

Open Doors in Psychiatry: A Text Mining Approach to Patient Perspectives

Timur Liwinski, Robert Davidson, Jan Sarlon, Rainer Gaupp, Lukas Imfeld,
Annette B. Brühl, Marc Vogel, Christian G. Huber, Undine E. Lang

Submitted to: Journal of Medical Internet Research
on: March 10, 2025

Disclaimer: © The authors. All rights reserved. This is a privileged document currently under peer-review/community review. Authors have provided JMIR Publications with an exclusive license to publish this preprint on its website for review purposes only. While the final peer-reviewed paper may be licensed under a CC BY license on publication, at this stage authors and publisher expressly prohibit redistribution of this draft paper other than for review purposes.

Table of Contents

Original Manuscript..... 4

Supplementary Files..... 22

 Figures 23

 Figure 1..... 24

 Figure 2..... 25

 Figure 3..... 26

 Figure 4..... 27

 Figure 5..... 28

Open Doors in Psychiatry: A Text Mining Approach to Patient Perspectives

Timur Liwinski¹; Robert Davidson¹; Jan Sarlon¹; Rainer Gaupp¹; Lukas Imfeld¹; Annette B. Brühl¹; Marc Vogel¹; Christian G. Huber¹; Undine E. Lang¹

¹ Universitäre Psychiatrische Kliniken Basel Basel CH

Corresponding Author:

Timur Liwinski

Universitäre Psychiatrische Kliniken Basel
Wilhelm-Klein-Strasse 27
Basel
CH

Abstract

Background: Open-door policies are recommended to reduce coercion in psychiatric wards, but evidence integrating patient perspectives on psychiatric facility openness and safety measures is limited. Traditional qualitative frameworks often lack the scope necessary to fully capture these views. We hypothesized that patients would express a preference for open-door policies and demonstrate an apprehensive stance toward closed-door wards, with an emphasis on autonomy and dignity in their care.

Objective: To examine psychiatric patients' perspectives on open-door policies and closed-ward treatment.

Methods: This study utilized a hybrid questionnaire survey conducted at the University Psychiatric Clinics (UPK) Basel in September 2023, which examined psychiatric service utilization. Key factors from a meta-review, including ward relationships, environment, autonomy, legal status, coercion, perceived care entitlement, and expectations at admission and discharge, were included. A text mining approach using Latent Dirichlet Allocation (LDA), a Bayesian probability-based algorithm, was applied to identify latent topics in the textual data.

Results: The final sample included 604 individuals, with a response rate of 19.1%. A significant majority (63.8%) rated open-door treatment as "very important" (10 out of 10 on a Likert scale). In contrast, only 21.0% of participants expressed willingness to accept treatment in locked wards, with 70.4% explicitly rejecting it. Topic modeling revealed key themes of institutional critiques, restriction, confinement, social disconnection, and autonomy as a central demand in patient sentiments regarding closed-ward treatment.

Conclusions: Our study underscores the importance of open-door policies in psychiatric care from the patient perspective, highlighting autonomy, trust, and engagement in treatment. Aligning institutional practices with patient priorities may enhance satisfaction and treatment outcomes.

(JMIR Preprints 10/03/2025:73610)

DOI: <https://doi.org/10.2196/preprints.73610>

Preprint Settings

1) Would you like to publish your submitted manuscript as preprint?

✓ **Please make my preprint PDF available to anyone at any time (recommended).**

Please make my preprint PDF available only to logged-in users; I understand that my title and abstract will remain visible to all users.
Only make the preprint title and abstract visible.

No, I do not wish to publish my submitted manuscript as a preprint.

2) If accepted for publication in a JMIR journal, would you like the PDF to be visible to the public?

✓ **Yes, please make my accepted manuscript PDF available to anyone at any time (Recommended).**

Yes, but please make my accepted manuscript PDF available only to logged-in users; I understand that the title and abstract will remain visible to all users.

Yes, but only make the title and abstract visible (see Important note, above). I understand that if I later pay to participate in a JMIR journal, my full manuscript will be made available to all users.

No. Please do not make my accepted manuscript PDF available to anyone.

