Forfattere:
Torbjørn Shields Thomsen[1],
Kira Mygind[1],
Mikkel Brabrand[2],
Thomas Kallemose[1],
Hejdi Gamst-Jensen[1]

[1] Klinisk Forsknings afdeling,
Hvidovre Hospital
[2] Forskningsenhed for Akut
medicin, Odense Universitets
Hospital, Odense, Danmark

Kontaktinformation:
T.s.thomsen@outlook.com
Kira.mygind@regionh.dk
Mikkel.Brabrand@rsyd.dk
Thomas.kallemose@regionh.dk
Hejdi.gamst-jensen@re-
gionh.dk

# Original-, udviklings-, og kvalitets artikler

## Degree of Worry and unscheduled returns to the emergency department within 30 days: An observational prospective cohort study

## Abstract

### BACKGROUND:

Unscheduled return visits to emergency departments are widely used as an indicator of quality of care. However, it is debated which patient-related variables accurately predict unscheduled return visits. This study aimed to investigate whether Degree of Worry, a novel patient-reported outcome, at the emergency department arrival is associated with unscheduled return visits within 30 days after the initial visit.

### AIM:

To investigate the association between a novel patient-reported outcome measure at emergency department arrival and 30-day Unscheduled Return Visits.

### METHOD:

The setting for this observational study was the emergency department at the Copenhagen University Hospital at Hvidovre in the Capital Region of Denmark. Exclusion criteria were lack of consent, <18 years of age, non-Danish speaking, highest triage level, mental impairment, orthopedic injuries, or under the influence of drugs or alcohol. Patients were asked to rate their Degree of Worry on arrival to the emergency department, and 30-day unscheduled return visits were determined by follow-up in medical records. The primary outcome was the association between a high Degree of Worry (7–10) and 30-day unscheduled return visits. This was tested using three logistic regression analyses: 1) crude; 2) semi-adjusted for triage level, sex, age, and chronic disease; and 3) adjusted for self-rated health, triage level, sex, age, and chronic disease.

## RESULTS:

A total of 1,945 patients were screened: 824 were eligible for inclusion and provided informed consent. The association between unscheduled return visits and Degree of Worry was 1) crude: OR (odds ratio) 1.03 (95% CI (confidence interval): 0.73–1.45) for 30-day unscheduled return visits; 2) semi-adjusted: OR 0.98 (95% CI: 0.68–1.41); and 3) fully adjusted including self-reported health: OR 0.91 (95% CI: 0.62–1.32).

## CONCLUSION:

Our analysis showed no significant association between Degree of Worry at emergency department arrival and 30-day unscheduled return visits in any of the three analyses.

## TRIAL REGISTRATION:

Clinicaltrials.gov number: NCT04226040.

### What is already known?

- Degree of Worry (DOW) is associated with higher odds of referral and acute hospital admission when used in pre-hospital telephone triage.

### What is new in the current study?

- In this study we investigated whether DOW was associated with unscheduled return visits (URVs), we found no association between DOW and URVs, which could be due to a lack of statistical power or to the fact that DOW at admission is not related to URVs.

### How is this useful to Danish emergency departments?

- Patient-reported outcome measures are highly relevant in a patient-centered health care system. Therefore, it is useful to uncover which patient-reported outcomes probed for at admission do or do not relate to URVs in a Danish setting.

