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**The psychiatric ward environment and nursing observations  
at night: a qualitative study**

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## 1 **Abstract**

2 Introduction: A fundamental component of nursing care is observations at night to  
3 ensure the wellbeing of patients. However, there is no literature on the lived  
4 experience by in-patients of such observations or of the general environment of a  
5 psychiatric ward at night.

6 Aim/Question: This study aims (1) to understand the lived experience of being an in-  
7 patient on a psychiatric ward at night with a focus on intermittent observations, (2)  
8 contribute to developing a tool to monitor the psychiatric ward environment for use in  
9 quality improvement projects. Method: Semi-structured interviews were conducted  
10 with twelve in-patients from 5 psychiatric wards who had experienced intermittent  
11 observations at night. These interviews were subsequently transcribed and analysed  
12 using content analysis. Results: Environmental disturbances including light and noise,  
13 invasion of privacy and safety considerations on the ward all contributed to sleep  
14 disturbance. The unintended consequences of disturbances caused by intermittent  
15 night observations, and by staff in general and other patients formed the core of the  
16 inpatients' experience. We developed a clinical tool that could be used to identify the  
17 factors that are relevant on an individual ward. Discussion: Participants interviewed  
18 unanimously agreed that poor sleep quality had a significant negative impact on their  
19 psychological and social wellbeing. These were discussed in relation to the  
20 environment and the experience of observations at night.

21  
22 Implications for Nursing Practice: Deprivation of inpatients' sleep is currently under-  
23 reported, and the usefulness of intermittent observations at night in psychiatric wards  
24 is questioned. Much could be done to adjust the environment at night to support quality

1 sleep and improve psychiatric symptoms. This paper aims to highlight the lived  
2 experience of patients to help bring improvements.

#### 3 4 **Relevance statement**

5 Nursing observations are used in psychiatric wards to keep patients safe at night. In  
6 this study, night observations and the environment in general were severely criticised  
7 by the patients for leading to sleep deprivation. We argue for the development of  
8 policies to improve the environment of psychiatric wards and to adapt nursing  
9 observations at night.

#### 10 **Accessible Summary**

##### 11 **What is known on the subject?**

- 12 • Nursing observations at night are conducted on psychiatric wards to ensure the  
13 safety and wellbeing of patients as well as to reduce the risk of suicide or severe  
14 harm.
- 15 • To our knowledge, no studies have examined the lived experience of the  
16 psychiatric ward environment and of nursing observations at night.

##### 17 **What does the paper add to existing knowledge?**

- 18 • The main complaint from patients was the constant interruption of their sleep,  
19 as most of the patients in this study were observed 2-4 times an hour. Their  
20 sleep was interrupted by a) the light from torches shone into their faces by staff  
21 checking on their safety, b) the noises produced by the opening and closing of  
22 bedroom/ward doors, and/or c) staff talking to each other during the  
23 observation. Patients also reported that they found having somebody enter the  
24 room in the middle of the night intimidating and unsettling.

##### 25 **What are the implications for practice?**

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- 1 • Poor sleep has been associated with an increase in suicide risk and mental
- 2 health problems.
- 3 • Identifying practices that promote sleep hygiene is vital.
- 4 • The study could be used to develop a Quality Improvement Project to improve
- 5 patients' sleep and perhaps reduce duration of stay.

For Peer Review

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This study focusses on understanding patients' lived experience of a psychiatric ward environment at night whilst being under intermittent observations.

Psychiatric nursing observation is defined as "...regarding the patient attentively, minimizing the extent to which they feel they are under surveillance, encouraging communication, listening, and conveying to the patient that they are valued and cared for..." (Standing Nursing and Midwifery Advisory Committee, 1999; Bowers, Gournay, & Duffy, 2000). National Institute for Health and Care Excellence (2015) in the Violence and Aggression Guideline, define various levels of observation determined by a risk assessment. These include *continuous* observation by one or more staff; low-level *intermittent* observation (usually a frequency of between once or twice an hour); high-level *intermittent* observation (usually two to four times an hour). The importance of engagement, (that is the emotional and psychological containment of distress and giving hope) is emphasised as a genuine not just a linguistic alternative to observation which may be deemed to be counter therapeutic (Cardell & Pitula, 1999; Cutcliffe & Barker, 2002; National Institute for Health and Care Excellence, 2015). However, "engagement" is not usually required at night when patients need to sleep and to be kept safe. The difference in the purpose or frequency of day and night observations is under-reported in the literature. A variety of practices and frequency of observations may be used at night to document that a patient was safe at a certain time. The Engagement and Observation Policy (Burleigh, 2017) as well as the Therapeutic Observation and Positive Engagement Policy (Adcock, Pemberton, Leonard, Weedon, & Preedy, 2019) used in inpatient services within psychiatric wards require the staff

1 member to clearly see that a patient is breathing while ensuring that nothing is  
2 impeding them. At night this procedure might involve either opening the window hatch  
3 on the door, entering the bedroom and shining a torch on the patient, switching on a  
4 light or, if the patient is unresponsive, shaking them to establish they are still  
5 conscious. The aims of night observations are therefore a method of assessing  
6 patients' wellbeing as well as any potential risk that might arise in the form of severe  
7 self-harm or suicide.

