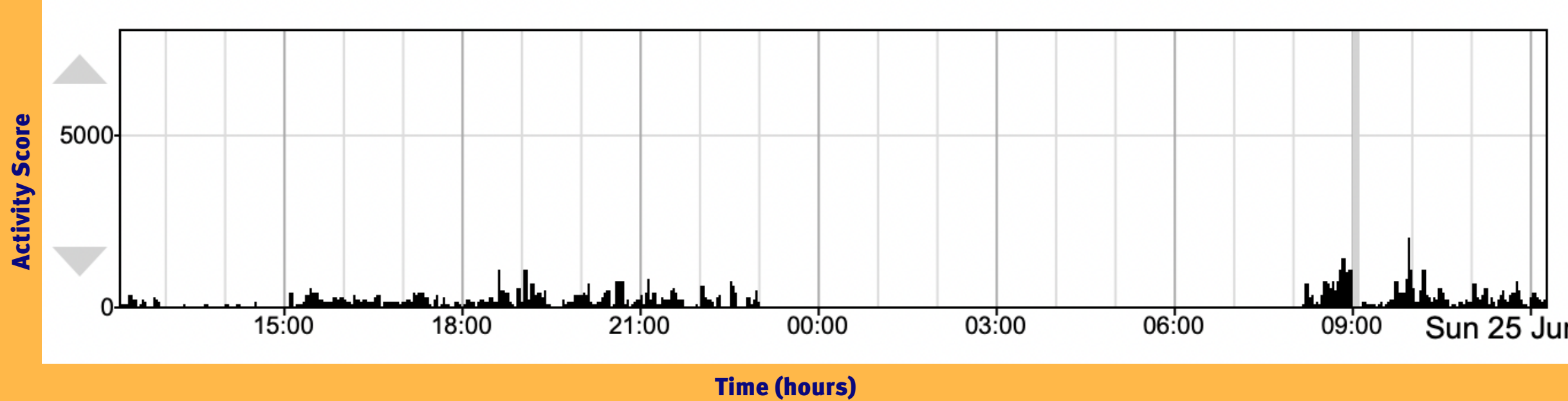


Fig 5: Example of a good sleeper using Pro Diary Watch in P211

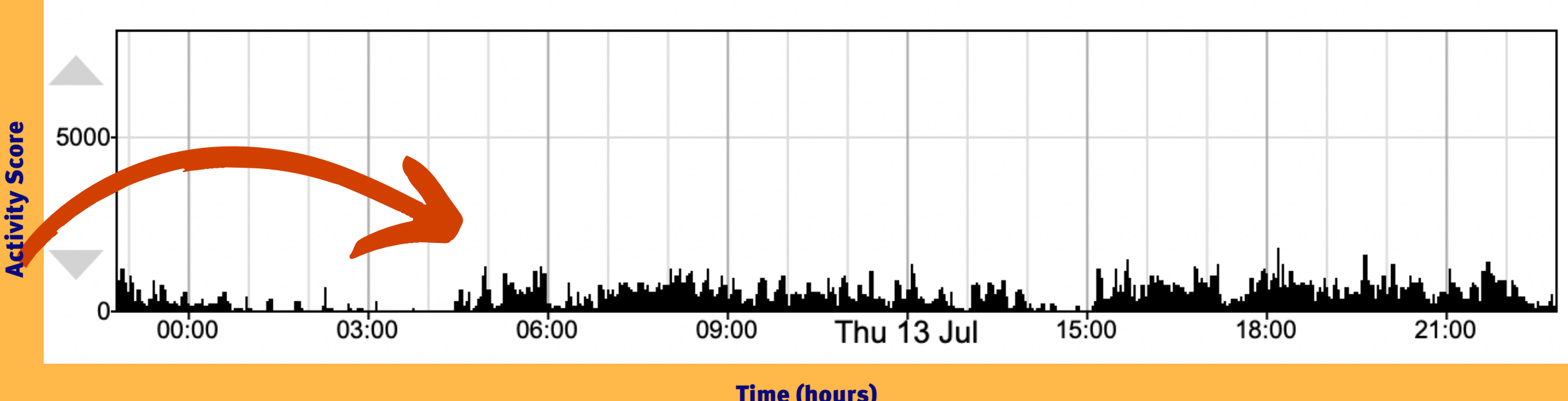


Fig 6: Example of early morning awakening measured using Pro Diary Watch in P220

05. Patient and public involvement (PPI) impact and reflections

- So far, co-producing the study has meant positive impact on the design, EMA protocol and dissemination of the study. For example, the number of responses per day was reduced to 4 from 6 to help improve retention.
- Regular communication using WhatsApp has been vital to share decision making and power.
- Fostering a safe, comfortable group dynamic by being flexible, friendly, welcoming, laid-back and understanding of young people's experiences of inpatient care and suicidality has been crucial.

"Safeguarding the participants and co-researchers is important in suicide research but it's also important to look after the researcher. Bouncing things off with a colleague who is also a clinician and sharing concerns I have, has been really reassuring" Lindsay

"The value of PPI can often be dismissed due to the the need to safeguard co-researchers, however the benefits arising from advising on the protocol - for instance excluding those on 'Z-drugs' came from the PPI which removed a confounding variable- outweighs the resource burden" James

06. Summary and next steps

- To date, recruitment has been difficult and has led to delays in obtaining our target number (n=50). Challenges have included restricted ward access to due Covid-19, staff gatekeepers, and missing discharges due to miscommunication between staff and research team. However so far, all those who have engaged to follow-up have indicated they would recommend using the watch to measure sleep and mood following discharge which is encouraging.
- Next step is continuing recruitment until end of October 2023 followed by planned and exploratory analysis of the conceptual model and dissemination. A full detailed paper on co-production is also planned.