# Introduction

Unscheduled returns and readmissions (URVs) at hospitals are widely used as an indicator for quality of care [1,2]. Although some return visits are appropriate, existing literature indicates that a number of URVs are preventable and avoidable [2–4]. Despite the knowledge that these preventable URVs exist, very few variables predicting them have been identified [1]. In a European multicenter study, researchers asked 1,398 readmitted patients and their relatives, primary nurse and treating physician whether the readmission was 1) predictable and 2) preventable. In a total of 27.8% of the included individuals, it was determined that readmission was potentially predictable and, in 14.4%, potentially preventable; however, there was very little agreement between patients and health care professionals on the matter of predictability and preventability (kappa values from 0.105 to 0.173). When a patient reported that they were not ready for discharge during the index admission, readmission was more likely to occur [1]. Accurately identifying people who have a higher risk of a URV may help decrease overall URV rates, but, although attempts have been made to create readmission prediction models, no such models are widely used in Europe, mainly due to their American origin (different case mix and non-comparable health care systems) [5–7]. A number of patient-related factors are linked to higher URV rates, e.g. alcohol-related problems, homelessness, and low level of education and social status, but many URV patients represent broader issues, including patient-related social issues and environmental aspects [1,3]. This indicates the relevance of using a patient-report outcome (PRO) marker to identify patients who are likely to return. PRO markers can provide insights into the health, quality of life, and functional status associated with health care or treatment of patients, but all these factors are beyond the scope of the purely physiological parameters of clinical and para-clinical tests [8]. Degree of Worry (DOW) is a PRO developed for telephone triage used by a medical helpline in the Capital Region of Denmark. It is a single-item questionnaire which asks the patient: "How worried are you about the situation you find yourself in today on a scale from 1 to 10, where 1 is minimally worried and 10 is maximally worried?" DOW captures the patient's illness experience, especially with respect to consequence and emotional load (in writing). Additionally, DOW is linked to the duration of symptoms and the patient's perception of the urgency of their situation [9,10]. When used in prehospital telephone triage, a higher DOW is associated with higher odds for referral to face-to-face consultation at emergency departments (EDs) and subsequent admission [9,11]. The DOW question resembles the numeric Rating Scale for Pain and the question "How much pain are you in on a scale from 0 to 10, where 0 is no pain and 10 is the worst imaginable pain?" [12]. The numeric rating scale is used to gain insight into the patent's subjective experience of pain conveyed in an objective manner.

Although the existing literature does not agree on the scale of expenditure of time and resources that URVs represent, it appears to be accepted that URVs do present a burden on health care systems and that some of this burden is preventable [3,4]. Beyond this, very few measurable variables that consistently predict URVs exist [1]. This study aimed to investigate whether DOW is associated with URVs to the ED.

## Objective

The objective of the present study was to evaluate the association between patients' self-reported DOW at arrival and unscheduled returns within 30 days (30-day URVs).

## Methods

### Study design

This study had an observational prospective cohort design, and data collection consisted of a short survey with a 30-day follow-up. The study is reported according to the STROBE guidelines[13].

### Setting

Data were collected at the ED at the Copenhagen University Hospital at Hvidovre, in the Capital Region of Denmark with a catchment population of 553,000 [14]. Data collection was initiated on January 14, 2020, paused temporarily between March 10 and June 2 the same year due to the COVID-19 situation, and resumed on June 2, 2020. Inclusion in this study ended on December 19, 2020, with a 30-day follow-up. Patients were included between 0800 AM and 1100 PM.

### Participants

Patients arriving at the ED were screened for inclusion on arrival; eligible patients were briefed on the project verbally and in writing, and participants provided informed consent. Exclusion criteria were lack of informed consent, <18 years of age, non-Danish speaking, highest triage level (red), mental impairment, orthopedic injuries, or under the influence of drugs or alcohol.

### Ethical considerations

The study was approved by the Data Protection Agency of the Capital Region of Denmark (file no. P-2019-762).

The need for formal approval from the Scientific Ethics Review Committee of the Capital Region of Denmark was waived by the Committee (file no. H-19070022). This study was conducted in accordance with the ethical principles stated in the Declaration of Helsinki[15].

### Data sources

Eligible and consenting participants were interviewed by an assistant – specifically trained nurses and nursing- and medical students, including some of the authors - who followed a structured survey. The interviewer typed the participants' responses into a secure web-based software platform (Research Electronic Data Capture [REDCap]) [16]. The survey included data on socio-demographic indicators (e.g. level of education, work status, and social relationships), DOW, the Brief Illness Perception Questionnaire [17], self-reported health (SRH) and chronic disease. For the present study, data on patients' DOW, SRH, sex, age and chronic illness were used, and information on patients' URV, triage level and death within 30 days was collected manually from the electronic medical records.