8  
9 A systematic search of the literature on the environment and nursing observations at  
10 night revealed few studies conducted on a psychiatric ward. A meta-analysis identifies  
11 the problems of sleep deprivation through noise on medical wards (DuBose & Hadi,  
12 2016). There are also studies identifying that the large majority of psychiatric inpatients  
13 experience insomnia without focusing on the determinants (Keeley, 2010; Haynes,  
14 Parthasarathy, Kersh, & Bootzin, 2011; Muller, Olschinski, Kundermann, & Cabanel,  
15 2016; Horne, Hay, Watson, & Anderson, 2018). Improving sleep is important because  
16 sleep deprivation makes a psychiatric disorder worse (Krystal, 2012) and increases  
17 the risk of suicide (Malik et al., 2014). Importantly, sleep duration is negatively  
18 correlated with subsequent length of time in hospital (Langsrud, Vaaler, Kallestad, &  
19 Morken, 2016). The treatment of insomnia has been shown to lessen psychotic  
20 experiences (Freeman et al., 2017), mania (Harvey et al., 2015), depression and  
21 anxiety (Ye et al., 2015). Adapted Cognitive Behaviour Therapy (CBT) for insomnia  
22 reports promise in psychiatric in-patient wards (Sheaves et al., 2018). In the Sheaves  
23 et al. study, patient preferences (e.g. window hatch to be left open at all times or a dim  
24 light to be on through the night) were sought to minimise sleep disruption by

1 observations at night. However, no details are provided on the effectiveness of these  
2 specific interventions, as it was part of an overall package for improving sleep.

3 In summary, psychiatric ward environments are not conducive to sleep. The current  
4 project was therefore driven by the lack of reported lived experiences of inpatients in  
5 psychiatric wards at night. The aims of this study are therefore (1) to understand the  
6 patient experience of being an inpatient at night, (2) to generate items for a clinical  
7 tool to monitor the ward environment for use in quality improvement projects.

8

## 9 **Method**

### 10 Research team

11 The interviews were conducted by one of the authors (SA) as part of her MSc student  
12 research project. No relationship was established with the interviewees prior to  
13 commencing the interview. Interviewees were told that she was interested in their  
14 personal experience of nursing observations and the ward environment at night in  
15 order to help improve future patient care.

### 16 Study Design

17 The design of this study used semi-structured interviews to understand the  
18 experiences of patients in psychiatric wards (see Appendix 1). This qualitative method  
19 provides us with an opportunity to explore and describe in detail the lived experience  
20 of being on a psychiatric ward at night.

21 The participant selection was completed through purposive sampling. The sample was  
22 selected from 5 wards in 4 different hospitals; however, four of the patients shared  
23 their experiences from several other wards where they had been admitted. In total, 13  
24 different wards were discussed during these interviews. Thirteen patients who were at  
25 that time sufficiently mentally stable to be interviewed and had capacity to provide



1 informed consent were assessed by the nursing staff and invited to take part in the  
2 study. All but one agreed to take part and were introduced to the researcher. They  
3 were given a short presentation and information sheets regarding what the study  
4 entailed. All participants provided informed consent and were informed of their rights  
5 to withdraw from the interview at any point and were reassured that their data would  
6 be discarded. The final sample consisted of 12 participants (females:  $n = 4$ ; males:  $n$   
7 = 8, with an age range between 21 and 64 years of age). None of the participants  
8 dropped out of the study.

9 The eligibility criteria included being within the age range of 18 to 65 and under  
10 intermittent observations at night. Participants were excluded if:

- 11 (a) they were psychiatrically too disturbed (for example they were thought disordered  
12 or too agitated) to be able to engage in a research interview or were unable to provide  
13 informed consent,
- 14 (b) there was a suggestion of significant cognitive impairment or learning disability,
- 15 (c) The participant had an insufficient command of English to participate in qualitative  
16 research without an interpreter,
- 17 (d) The participant had an untreated sleep disorder caused by a physical problem such  
18 as obstructive sleep apnoea, restless leg syndrome or narcolepsy.

19 The interviews were conducted in a quiet room within the wards to ensure participants'  
20 privacy and comfort as well as providing them with a safe place where they could freely  
21 express themselves without being interrupted. Confidentiality was maintained by  
22 including only the researcher and the interviewee in each session.

23 The interviews followed a list of open-ended questions and topics that had been pilot  
24 tested prior to commencing the study (see Appendix 1). Further prompts were  
25 provided by the researcher when required. Repeat interviews were not carried out.

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3 1 Each interview was audio recorded with Voice Memos App (IOS) and field notes were  
4  
5 2 collected. Each interview session had an average duration of 30 minutes. We asked  
6  
7 3 the patients at the end of each interview if they had anything else to add and by  
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9 4 discussing with the principal investigator the limit reached regarding the development  
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11 5 of subsequent categories. The transcripts were not returned to participants for  
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13 6 comments or corrections.  
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### 19 8 Data Analysis