Original Manuscript

Open Doors in Psychiatry: A Text Mining Approach to Patient Perspectives

Timur Liwinski^{1,2,3}, Robert Davidson^{1,3}, Jan Sarlon^{1,2}, Rainer Gaupp¹, Lukas Imfeld¹, Annette B. Brühl^{1,2}, Marc Vogel^{1,2}, Christian G. Huber^{1,2,4}, Undine E. Lang^{1,2,4}

¹University Psychiatry Clinics (UPK)

²University of Basel

³These authors contributed equally

⁴These authors share the last-authorship

Correspondence

Dr. Timur Liwinski

Timur.Liwinski@upk.ch

Address: Wilhelm Klein-Strasse 27, 4002 Basel, Switzerland

Phone: +41 61 325 51 11

Abstract

Background

Open-door policies are recommended to reduce coercion in psychiatric wards, but evidence integrating patient perspectives on psychiatric facility openness and safety measures is limited. Traditional qualitative frameworks often lack the scope necessary to fully capture these views. We hypothesized that patients would express a preference for open-door policies and demonstrate an apprehensive stance toward closed-door wards, with an emphasis on autonomy and dignity in their care.

Objective

To examine psychiatric patients' perspectives on open-door policies and closed-ward treatment.

Methods

This study utilized a hybrid questionnaire survey conducted at the University Psychiatric Clinics (UPK) Basel in September 2023, which examined psychiatric service utilization. Key factors from a meta-review, including ward relationships, environment, autonomy, legal status, coercion, perceived care entitlement, and expectations at admission and discharge, were included. A text mining approach using Latent Dirichlet Allocation (LDA), a Bayesian probability-based algorithm, was applied to identify latent topics in the textual data.

Results

The final sample included 604 individuals, with a response rate of 19.1%. A significant majority (63.8%) rated open-door treatment as "very important" (10 out of 10 on a Likert scale). In contrast, only 21.0% of participants expressed willingness to accept treatment in locked wards, with 70.4% explicitly rejecting it. Topic modeling revealed key themes of institutional critiques, restriction, confinement, social disconnection, and autonomy as a central demand in patient sentiments regarding closed-ward treatment.

Conclusion

Our study underscores the importance of open-door policies in psychiatric care from the patient perspective, highlighting autonomy, trust, and engagement in treatment. Aligning institutional practices with patient priorities may enhance satisfaction and treatment outcomes.

Keywords

Open-door policy; psychiatric care; autonomy; patient perspectives; text mining; coercion; ward environment.

Introduction

The management of psychiatric inpatients varies widely across European healthcare systems, with containment strategies and policies for handling violence often shaped more by local tradition than by empirical evidence [1–3]. Non-pharmacological interventions for disruptive or aggressive behavior remain largely unsupported by controlled studies [2], and the use of locked wards continues to be a contentious issue, marked by significant institutional and regional differences [3]. Locked wards are frequently described as shifting from therapeutic care to custodial containment, with restrictive policies being linked to increased incidents of aggression, self-harm, and coercive interventions, potentially reinforcing the very behaviors they aim to prevent [4–12]. The physical and procedural constraints of these settings—locked doors, limited access to therapeutic spaces, and rigid institutional routines—have been reported to compromise privacy, exacerbate frustration, and reduce opportunities for meaningful engagement in care [13–18].

Despite the central role that patient experiences play in shaping psychiatric care, empirical research capturing their perspectives remains scarce [19,20]. Understanding how inpatients perceive locked environments is essential for informing policies that balance safety with autonomy. In this study, we conducted a survey at the University Psychiatric Clinics (UPK) Basel, Switzerland, to explore patients' views on open-door policies, accessibility to therapy spaces, and interactions with clinical staff. This initiative was undertaken as part of a feasibility assessment for a new construction project within the Adult Psychiatry Department, prompting a revision of its operational concept.

The usage of textual data sets is growing in the psychological sciences since they may offer significant insights on patterns and correlations pertaining to human behavior and attitudes [21]. To systematically analyze patient narratives, we employed topic modeling, a machine learning approach that identifies latent themes in large textual datasets. Unlike traditional qualitative methods, which are labor-intensive and limited in scope, text mining using probabilistic topic models allows for the efficient processing of extensive free-text responses [22]. Through this approach, we aimed to derive a data-driven understanding of patient perspectives on locked wards, providing empirical insights that could inform psychiatric care practices and institutional policy. Based on the existing literature and the growing emphasis on patient-centered care, we hypothesized that patients would express a preference for open-door policies and a more apprehensive stance toward closed-door wards, emphasizing the significance of autonomy and dignity in their care.