The survey was extended to participants before they were seen by the treating physician, preferably after triage. If there was waiting time to be triaged, the survey was carried out before being seen by the nurse. DOW was collected before the first physician encounter to ensure that the rating was unaffected by information relayed by the physician. If data collection was interrupted by the treating physician's primary assessment, data were included if the primary question of DOW had been answered. Patients were only included once.

## Variables

The primary outcome of the study was 30-day URVs [18,19] to any ED in Denmark's Capital Region or Region Zealand.

DOW was measured as the response to the question "How worried are you about the situation you find yourself in today on a scale of 1 to 10, where 1 is minimally worried and 10 maximally worried?" For the analyses, DOW was dichotomized into low (1–6) and high (7–10), based on previous findings of a higher risk of hospital admission at DOW levels of 7–10 and no increased risk at the lower DOW levels [11].

SRH was measured on a five-level scale as the response to the question "How would you rate your health in general: 1) very good, 2) good, 3) moderate, 4) fair or 5) poor?" SRH was analyzed as a categorical variable [20].



Figure 1 - Flowchart of included patients, exclusions and total Unscheduled return visits. DOW = Degree of Worry. PIN = personal identification number.
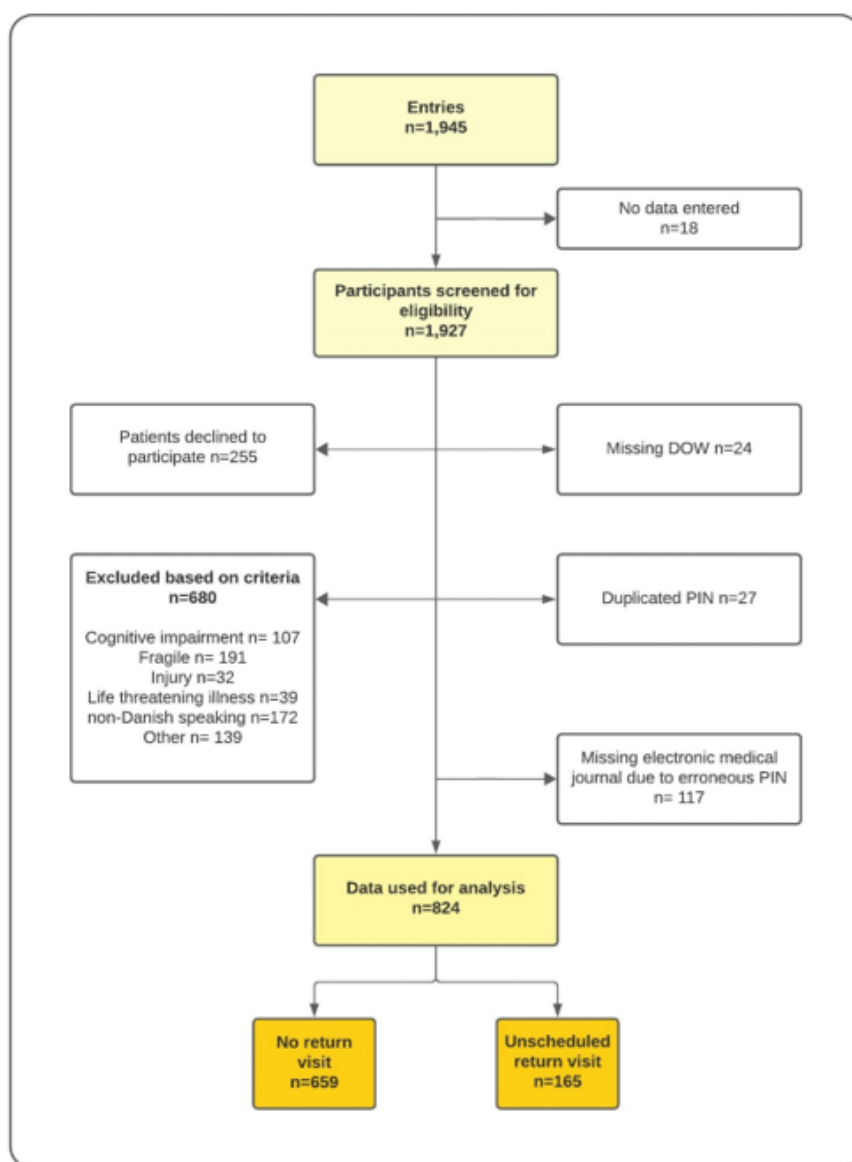
*Table 1 - Descriptive information on Degree of Worry (DOW), self-reported health (SRH), sex, age, triage level, chronic disease, death, and unscheduled return visit (URV) outcome of the study population.*