20  
21 9 The collected interviews were recorded, and the answers transcribed verbatim by the  
22  
23 10 second author (SA). These transcripts were then analysed using the content analysis  
24  
25 11 with open coding procedure as described by Elo and Kyngäs (2007), where categories  
26  
27 12 are derived from the data by the third author (AP). This procedure included (a)  
28  
29 13 familiarization with the data and identification of initial codes (units of meaningful text  
30  
31 14 relevant to the research topic), (b) organising the qualitative data through open coding,  
32  
33 15 (c) grouping list of categories generated into higher order headings, (d) perform  
34  
35 16 abstraction by formulating a general description of the topic through the generation of  
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37 17 categories and (e) reporting the categories (Figure 1). The final content analysis was  
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39 18 comprised of 27 codes, which were grouped into 3 generic categories.  
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44 19 **Ethics:** A favourable opinion was provided by Coventry & Warwickshire Reseach  
45  
46 20 Ethics Committee (REC reference 17/WM/0395). The participation of patients was  
47  
48 21 voluntary, and data collection was conducted confidentially and anonymously. All  
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50 22 participants had capacity to give informed consent and was given personally to the  
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52 23 researcher.  
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## 1 **Results**

### 2 Sample Characteristics

3 Twelve patients from 4 different psychiatric wards across London participated in this  
4 study of whom 5 (42%) were detained under the Mental Health Act and 7 (58%) were  
5 voluntarily admitted. Patients had received a variety of psychiatric diagnoses. All  
6 patients were currently or had in the past been under intermittent observation between  
7 1 and 4 times an hour. The ethnic background of this sample was mainly White British  
8 (69.2%), with the rest being Black African (23.1%) and Asian Indian (7.7%).

### 9 10 Experience of the night environment in wards (interview)

11 Interviews began by asking patients to provide a summary of their experience at night  
12 on a psychiatric ward compared to their own home. Patients reported that they either  
13 found it very difficult to sleep at night in the wards - "because of the nature of the place,  
14 17 people all with different problems, our sleep patterns are not the same .... I can get  
15 3 to 4 disturbances in an hour" (Participant 6), or they required medication to help  
16 them sleep, - "I am more likely to need medication to sleep in the wards compared to  
17 at home" (Participant 4) or they were content with the conditions because of a lack of  
18 better alternatives - "staying here (ward) is far better than being homeless" (Participant  
19 12).

20  
21 The interview continued by considering the role of nursing staff in relation to the sleep  
22 experience of patients in night wards. Patients were not always aware of the purpose  
23 of night observation and often considered it unnecessary for them, while being of  
24 benefit for other patients. An exception to that was a patient who reported, "It was  
25 necessary, but it didn't really stop me from hurting myself" (Participant 1).

1 Further analyses of the interview data yielded three generic categories; (1)  
2 Environmental Disturbances, (2) The Experience of spending the night on a  
3 psychiatric ward as a patient, (3) Emotional Wellbeing (see Figure 1).

#### 4 **Category 1: Environmental Disturbances from observations**

5 Sleep disruption due to observational procedures. All patients negatively reported the  
6 opening and closing of bedroom doors during night observations. They described this  
7 procedural behaviour as startling. It increased their anxiety, decreased their ability to  
8 relax and negatively impacted their emotional wellbeing.

9 *“They should have soft closing for the doors so that they stop slamming. The*  
10 *doors make me jump... with the loud banging... and this worsens my anxiety”.*  
11 (Participant 8).

12 Another procedure of which all patients expressed an overall disapproval was the use  
13 of light during night observations. They reported being severely disturbed by the use  
14 of torches or by bedroom lights being turned on without warning.

15 *“I probably didn’t really go to sleep. They kept coming in every 15 minutes.*  
16 *Sometimes they turn the florescent room lights on in the night, that’s horrible.*  
17 *They would turn the light on until I made some movement or showed I am ok.*  
18 *Sometimes they would use torches as well but better than lights being turned*  
19 *on”.* (Participant 1).

20 Descriptions of night observations were always followed by a reference by the  
21 interviewee to the negative impact it had on their emotional state. In some patients  
22 this contributed to a constant state of anxiety and a feeling of being unsettled.

23 *“The nurses try to use a lower voltage bulb in an attempt not to startle you. But*  
24 *when the room is dark to begin with any light looks so bright”.* (Participant 6).

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3 1 *“Startling is when they come in and I see a silhouette, it really frightens me!”*

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5 2 (Participant 7).

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10 4 Staff behaviour as a cause of sleep disturbance. The disruption was mainly attributed  
11  
12 5 to general staff behaviour such as *“talking on their phones all night..., talking loudly*  
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14 6 *amongst themselves ....watching tv”* or even *“shouting at each other ... and ...*  
15  
16 7 *screaming at the sight of a spider”*. (Participant 1).

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20 8 Further criticism of staff behaviour included noisy handling of keys to open and close  
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22 9 doors. According to patient reports the sound of clinking keys was particularly  
23  
24 10 disturbing.

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27 11 *“I mean the light was irrelevant because by the time they clanked the keys and*  
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29 12 *banged up and down other doors in the corridor I was wide awake... Obviously*  
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31 13 *the noise woke me ... because of the way the room is there is virtually nothing*  
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33 14 *in it so it’s like an echo chamber”*. (Participant 13).