Methods

Psychiatric facility

The University Psychiatric Clinics (Universitäre Psychiatrische Kliniken, UPK) at the University of Basel, Switzerland, provides psychiatric services to both inpatient and outpatient populations in the city of Basel and its surrounding regions, serving approximately 190,000 residents. Over the study duration, the clinic for adults consistently maintained a bed capacity of 277 for inpatient care. Our center adopts a "Track Units" organizational model, structured in a decentralized and modular manner based on symptoms and syndromes. This design facilitates tailored treatment approaches that address the unique stage-specific requirements of patients across both inpatient and outpatient sectors [23].

Questionnaire-derived data

This analysis is based on a hybrid questionnaire survey conducted in September 2023 at the UPK, examining patient preferences for psychiatric inpatient settings. The survey incorporated key factors from a meta-review, including ward relationships, environment, autonomy, legal status, coercion, perceived care entitlement, and expectations at admission and discharge [24]. An interdisciplinary team of physicians, nurses, psychologists, former patients and peers, quality experts, and a hospital architecture specialist developed the questionnaire. It covered four key areas—person, room, ward, and clinic—using Likert scales, multiple-choice, and binary questions to assess patient needs and preferences, supplemented by open-ended questions for deeper insights. A stratified random sample, encompassing 3163 individuals who had undergone clinic experiences from April 2021 to August 2023, was drawn from the patient registry of the hospital. The survey instruments were disseminated among the selected individuals, with electronic invitations sent to those possessing an accessible email address (44.8%), and paper questionnaires dispatched, along with prepaid return envelopes, to individuals without email access. The online questionnaire was administered using the web-based Enterprise Feedback Suite (EFS) by Tivian [25]. Survey data collection continued until the end of October, with student assistants utilizing Remark Office OMR (Optical Mark Recognition) for extracting data from the paper questionnaires [26].

Text mining approach

The extraction of substantial quantities of information from accumulated document collections presents significant challenges in terms of labor and time expenditure. Topic modeling offers an efficient means of discerning relevant topics, thereby mitigating the resource-intensive nature of manual information extraction processes. It represents a widely utilized probabilistic framework in text mining, offering a computational approach for elucidating latent thematic structures within document corpora through the identification of statistically significant word co-occurrence patterns [22]. Latent Dirichlet allocation (LDA), a machine learning

methodology that employs Bayesian probability-based algorithms to identify latent (unobserved) "topics" based on the co-occurrence of words within a corpus of text, is one frequently used NLP tool in health research. By estimating both document-topic probabilities—the likelihood that any document is generated by a particular topic—and word-topic probabilities—the likelihood that any word is generated by a particular topic—LDA finds latent themes within a corpus [27]. LDA is capable of capturing unique structures in natural language data, as it is based on unsupervised learning, which is capable of performing more intricate tasks, in contrast to traditional text analysis methods like interpretivist text analysis and systematic qualitative coding.

Data analysis

All analyses were performed using R version 4.4.0 (2024-04-24, The R Foundation for Statistical Computing). The analysis utilized the tm [28] and tidytext [29] R packages to process the text data. Text preprocessing was performed to clean the data, including steps such as converting to lowercase, removing punctuation, numbers, stopwords, and uninformative words, as well as consolidating singular and plural forms. To enhance visual clarity, singular and plural forms were consolidated into a single lexical unit. After cleaning, a document term matrix was constructed using the tm package to represent the frequency of terms across documents. LDA was implemented to identify latent topics within the corpus. The topicmodels package [30] was used to perform the LDA modeling, with the number of topics (k) initially determined through perplexity analysis. Top terms for each topic were identified by selecting those with the highest beta values. The resultant topics were visualized as word cloud representations using the wordcloud2 package, with the font size of each term proportional to its probability within the respective topic distribution. This approach facilitates the rapid identification of salient terms and their relative importance within each thematic cluster, providing an intuitive representation of the latent semantic structures identified by the model. To elucidate the interrelationships among identified topics, we employed hierarchical clustering analysis on the topic-word matrix. This matrix was binarized, with binary values (1 or 0) indicating the presence or absence of a word in a given topic, respectively. The dissimilarity between topics was quantified using the Jaccard distance metric, and an agglomerative clustering algorithm with average linkage was applied to generate a dendrogram representing the hierarchical structure of topic clusters. Based on the clustering results and the initial thematic analysis, the final number of topics (k) was determined through a balanced approach, integrating both data-driven algorithmic insights and human interpretative reasoning.