| | URV[2], no (N=659) | URV, yes (N=165) | Total (N=824) |
|---|---|---|---|
| **DOW[1]** | | | |
| High | 275 (41.7%) | 70 (42.4%) | 345 (41.9%) |
| Low | 384 (58.3%) | 95 (57.6%) | 479 (58.1%) |
| **SRH[3]** | | | |
| 1 (Very good) | 60 (9.1%) | 11 (6.7%) | 71 (8.6%) |
| 2 (Good) | 180 (27.3%) | 20 (12.1%) | 200 (24.3%) |
| 3 (Moderate) | 234 (35.5%) | 63 (38.2%) | 297 (36.0%) |
| 4 (Bad) | 133 (20.2%) | 45 (27.3%) | 178 (21.6%) |
| 5 (Very bad) | 52 (7.9%) | 26 (15.8%) | 78 (9.5%) |
| **Sex** | | | |
| Female | 362 (54.9%) | 93 (56.4%) | 455 (55.2%) |
| Male | 297 (45.1%) | 72 (43.6%) | 369 (44.8%) |
| **Age** | | | |
| >65 | 259 (39.3%) | 88 (53.3%) | 347 (42.1%) |
| 18-65 | 400 (60.7%) | 77 (46.7%) | 477 (57.9%) |
| **Triage level[4]** | | | |
| 2 (Orange) | 84 (13.8%) | 23 (15.3%) | 107 (14.1%) |
| 3 (Yellow) | 329 (54.1%) | 76 (50.7%) | 405 (53.4%) |
| 4-5 (Green) | 195 (32.1%) | 51 (34.0%) | 246 (32.5%) |
| Missing triage | 51 | 15 | 66 |
| **Chronic disease** | | | |
| No | 70 (10.6%) | 13 (7.9%) | 83 (10.1%) |
| Yes | 589 (89.4%) | 152 (92.1%) | 741 (89.9%) |
| **Dead within 30 days** | | | |
| No | 650 (98.6%) | 161 (97.6%) | 811 (98.4%) |
| Yes | 9 (1.4%) | 4 (2.4%) | 13 (1.6%) |

*DOW = Degree of Worry. 2) URV = Unscheduled Return Visit. 3) SRH = Self-Reported Health. 4) Triage levels 1-5. Level 1 patients, the critically ill, were excluded for ethical reasons. Level 5, the lowest level, was rarely used and thus grouped together with level 4.*

Derived from patients' survey answers, age was dichotomized into adults (≤65 years old) and elderly (>65 years old) [11]. The triage level was determined from patient records. Patients with triage level 1, the most urgent triage level, were excluded for ethical reasons. Triage level 5 was rarely used, so triage levels 4 and 5 were grouped together. Thus, triage levels 2–5 were categorized into three groups: level 2, level 3 and levels 4–5, where 2 was the most urgent and 5 the least urgent.

Data on chronic diseases were gathered from patient answers to the initial survey and dichotomized into present or not present. This was done in an effort to secure enough patients in each group, to have sufficient power to detect a potential difference. The following diseases were considered chronic diseases, based on a survey from the Danish National Centre for Societal Research [21]: asthma, allergy, acute myocardial infarction, cancer, stroke, diabetes, hypertension, angina pectoris, COPD, rheumatoid arthritis, osteoarthritis, osteoporosis, migraine, herniated discs, and psychiatric disorders.

The number of URVs was found by going through patient records to determine whether they had a visit that was unscheduled within the follow-up period. Death was not considered a URV, and patients who passed away were not counted as URVs unless they had a return visit prior to death.