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39 16 **Category 2: Experience of spending the night on a psychiatric ward as a patient**

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41 17 Other patients “invading” private space. Another concern raised by the patients was  
42  
43 18 the invasion of their personal space by other patients who “are unwell ... and not at  
44  
45 19 the same level as we are” (Participant 2). Such accounts included;

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48 20 *“I have had patients coming into my room; this was unsettling and very scary*  
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50 21 *... because the patient had to travel quite a bit to come in my room and it makes*  
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52 22 *me wonder why were they not stopped?”* (Participant 7)

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55 23 With one experience being;

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57 24 *“One patient ... came in my room and at one point held me hostage and the*  
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59 25 *nurses had to get me out”* (Participant 1).

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3 1 These incidents could have a detrimental impact on the emotional state of a patient  
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5 2 as some reported raised levels of worry and constant thoughts concerning their safety.

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8 3 *“Sometimes patients are shouting and screaming, crying and some are*  
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10 4 *aggressive; it’s really unpleasant”* (Participant 7).

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14 6 Uncomfortable with presence of staff in the room at night. Staff were considered at  
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16 7 times as a threat by some patients who reported *“not feeling safe during the*  
17  
18 8 *observation”* (Participant 8), especially when staff entered their rooms at night. One  
19  
20 9 patient commented *“when they come in and I see a silhouette it really frightens me”*  
21  
22 10 (Participant 7). This was not the general consensus however, as some patients  
23  
24 11 reported that familiar and friendly staff can be comforting and reassuring. One  
25  
26 12 participant felt unsafe as *“despite observation I still self-harmed”* (Participant 1).

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33 14 Suspension of privacy. The issue of privacy was raised by a number of patients, who  
34  
35 15 did not feel comfortable with the current strategies implemented by the night staff. In  
36  
37 16 particular it was highlighted that *“it’s an odd experience when you see a person ...*  
38  
39 17 *peering through at you”* (Participant 3) and *“it’s worse ... to see a stranger (referring*  
40  
41 18 *to agency staff) in your room in the middle of the night”* (Participant 7). There were  
42  
43 19 also some accounts about other patients not respecting privacy. One patient reported:  
44  
45 20 *“I didn’t like all the patients staring at me which they tended to do to have a good look*  
46  
47 21 *through the window”* (Participant 13).

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51 22 *“Concept of observation is flawed”*. Patients’ negative perception of observation were  
52  
53 23 so strong that they were challenging the usefulness of night observations by reporting  
54  
55 24 that *“someone is constantly watching you”* which makes you feel *“like being in a fish*

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3 1 *tank*” (Participant 7) and *“loses the therapeutic relationship and trust you are supposed*  
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5 2 *to be building*” (Participant 12).  
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10 4 **Category 3: Wellbeing**

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12 5 Impact of sleep deprivation on emotional state. Patients reported a number of  
13  
14 6 emotional issues such as feeling *“unwell”* (Participant 1), *“groggy”* (Participant 5) and  
15  
16 7 *“tired so I sleep during the day and don’t get too much else done”* (Participant 9).  
17  
18 8 These feelings were deemed to be directly linked to the observation process as, *“staff*  
19  
20 9 *kept coming every 15 minutes ... startling me and waking me up at night”* (Participant  
21  
22 10 8). This was an ongoing phenomenon as per the patients’ reports *“they’ll (staff) wake*  
23  
24 11 *me up again. Sometimes I am awake for hours! And then when you do get back to*  
25  
26 12 *sleep, and finally sleep, it’s time to wake up again!”* (Participant 11). One patient  
27  
28 13 compared the sleep deprivation experienced in wards to be similar to Guantanamo  
29  
30 14 Bay saying; *“we know how bad sleep deprivation is, look at Guantanamo Bay, they*  
31  
32 15 *were tortured and could not sleep”* (Participant 6).  
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17 Poor communication with staff. A number of patients reported the lack of  
18 communication between them and the nurses, despite of all the social activity  
19 described in the ward. They expressed feelings of loneliness and isolation in response  
20 to this lack of interaction. One patient highlighted:

21 *“There would be no interaction, even if I was awake, lying on the bed, they*  
22 *wouldn’t talk to me... Very very very little interaction if any at all. If you went to*  
23 *seek interaction, most did not give me the time”.* (Participant 7).  
24

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3 1 Patients also reported that they felt misunderstood as any symptoms originating from  
4  
5 2 lack of sleep were completely disregarded by the nursing staff. When patients  
6  
7 3 mentioned any type of distress caused by lack of sleep, the staff preferred to  
8  
9 4 administer medication to alleviate the symptoms “*If I was distressed, they’d (staff)*  
10  
11 5 *resort in drugs than actually speak to me*” (Participant 7) or induce sleep “*medication*  
12  
13 6 *knocks me out... but I am still aware of everything that’s going on*” (Participant 6),  
14  
15 7 rather than altering and/or adjusting some of the behaviours and procedures that  
16  
17 8 caused the problem initially.

18  
19 9 At the end of each interview, participants were encouraged to provide their feedback  
20  
21 10 regarding practices that might improve disturbances in night wards. Suggestions in  
22  
23 11 respect to minimizing light disturbances included the use of night-vision glasses or a  
24  
25 12 CCTV camera (only during night-time). Concerning the reduction of noise, suggestions  
26  
27 13 included: installing floor coverings, using soft closing doors or applying foam to the  
28  
29 14 doors to soundproof them. Recommendations for safety concerns included the  
30  
31 15 installation of an alarm in the bedroom and for privacy concerns, neon gas windows  
32  
33 16 which could be controlled by both staff members and patients.