Ethics

The questionnaire was designed and the patient survey was conducted as part of a clinical quality development project to enable an optimal design process for future clinic infrastructure. For this, ethical approval was not required. As data analyses for the present study only involved secondary data with no identifiable personal information, the current research project was also exempt from an ethics committee

vote according to current national regulations. A non-responsibility declaration from the Ethics Committee Northwest and Central Switzerland (EKNZ) was obtained for this study (Req-2024-00502).



Results

Quantitative Survey Findings

The final sample comprised 604 individuals, yielding a response rate of 19.1%. 55% of the participants in the study self-identified as female. The age distribution of participants spanned from 16–25 years (12.1%), 26–40 years (26.9%), 41–55 years (28.4%), 56–65 years (20.3%), 66–70 years (4.6%), to over 70 years (7.7%), with the largest proportion in the 41–55 age group.

A significant majority of respondents highlighted the importance of open-door treatment in psychiatric care, with approximately two-thirds (63.8%) rating it as "very important" (10 out of 10 on a Likert scale; Figure 1a). In contrast, only 21.0% of participants expressed willingness to voluntarily accept treatment in locked wards, while the overwhelming majority (70.4%) explicitly rejected this option (Figure 1b).

Topic Modeling of Open-Ended Responses

LDA analysis of open-ended survey responses identified 5 latent topics, with model selection guided by perplexity minimization (Figure 2).

Thematic analysis of the five most salient topics, visualized through probabilistic association of words with topics (beta values) derived from the LDA model (Figure 3), revealed nuanced patient perspectives on open and locked ward environments.

Hierarchical Clustering and Thematic Relationships

Hierarchical clustering of the topic-word matrix (Figure 4) grouped the five dominant themes into two clusters, revealing conceptual linkages in patient narratives. Based on the clustering results and the initial thematic interpretation, the optimal number of topics was determined as $k = 2$, identifying two overarching themes within the patient narratives (Figure 5).

Final Topic Analysis

Topic 1 - Restriction and Institutionalization (Figure 5, t1): The recurrence of terms such as "locked," "trapped," "confined," and "imprisoned" suggests an underlying sense of entrapment and loss of control, which can contribute to feelings of helplessness and distress. The rigid structure of the ward, governed by institutional rules limiting movement and requiring permission for basic activities, appears to intensify a perceived lack of agency. This restriction is not only physical but also psychological, reinforcing a sense of

stagnation and dependency. The prevalence of these terms suggests a perception of physical and psychological constraint, where institutional rules regulating movement and outdoor access contribute to feelings of disempowerment. The co-occurrence of terms related to “permission” and “restriction” indicates a broader concern regarding autonomy, as patients frequently reference the necessity of approval for routine activities. There is a recurring longing for spending basic time outdoors in the “park,” going for a “walk,” and also a sense of lack of “fresh air.” Additionally, terms associated with “isolation” and “separation” highlight the role of limited social contact (“friends”) in shaping patients’ emotional experiences. The patterns observed suggest that patients often conceptualize their environment as restrictive, with an underlying emphasis on a longing for greater agency and access to the outside world.

Topic 2 - Autonomy and Self-Determination (Figure 5, t2): Anchored by terms such as “freedom,” “loss,” and “movement,” this theme reflects complementary to topic 1 patients’ concerns about restrictions on personal agency within locked psychiatric wards and their strive toward “freedom”, autonomy, and self-determination. Many respondents articulated a sense of “loss”—not only of physical mobility but also of control over their daily lives. Policies enforcing rigid schedules, such as fixed meal times and supervised activities, were perceived as limiting self-determination. The prominence of “self-determination” in the topic structure underscores the importance patients placed on having an active role in decisions affecting their treatment and daily routines. Additionally, the presence of “nature” suggests that access to outdoor environments was seen as integral to autonomy and well-being. Overall, this theme highlights the tension between institutional policies designed for safety and patients’ fundamental need for independence, reinforcing calls for more open, flexible, and participatory care models.