All included patient records were checked by a second person to ensure accuracy of results. For data with disagreements (n = 49, 5.2%), the data was discussed by the two reviewers until consensus was reached. In case of disagreements, these were discussed with HGJ until final consensus. Consensus was reached for all data

## Statistical methods

The distribution of variables was presented as frequencies with percentages. The association between DOW and 30-day URVs was analyzed by logistic regression models. Three models were fitted: 1) crude, 2) semi-adjusted (adjusted for sex, age, triage level and chronic diseases), and 3) fully adjusted (adjusted for SRH, sex, age, triage level and chronic diseases) to access potential confounding effects on DOW based on the available literature [9,18,19,22–24]. Estimates from the models are presented as odds ratios (ORs) with the corresponding 95% confidence intervals (CIs) and p-value. A p-value of less than 0.05 was considered statistically significant. All analysis was done in R 4.1.2 [25].

## Results

A total of 1,945 potential participants were screened, and 824 were included in the final analysis (Figure 1), 165 (20.0%) of which had a URV within 30 days. Among URVs, 70 (42.4%) had a high DOW at index admission (Table 1). More female than male patients presented with a URV (56% females and 44% males), and more than half of the patients with a URV were above the age of 65 (n= 88, 53%). A majority of patients with a URV were assigned a non-urgent triage level (n= 127, 84.7%) at their index visit, and the vast majority of patients with URVs had one or more chronic diseases (n=152, 92.1%). Likewise, more patients with URVs rated their general health as being bad or very bad (n=71, 43.6%) compared to those who did not have a URV (n=185, 28.1%). Of those who died within 30 days, a respective total of 2.4% of patients with a URV and 1.4% without a URV died.

Association between DOW and URVs showed an OR of 1.03 (CI=0.73:1.45, p = 0.872) for high DOW compared to low DOW. The semi-adjusted model had an OR of 0.98 (CI=0.68:1.41, p = 0.920) and the fully adjusted model an OR of 0.91 (CI=0.62:1.32, p = 0.616).
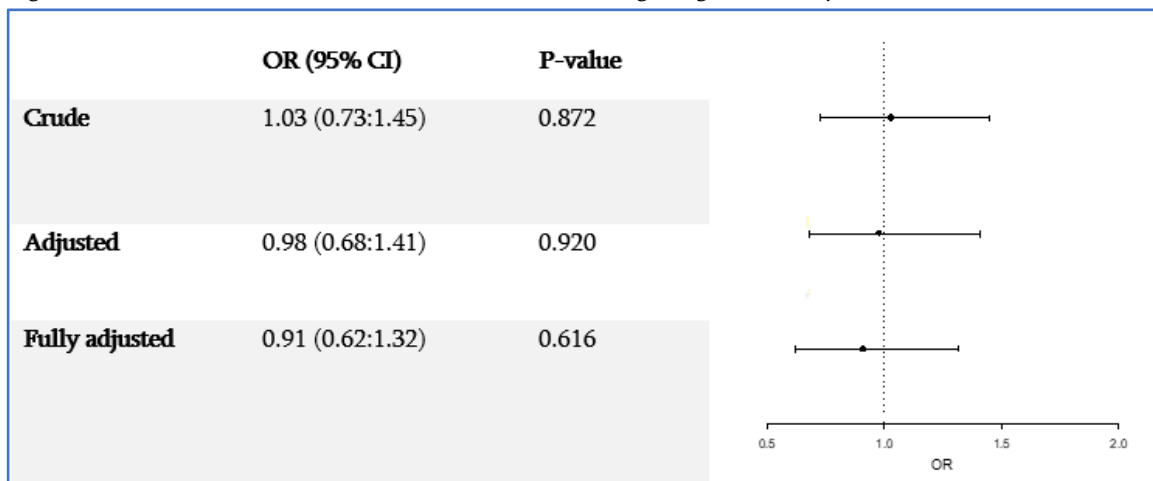
## Discussion

Association between DOW and URVs showed OR estimates close to 1 and with wide confidence intervals, making interpretation of our findings difficult.

Our study tested the hypothesis that a high DOW at admission was associated with 30-day URVs to the ED. We performed three analyses: 1) crude: 2) adjusted for sex, age, triage level and chronic disease; and 3) adjusted for SRH, sex, age, triage level and chronic disease. We found no statically significant association between a high DOW at index admission and 30-day URVs in all three analyses, with OR estimates close to 1, but wide confidence intervals also made interpretation difficult.