34  
35 17 The use of remote monitoring systems was also discussed with the majority of the  
36  
37 18 patients (75%) finding the use of wearable devices measuring pulse rate, sleep and  
38  
39 19 activity (e.g. Fitbit) acceptable, however they were not as keen on a location tracker  
40  
41 20 (only 33% found it acceptable).

42  
43 21  
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45 22 The categories identified were used to develop a questionnaire to monitor the ward  
46  
47 23 environment and impact of observations at night (Appendix 2). This could be used in  
48  
49 24 a Quality Improvement Project to improve the quality of sleep on a ward. Ideally, the  
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51 25 questionnaire would be used in conjunction with a light and decibel meter and measure  
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3 1 of sleep quality to obtain more accurate estimations about the ward environment at  
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5 2 night.

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10 4 **Discussion:**

11  
12 5 This study explored the lived experiences of patients on an acute psychiatric ward  
13  
14 6 during the night, specifically focusing on the effect of intermittent observations and the  
15  
16 7 general environment on the quality of sleep. Central to the narratives of all  
17  
18 8 interviewees were three main categories. The categories that predominated related to  
19  
20 9 environment disturbances and particularly the procedures followed during night  
21  
22 10 observations which led to poor quality of sleep.

23  
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25  
26 11 The main category of these interviews was that of the unintended consequences of  
27  
28 12 intermittent observations negatively impacting patients' sleep at night on a psychiatric  
29  
30 13 ward. The category of the experience of spending the night on a psychiatric ward that  
31  
32 14 emerged from the analysis presented two novel consequences of intermittent  
33  
34 15 observations conducted at night. Patients reported that having staff entering their room  
35  
36 16 at night when they were asleep made them feel very uncomfortable and vulnerable,  
37  
38 17 especially where agency staff whom they did not know were conducting the  
39  
40 18 observations. The procedures followed by night observations also resulted in patients  
41  
42 19 feeling deprived of their privacy which had an impact on the therapeutic relationship  
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44 20 with staff by reducing trust and potentially cooperation leading to worsening patients'  
45  
46 21 symptoms prolonging their stay at the wards: as such, patients questioned the  
47  
48 22 usefulness of observations at night. Consequently, their physical and mental health  
49  
50 23 were also negatively impacted due to experiencing a constant state of anxiety,  
51  
52 24 alertness and irritable mood. These effects have been previously reported by Wood  
53  
54 25 and Pistrang (2004) in relation to the general experience of being a patient on an acute  
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1 psychiatric ward. Patients reported an overwhelming sense of vulnerability and  
2 helplessness, which was in line with reports from staff working in these wards.

3 Observations at night is a standard method of risk management. However, they can  
4 be disruptive and obtrusive, and potentially reduce or disrupt patients' sleep which  
5 could be a contributory factor of increased self-harm or delayed discharge.

6  
7 Further findings of our study showed that participating patients **overwhelmingly agreed**  
8 **that** they experienced sleep deprivation at some point during their stay in a psychiatric  
9 ward. The sleep deprivation was mainly attributed to interruptions caused by  
10 intermittent observations that were accompanied by noises from doors opening and  
11 closing, as well as bright light torches used during the process.

12  
13 These results are in line with surveys of psychiatric in-patients who have reported  
14 symptoms of insomnia due to noise and light usage during nursing observations  
15 (Muller et al., 2016; Horne et al., 2018) as well as research studies that have measured  
16 sleep objectively through the implementation of wrist activity monitors. These studies  
17 have found that the amount of sleep was highly correlated with noises produced by  
18 staff conversations, other patients, intercoms and pagers (Yoder, Stasiunas, Meltzer,  
19 Knutson, & Arora, 2012). A meta-analysis confirms these findings as it concludes that  
20 the continuous noise caused by nurse night activities in medical wards lead to poor  
21 sleep conditions for the patients (DuBose & Hadi, 2016). Sleep disruptions have also  
22 been reported in intensive care units and surgical wards (Norton, Flood, Brittin, &  
23 Miles, 2015) in relation to environmental factors mainly attributed to noise. Patients  
24 have been reported to experience fragmented sleep for up to 5 hours per night (Horne  
25 et al., 2018). The constant interruptions also influence the quality of sleep as patients

1 are unable to reach deeper stages of sleep (Elliott, McKinley, & Cistulli, 2011). A  
2 number of studies have established that poor sleep is associated with a range of  
3 physical and mental health problems (Reid et al., 2006). More specifically intermittent  
4 sleep deprivation has been shown to cause negative changes in the neuroendocrine,  
5 immune and inflammatory systems (Norton et al., 2015) as well as hypertension  
6 (Fernandez-Mendoza et al., 2012; Vgontzas, Fernandez-Mendoza, Liao, & Bixler,  
7 2013; Bathgate, Edinger, Wyatt, & Krystal, 2016). Further evidence from correlational  
8 and experimental studies has demonstrated that reduced sleep has a severe impact  
9 on emotional regulation (Babson, Trainor, Feldner, & Blumenthal, 2010; Talbot,  
10 McGlinchey, Kaplan, Dahl, & Harvey, 2010) and negative mood as well as circadian  
11 rhythm disruption (Arendt, 2000). Sleep deprivation and worsening of symptoms  
12 through the usage of night observations might be justified if the rate of severe self-  
13 harm, suicide, violence and absconding was very high. Data from the National  
14 Confidential Inquiry, however, show that between 2011 – 2016 there were 464 in-  
15 patient suicides reported with approximately 16% of them taking place during the night  
16 (Veale, 2019). No controlled trials have been conducted to determine how many  
17 suicides or episodes of severe harm have been prevented or increased because of  
18 intermittent observations.