Discussion

The findings of this study underscore the importance of patient perspectives on psychiatric ward policies, with a strong preference for open-door approaches. Locked wards were viewed by many respondents as punitive and counterproductive, contradicting principles of dignity, autonomy, and therapeutic efficacy. A significant source of dissatisfaction was the ward environment itself, with patients frequently reporting that closed units exacerbated stress, isolation, and disempowerment. These concerns were clustered with broader critiques of psychiatric care systems, where physical restrictions were linked to institutional challenges such as rigid hierarchies and limited patient involvement in decision-making. Patients strongly favored open-door environments, associating unrestricted movement with enhanced autonomy, dignity, and engagement in treatment. Conversely, supporters of locked wards emphasized safety concerns, though this perspective was held by a minority. Almost two-thirds of respondents reported that restricted movement increased stress and hindered recovery, particularly among those with prolonged admissions. Notably, perceptions of compromised self-determination reflected a misalignment between institutional priorities and patient needs.

Our findings are consistent with existing literature, which demonstrates that patient satisfaction and the overall environment in psychiatric settings are significantly improved in open wards, where there is an increased sense of autonomy and enhanced privacy [9,31]. The perceived drawbacks of closed wards are consistent with a qualitative survey of 170 patients, where respondents reported that closed-door environments in psychiatric settings led them to feel "confined," increased their dependence on staff, and negatively impacted their emotional well-being [32]. Similarly, our findings align with concerns raised by staff, who noted that closed-door environments "make patients feel depressed," "confined," and "create additional work." This survey of acute psychiatry staff also linked locked wards to increased patient aggression, lower treatment satisfaction, and greater symptom severity [33].

Open door policies require active patient involvement in treatment, with flexibility in strategies to address individual needs. Establishing mutual trust between patients and therapists is essential for effective care. Implementing open-door policies in psychiatric settings may contribute to a more beneficial ward atmosphere and a more patient-centered care model [9,31,34–36]. This practice also supports a more professionalized patient assessment [10,37], a reduction in coercive measures [36,38–40], a decrease in appeals against patients' stays [41], and an improvement in psychosocial functioning [42]. Moreover, recent evidence indicates that the presence of open doors in psychiatric units does not lead to an increase in absconding or suicide rates, challenging previous assumptions associated with locked doors in psychiatry [43]. A recent study provided data-driven evidence supporting the efficacy of open-door policies. This pragmatic, randomized controlled, non-inferiority trial compared two open-door wards with three treatment-

as-usual acute psychiatric wards at Lovisenberg Diaconal Hospital in Oslo, Norway [44]. The results demonstrated that the open-door policy was non-inferior to treatment-as-usual across all outcomes. This pioneering research emphasizes the value of empirical, data-driven approaches to evaluating open-door policies, as opposed to purely ideological perspectives [44].

A systematic review of the types and proportions of antecedents to violence and aggression in psychiatric inpatient settings found that limiting patients' freedoms, through restrictions or denial of requests, was the most common precursor to incidents, accounting for approximately 25% of all identified antecedents [45]. The reduction of coercive measures and the implementation of an open-door policy in psychiatric units hinge on several critical factors. Avoidance of overcrowding among severely ill patients is paramount, with emphasis placed on protecting the private sphere [46]. Strengthening therapeutic offerings, enhancing patient orientation [34,47], ensuring approachability of staff [45,46,48], and preserving the personal space and autonomy of patients are integral components. Additionally, fostering a positive ward atmosphere and addressing patients' needs through inclusion are fundamental prerequisites for delivering high-quality care [34,45–49]. The implementation of an open-door policy contributes to a care approach that is more patient-centered and recovery-oriented. This, in turn, leads to a consistent reduction in the use of seclusion and forced medication [36,39].

Despite compelling international evidence supporting the effectiveness of care models such as Safewards and the implementation of open-door policies in enhancing the inpatient environment and reducing the necessity for containment and restrictive practices [50], a judicious consideration of evidence-based arguments for closed-door policies tailored to specific patient populations remains imperative. Some data suggest that the utilization of locked doors aids staff in delivering structured and secure care [51,52], as indicated in a study where advantages identified by patients fell into six categories, with five of these aligning with responses from the staff. These included protection against external factors, exerting control over patients, facilitating secure and efficient care, and providing safety and relief for significant others or relatives [53]. Furthermore, the rationales for the persistent implementation of door locking may encompass instances involving patients exhibiting suicidal ideation, disorientation, or limited communication skills. Some authors propose the hypothesis that, in certain situations, locking doors may be viewed as less intrusive than intensive observation [54].