URVs to EDs are associated with several factors [19,22]. One of the most important reasons for self-referral to an ED, worldwide, is health concerns [26]. Using an objective scale to measure patients' worry makes it possible to explore the relationship between DOW and URVs further. In this context, we expected to find increased odds of URVs in patients with a high DOW. However, because we collected DOW data at the index visit, before patients were seen by a physician, this may have influenced the results. We did this so that the DOW would be unaffected by the first consultation with a physician. DOW gathered immediately before patient discharge may be more relevant to URVs because it might reflect patients' physiological and psychosocial resources at discharge, factors which are known to affect help-seeking behavior and self-referral to the ED [26]. Consequently, DOW collected before patients are seen by a physician and before start of treatment may be less directly linked to URVs. Conversely, DOW collected after treatment or at discharge after clarification from the treating doctor may show a stronger association between DOW and URVs.

Figure 2. Odds ratios (ORs) for unscheduled return visits for high Degree of Worry.



| | OR (95% CI) | P-value |
|---|---|---|
| Crude | 1.03 (0.73:1.45) | 0.872 |
| Adjusted | 0.98 (0.68:1.41) | 0.920 |
| Fully adjusted | 0.91 (0.62:1.32) | 0.616 |

Results of analyses: 1) crude; 2) adjusted for sex, age, triage level and chronic disease; and 3) fully adjusted for self-rated health, sex, age, triage level and chronic disease.

Further, we investigated the effects of SRH, sex, age, triage level and chronic disease in an adjusted analysis, the results of which were insignificant (OR=0.91, 95% CI=0.62:1.32) (Figure 2). A patient's self-ratings of health are based on their current subjective physiological state [27], influenced by – among other things – age, general health and earlier health status [27], as well as chronic disease [11]. After adjusting the model for sex, age, triage level and chronic disease, the OR for DOW changes from 1.03 to 0.98, possibly indicating a combined cofounding effect from these parameters. DOW seeks to quantify a patient's perception of subjective urgency in their current situation [9]; thus it is possible that SRH also has a confounding effect on DOW. The change in the DOW OR to 0.91 when the model is additionally adjusted for SRH may also indicate that SRH has a confounding effect on DOW.

This study has limitations, and bias may have come from several sources. There will be an inherent non-response bias – patients can opt out at any time – if non-responders differ significantly from responders. In fact, non-respondents to health surveys have been found to have significantly increased morbidity compared with non-responders [28], and because morbidity increases odds of URVs [29], this may be a source of bias. Mortality bias may be present, but there were relatively few dead (1.5%) within 30 days, so excluding them from the analysis would be unlikely to change the results. These biases could affect the generalizability of the findings. We avoided information bias by double-checking the variables extracted, using two persons who had to reach consensus on any disagreement, which increased the external validity of the study. Orthopedic injuries were excluded because our study aimed to explore patients where their trajectory was not as straightforward, as some orthopedic injuries may be.

The presence of COVID-19 during the planned inclusion period caused all non-essential staff to be sent home, which resulted in a shorter inclusion period and thus fewer patients being included, which produced a less accurate result than would otherwise have been obtainable. Dichotomizing DOW into high and low instead of analyzing it as a continuous variable may be a limitation, as information is lost, possibly making it more difficult to detect an association [30,31]. Conversely, dichotomization of a variable can be useful in clinical medicine, since it makes practical use of the variable and interpretation of results easier [30].

Approximately 12% of the patients' personal identification numbers (PINs) were entered erroneously when they were typed into the database, decreasing our sample size and thus the accuracy of our results. Unfortunately, there was no way to recover these PINs, and because they were the only identifiers of these patients, no data could be collected from their medical records.

In order for a study to be externally valid, the sample population must have characteristics similar to those of the population one tries to generalize to [32]. Despite some biases that could not be eliminated, we believe our results are generalizable to ED patients in countries with health care systems that function comparably to the Danish one, in similar patient groups to the one included in our study. Future studies should explore the fluctuation of DOW during the illness trajectory and evaluate the association between DOW at discharge and URVs and the

general applicability of DOW as a PRO marker in emergency medicine.