### 19 20 Implications for Nursing Practice

21 One outcome of this study is to question the *routine* use of intermittent observations  
22 at night and the lack of flexibility in altering intermittent observations during the day to  
23 general observations at night. The aim of observations is to keep patients safe.  
24 However, an unintended consequence of intermittent observations at night is that  
25 sleep deprivation may increase the risk of self-harm as suggested by a recent

1 systematic review and meta-analysis (Malik et al., 2014). Therefore, if patients are  
2 judged to be at immediate risk, then they should be placed on constant observation. If  
3 they are not, then optimising sleep is important for treating the psychiatric disorder and  
4 they should be placed on general observations at night. If intermittent or constant  
5 observations are to be used at night, then it would be helpful to evaluate other  
6 interventions and practices that allow patients to sleep and be kept safe. Wearable  
7 devices that measure pulse rates, sleep and activity are now used by millions of  
8 people. Indeed, general hospital wards have used remote monitoring systems for  
9 some years. For example, following surgery when patients need to be left as much as  
10 possible to experience restful sleep, vital signs including temperature, pulse and  
11 respiration, ECG traces, saturated oxygen levels can be remotely monitored at a  
12 nursing station at some distance from the patient's room. Other vital signs may also  
13 be monitored in this way and could in theory immediately alert staff to a serious  
14 adverse event (e.g. asphyxiation) or removal of a device. Such wearable devices could  
15 therefore be used in patient wards to facilitate observation and provide important  
16 objective information such as sleep quantity and quality and level of arousal. When  
17 the usage of such devices was discussed with the patients of this study, the majority  
18 expressed a positive outlook for their implementation. Further research is required to  
19 determine the acceptability of devices and the number of false positives.

20  
21 Although there is considerable variation in the nature of inpatient psychiatric wards  
22 across the world, with differences in the background, education and training of mental  
23 health nurses, the matters of observation and the prevention of suicide is a well-  
24 recognised issue in the literature. The NICE Guidelines, the first version of which was  
25 published in 2005, were the first to provide detailed guidance of the process of

1  
2  
3 1 observation and matters of context. Internationally, one example of observation  
4  
5 2 guidance is to be found in Australia, where observation levels are very similar to those  
6  
7 3 defined in NICE Guidance. The Department of Health Guideline for the State  
8  
9 4 Government of Victoria “Nursing Observation Through Engagement in Psychiatric  
10  
11 5 Inpatient Care” (Department of Health Guideline, 2013) draws attention to night time  
12  
13 6 observation. It is particularly noted: “When deciding upon observation levels, senior  
14  
15 7 nurses and treating psychiatrists should determine whether it may be appropriate to  
16  
17 8 use lower levels of observation. In some situations, less intrusive forms of observation  
18  
19 9 may enable better sleeping patterns in people who are hypervigilant or who may  
20  
21 10 awaken or be startled... Whatever the clinical indicators suggest, the person being  
22  
23 11 observed should be aware of what type of observation will occur at night.”

24  
25 12 Our results and previous surveys indicate a need to improve sleep on psychiatric  
26  
27 13 inpatient wards. Whilst it may be possible to develop digital wearables in the future, it  
28  
29 14 should be possible to improve the ward environment now.

30  
31 15 A Quality Improvement Project (QIP) for improving sleep has been conducted on acute  
32  
33 16 medical and surgical wards by Norton et al. (2015). Some of their suggestions and the  
34  
35 17 patient suggestions from this study could be incorporated or adapted for a psychiatric  
36  
37 18 ward. We identified in our study noise and light as being the major determinant factors  
38  
39 19 of sleep deprivation, and it should be possible to develop a ‘Sleep Quality  
40  
41 20 Improvement’ policy for psychiatric wards by noise and light and the routine use of  
42  
43 21 intermittent observations in psychiatric ward settings.

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45 22  
46  
47 23 Limitations

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49 24 The results from this limited sample should be followed by a larger and possibly more  
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51 25 representative population in a quantitative study. The study may be limited as the data  
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1 obtained might be characterized by a recall bias, because interviews were not  
2 necessarily conducted when participants were under observation at night. It is possible  
3 that researchers were biased in their beliefs and assumptions about the problems of  
4 sleep deprivation, although these had already been influenced by informal discussion  
5 with patients. Accounts from nursing staff should also be collected to compare with  
6 patients' experience to obtain a broader perspective of the ward environment at night.

7

## 8 Conclusion

9 Previous studies have highlighted the poor quality of sleep in psychiatric in-patients.  
10 Our study has highlighted that factors impacting sleep quality included environmental  
11 disturbances such as noise and light which were related to nursing observations. In  
12 this study the unintended consequences of night observations on patient's sleep  
13 quality were further explored. The findings were in line with previous studies as it  
14 showed sleep deprivation being related to noise and light, with the newest finding  
15 being that night observations negatively impact the sense of safety and privacy for in-  
16 patients. The implications of this research are threefold; improvement in the  
17 environment of psychiatric wards is urgently needed, emphasis should be placed on  
18 developing and implementing a checklist to ensure the improvement of sleep quality  
19 for patients as well as reducing the routinely use of intermittent observations at night.