## Conclusion

Patients with a high DOW at index admission were not found to be significantly associated with a higher rate of 30-day URVs in either crude or adjusted analyses. Estimates from the study sample indicated very little possible association between DOW and URVs; however, given the high degree of uncertainty based on the wide confidence intervals, no clear interpretation can be made of the study results.

## References

1.  Van Galen LS, Brabrand M, Cooksley T, *et al.* Patients' and providers' perceptions of the preventability of hospital readmission: A prospective, observational study in four European countries. *BMJ Qual Saf* 2017;26:958–69. doi:10.1136/bmjqs-2017-006645

2.  Danske Regioner. Databasen for Akutte Hospitalskontakter. 2019;:1–56.https://www.sundhed.dk/content/cms/59/67559_dah-aarsrapport-2018-offentlig-version.pdf (accessed 2 Jan 2021).

3.  Baer RB, Pasternack JS, Zwemer FL. Recently Discharged Inpatients as a Source of Emergency Department Overcrowding. *Acad Emerg Med* 2001;8:1091–4. doi:10.1111/j.1553-2712.2001.tb01121.x

4.  Pham JC, Kirsch TD, Hill PM, *et al.* Seventy-two-hour returns may not be a good indicator of safety in the emergency department: A national study. *Acad Emerg Med* 2011;18:390–7. doi:10.1111/j.1553-2712.2011.01042.x

5.  Van Walraven C, Dhalla IA, Bell C, *et al.* Derivation and validation of an index to predict early death or unplanned readmission after discharge from hospital to the community. *Cmaj* 2010;182:551–7. doi:10.1503/cmaj.091117

6.  Donze JD, Williams M V., Robinson EJ, *et al.* International validity of the HOSPITAL score to predict 30-day potentially avoidable hospital readmissions. *JAMA*

*Intern Med* 2016;176:496–502. doi:10.1001/jamainternmed.2015.8462

7.  Donze J, Aujesky D, Williams D, *et al.* Potentially avoidable 30-day hospital readmissions in medical patients: Derivation and validation of a prediction model. *JAMA Intern Med* 2013;173:632–8. doi:10.1001/jamainternmed.2013.3023

8.  Weldring T, Smith SMS. Article Commentary: Patient-Reported Outcomes (PROs) and Patient-Reported Outcome Measures (PROMs). *Heal Serv Insights* 2013;6:HSI.S11093. doi:10.4137/HSI.S11093

9.  Gamst-Jensen H, Huibers L, Pedersen K, *et al.* Self-rated worry in acute care telephone triage: a mixed-methods study. *Br J Gen Pract* 2018;68:e197–203. doi:10.3399/bjgp18X695021

10. Thilsted SL, Egerod I, Lippert FK, *et al.* Relation between illness representation and self-reported degree-of-worry in patients calling out-of-hours services: a mixed-methods study in Copenhagen, Denmark. *BMJ Open* 2018;8:e020401. doi:10.1136/bmjopen-2017-020401

11. Gamst-Jensen H, Frischknecht Christensen E, Lippert F, *et al.* Self-rated worry is associated with hospital admission in out-of-hours telephone triage – a prospective cohort study. *Scand J Trauma Resusc Emerg Med* 2020;28:53. doi:10.1186/s13049-020-00743-8

12. Bijur PE, Latimer CT, Gallagher EJ. Validation of a verbally administered numerical rating scale of acute pain for use in the emergency department. *Acad Emerg Med* 2003;10:390–2. doi:10.1197/aemj.10.4.390

13. STROBE statement - Checklist of items that should be included in reports of observational studies (© STROBE Initiative). Int. J. Public Health. 2008;53:3–4. doi:10.1007/s00038-007-0239-9

14. Region Hovedstaden. Hospitals- og Psykiatriplan 2020. 2011;:1–93.https://www.hvidovrehospital.dk/nyt-hospital-hvidovre/Documents/Hospitalsplan 2020.pdf (accessed 3 Jan 2021).

15. World Medical Association Declaration of Helsinki. JAMA. 2013;310:2191. doi:10.1001/jama.2013.281053

16. Harris PA, Taylor R, Minor BL, *et al.* The REDCap consortium: Building an international community of software platform partners. *J Biomed Inform* 2019;95:103208. doi:10.1016/j.jbi.2019.103208

17. Broadbent E, Petrie KJ, Main J, *et al.* The Brief Illness Perception Questionnaire. *J Psychosom Res* 2006;60:631–7. doi:10.1016/j.jpsychores.2005.10.020

18. Rising KL, Victor TW, Hollander JE, *et al.* Patient Returns to the Emergency Department: The Time-to-return Curve. *Acad Emerg Med* 2014;21:864–71. doi:10.1111/acem.12442

19. Trivedy CR, Cooke MW. Unscheduled return visits (URV) in adults to the emergency department (ED): a rapid evidence assessment policy review. *Emerg Med J* 2015;32:324–9. doi:10.1136/emermed-2013-202719

20. Idler E, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. *J Health Soc Behav* 1997;38:21–37.

21. Hvordan har du det? Syddanks Universitet, Statens Institut for Folkesundhed. 2010.https://www.sdu.dk/sif/-/media/images/sif/projekter/projekter_dokumenter/susy/susy_2010_selvadministreret_spoergeskema.pdf (accessed 3 Jan 2021).

22. Hayward J, Hagtvedt R, Ma W, *et al.* Predictors of Admission in Adult Unscheduled Return Visits to the Emergency Department. *West J Emerg Med* 2018;19:912–8. doi:10.5811/westjem.2018.38225

23. Carpenter CR, Shelton E, Fowler S, *et al.* Risk Factors and Screening Instruments to Predict Adverse Outcomes for Undifferentiated Older Emergency Department Patients: A Systematic Review and Meta-analysis. *Acad Emerg Med* 2015;22:1–21. doi:10.1111/acem.12569

24. Wu C-L, Wang F-T, Chiang Y-C, *et al.* Unplanned Emergency Department Revisits within 72 Hours to a Secondary Teaching Referral Hospital in Taiwan. *J Emerg Med* 2010;38:512–7. doi:10.1016/j.jemermed.2008.03.039

25. (2021)., R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna A. No Title. https://www.r-project.org/

26. Kraaijvanger N, Van Leeuwen H, Rijpsma D, *et al.* Motives for self-referral to the emergency department: A systematic review of the literature. *BMC Health Serv Res* 2016;16:1–19. doi:10.1186/s12913-016-1935-z

27. Jylhä M. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Soc Sci Med* 2009;69:307–16. doi:10.1016/j.socscimed.2009.05.013

28. Christensen AI, Ekholm O, Gray L, *et al.* What is wrong with non-respondents? Alcohol-, drug- and smoking-related mortality and morbidity in a 12-year follow-up study of respondents and non-respondents in the Danish Health and Morbidity Survey. *Addiction* 2015;110:1507–14. doi:10.1111/add.12939

29. Hutchinson CL, McCloughen A, Curtis K. Incidence, characteristics and outcomes of patients that return to Emergency Departments. An integrative review. Australas. Emerg. Care. 2019;22:47–68. doi:10.1016/j.auec.2018.12.003

30. Altman DG, Royston P. The cost of dichotomising continuous variables. *BMJ* 2006;332:1080.1. doi:10.1136/bmj.332.7549.1080

31. Bangdiwala SI. Dichotomising dangers. *Int J Inj Contr Saf Promot* 2014;21:298–300. doi:10.1080/17457300.2014.940771

32. Kukull WA, Ganguli M. Generalizability: The trees, the forest, and the low-hanging fruit. *Neurology* 2012;78:1886–91. doi:10.1212/WNL.0b013e318258f812

Accepteret til publikation: 09.05.2024
Thomsen et al: Degree of Worry and unscheduled returns to the emergency department within 30 days: An observational prospective cohort study
Dansk Tidsskrift for Akutmedicin, 2024, Vol. 7, s. 3-13
PUBLICERET AF DET KGL. BIBLIOTEK FOR DANSK TIDSSKRIFT FOR AKUTMEDICIN
13 af 35