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For Peer Review

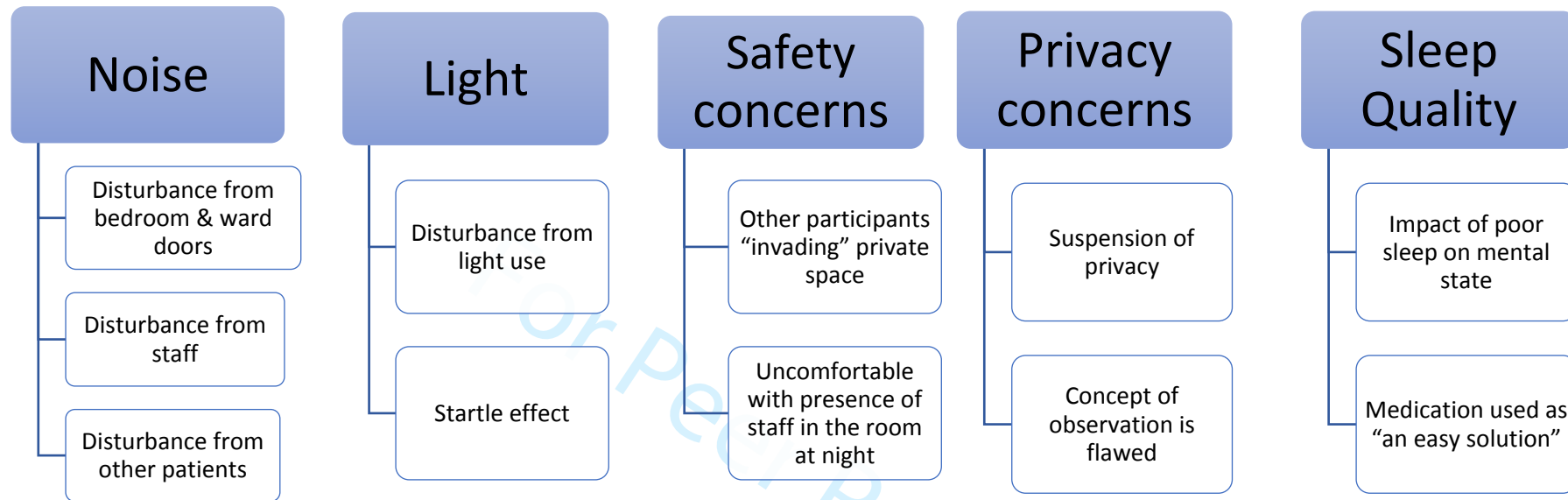


Figure 1: Mental health patients' experience and perception of night environments in wards: themes and sub-themes.

## Appendix 1

### **Topic List for Interview**

For how many days have you been an in-patient? What sort of ward is it? Are you a voluntary patient or detained on a Section of the Mental Health Act?

In a moment, we'd like to discuss your nursing observations at night. However, first I'd like to get a general picture of what's it like to sleep on your ward at night compared to being at home. How have you slept on the ward?

*(If the person had a problem sleeping generally)* Was it difficulty getting to sleep at all, or being awoken and then being unable to get back to sleep or something else?

How big a problem was each of the following in affecting your general ability to sleep?

Turning now to the observations by nursing staff:

For how many nights were you observed?

Was this on intermittent or constant observation at night *(discuss each separately)*?

*(If intermittent observation)* Do you know how often you were being observed at night by staff?

*(If constant observation)* What did this consist of?

Was the purpose of the observations explained to you by staff?

*(If not, what did you understand was the purpose of the observations?)*

Do you know if the staff assessed you as at risk of committing suicide or severely harming yourself, or something else?

Did you think observing you at night was necessary? *(If not, why not?)*

Do you think observations at night are ever necessary for other patients? *(If not, why not?)*

*(If intermittent)* Please describe how you were observed at night (e.g. did the nurse shine a light in your face or open the door or what?)

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2  
3 Did the nursing observations startle or wake you at night? If so, how often were you  
4  
5 disturbed?  
6

7  
8 How big a problem was each of the following for you at night when a nurse was  
9  
10 checking your safety?  
11

12 Did anything else in the nurse's behaviour interfere in your sleep?

13  
14 Were you able to get back to sleep again easily?

15  
16 Do you feel that observations at night had any impact on the way you felt the following  
17  
18 day? (in what way?)  
19

20  
21 Do you feel that nursing observations at night might influence your decision to seek  
22  
23 help in the future?  
24

25  
26 Given that observations may be necessary for some patients, how could observations  
27  
28 at night be improved to keep you safe and not disturb you at night?  
29

30  
31 What do you think of the idea of staff using a torch with an amber light that would not  
32  
33 wake you?  
34

35 How would you reduce the sound outside your room or the noise of the nurse walking?

36  
37 Would you find it acceptable to wear a device around your wrist that transmitted your  
38  
39 heart rate? What about having your location tracked?  
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41  
42 What's your experience with nursing observations during the day? (Do staff talk to you  
43  
44 to find out how you are?)  
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46 Thank you!  
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**Appendix 2****Experience of Night Environment on the Ward****Instructions: Circle the number which best describes your experience****Part 1:** Please rate the following according to how much your sleep was disturbed by staff during night observations

	<b>Not at all a problem</b>	<b>Minor problem</b>	<b>Moderate problem</b>	<b>Serious problem</b>
1. Light used by staff (e.g. torch)	1	2	3	4
2. Light in my bedroom switched on	1	2	3	4
3. Noise created by staff when opening my door/hatch	1	2	3	4
4. Noise created by staff walking into my bedroom	1	2	3	4
5. Noise created by staff when carrying keys	1	2	3	4
6. Noise created by staff talking or shouting	1	2	3	4
7. Staff shaking me	1	2	3	4
8. Lack of privacy from staff	1	2	3	4
9. Feel unsafe when staff enter my room	1	2	3	4
10. Staff entering my room are strangers	1	2	3	4
11. No communication with staff when I am awake	1	2	3	4

**Part 2:** Please rate the following according to how much impact do general disturbances on the ward have on you

	<b>Not at all a problem</b>	<b>Minor problem</b>	<b>Moderate problem</b>	<b>Serious problem</b>
1. Light on the ward (e.g. hallway lights)	1	2	3	4
2. Noise created by staff/patients talking or shouting	1	2	3	4
3. Noise created by staff/patients closing doors	1	2	3	4
4. Lack of privacy in my room (e.g. door window, CCTV etc.)	1	2	3	4
5. Feel unsafe due to patients entering my room	1	2	3	4
6. Any other issues? Please write below	1	2	3	4

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**Supplementary Table: COREQ Checklist**

<b>Domain 1: Research Team and Reflexivity</b>	<b>Evidence in the manuscript (page and line number)</b>
<b>Personal Characteristics</b>	
1. Interviewer/facilitator	The interviews were conducted by SA (page 6, line 9)
2. Credentials	MSc (page 6, line 9)
3. Occupation	Student (page 6, line 9)
4. Gender	Female (page 6, line 9)
5. Experience and training	At the time of the interviews, was in the late stages of completing MSc student where qualitative research was covered
<b>Relationship with participants</b>	
6. Relationship established	No (page 6, line 10)
7. Participant knowledge of the interviewer	Participants were given a 1 hour presentation and information sheets regarding what the study entailed (page 7, line 1-2). Ethical approval was granted from the Health Research Authority (page 8, line 22-23)
8. Interviewer characteristics	The data was collected by a MSc student. (page 6). The supervisor had an interest in sleep.
<b>Domain 2: Study Design</b>	
<b>Theoretical Framework</b>	
9. Methodological orientation and theory	Phenomenological study (page 6, line 15) with thematic analysis (page 8, line 10)
<b>Participant selection</b>	
10. Sampling	Convenience sampling: patients allocated to intermittent night observations were identified and approached in 5 wards of 4 different hospitals (page 6, line 19-20)
11. Method of approach	Initial contact was made by the nursing staff (page 6, line 24)
12. Sample size	12 participants (page 7, line 4)
13. Non-participation	There were no participants who refused to participate, withdrew consent or dropped out (page 7, line 5-6)
<b>Setting</b>	
14. Setting of data collection	Interviews were conducted in a quiet room within the wards (page 7, line 17)
15. Presence of non-participants	Non-participants were not present with the interviewees during the interview sessions (page 7, line 19-20)

16. Description of sample	Age range 21-64; 4 females and 8 males (page 7, line 5-6), 5 detained under the Mental Health Act, 7 voluntarily admitted; 69.2% White British, 23.1% Black African and 7.7% Asian Indian (page 9, line 4-8)
<b>Data Collection</b>	
17. Interview guide	Interviews were semi-structured using a schedule (page 7, line 10-11) and they also included a survey (page 8, line 23)
18. Repeat interviews	There were no repeat interviews (page 7, line 23)
19. Audio/visual recording	Interviews were audio recorded using the Voice Memos App (IOS) (page 7, line 25)
20. Field notes	Additional field notes were made (page 7, line 25)
21. Duration	Interviews lasted for an average of 30 minutes (page 7, line 26)
22. Data saturation	Data saturation was ensured by asking the patients at the end of each interview if they had anything else to add and by discussing with the principal investigator the limit reached regarding the development of subsequent themes. (page 8, line 1-4)
23. Transcripts returned	Transcripts were not returned to interviewees (page 8, line 4-5)
<b>Domain 3: Analysis and Findings</b>	
<b>Data Analysis</b>	
24. Number of data coders	The data were coded by AP (page 8, line 12)
25. Description of the coding tree	Open coding was implemented. (page 8, line 11). Coding described in methods section (page 8, line 12-19)
26. Derivation of themes	Themes were derived from the data (page 8, line 18-20)
27. Software	N/A
28. Participant checking	There was no formal process of participant checking of research findings.
<b>Reporting</b>	
29. Quotations presented	Yes, specific comments were supported with direct quotes attributed to anonymised participants (see Results section)
30. Data and findings consistent	We have attempted to present our findings in a clear manner, consistent with the data collected.
31. Clarity of major themes	
32. Clarity of minor themes	