Despite these compelling findings, there are limitations to consider. The study was conducted at a single-center facility, and the low response rate (19%) may introduce bias, with more severely ill patients potentially underrepresented. Furthermore, the study did not assess the perspectives of visitors or staff, which could provide additional insights into the effectiveness of open-door policies. The use of text mining techniques, such as LDA, to analyze patient responses presents challenges. LDA, while useful for identifying topic

distributions, has limitations in capturing nuanced patient experiences, as it assumes topics are independent and does not account for contextual variation across individuals. The study drew from a stratified random sample of 3163 individuals, ensuring broad representation of patients with diverse experiences and needs. The questionnaire covered multiple relevant domains (person, room, ward, and clinic), allowing for a detailed understanding of patient preferences and needs. The combination of electronic and paper questionnaires maximized participation. Former patient and peer involvement in designing the questionnaire is a strength of this study, as it is crucial for ensuring its relevance and accuracy.

In conclusion, our study highlights the importance of open-door policies in psychiatric care from the patient perspective, emphasizing autonomy, trust, and engagement in treatment. By aligning institutional practices with patient priorities, psychiatric settings can enhance patient satisfaction and treatment outcomes. Further research is needed to explore the perspectives of staff and visitors, as well as the effectiveness of open-door policies in diverse healthcare settings.

Acknowledgments

We extend our heartfelt gratitude to the patients who participated in this study, generously sharing their perspectives and experiences. We would also like to thank the interdisciplinary team who developed the questionnaire.

Conflict of interest

The authors declare no conflicts of interest pertaining to the current work.

Abbreviations

EFS: Enterprise Feedback Suite

EKNZ: Ethics Committee Northwest and Central Switzerland

LDA: Latent Dirichlet Allocation

OMR: Optical Mark Recognition

UPK: University Psychiatric Clinics Basel

Data Availability

The data analysis scripts will be made available on GitHub. The questionnaire-derived data in a two-dimensional spreadsheet can be obtained from the corresponding author upon reasonable request.

References

1. Cowman S, Björkdahl A, Clarke E, Gethin G, Maguire J. A descriptive survey study of violence management and priorities among psychiatric staff in mental health services, across seventeen european countries. *BMC Health Serv Res* 2017 Dec 19;17(1):59. doi: 10.1186/s12913-017-1988-7
2. Muralidharan S, Fenton M. Containment strategies for people with serious mental illness. *Cochrane Database of Systematic Reviews* 2006 Jul 19; doi: 10.1002/14651858.CD002084.pub2
3. Rittmannsberger H, Sartorius N, Brad M, Burtea V, Capraru N, Cernak P, Dernovçek M, Dobrin I, Frater R, Hasto J, Hategan M, Haushofer M, Kafka J, Kasper S, Macrea R, Nabelek L, Nawka P, Novotny V, Platz T, Pojar A, Silberbauer C, Fekete S, Wancata J, Windhager E, Zapotoczky H-G, Zöchling R. Changing aspects of psychiatric inpatient treatment. *European Psychiatry* 2004 Dec 16;19(8):483–488. doi: 10.1016/j.eurpsy.2004.05.001
4. Sowislo JF, Lange C, Euler S, Hachtel H, Walter M, Borgwardt S, Lang UE, Huber CG. Stigmatization of psychiatric symptoms and psychiatric service use: a vignette-based representative population survey. *Eur Arch Psychiatry Clin Neurosci* 2017 Jun 19;267(4):351–357. doi: 10.1007/s00406-016-0729-y
5. Huber CG, Steiger S, Möller J, Lang UE. Die Haltung der Öffentlichkeit zu Zwangsmassnahmen bei psychiatrischen PatientInnen. *Fortschritte der Neurologie · Psychiatrie* 2023 Apr 12; doi: 10.1055/a-2036-7780
6. Gebhardt R-P, Radtke M. Vergleich der Stationsatmosphäre zwischen drei Spezialstationen für alkoholranke, schizophrene und depressive Patienten und einer diagnostisch gemischten Satellitenstation. *Psychiatr Prax* 2003 May;30(4):192–198. doi: 10.1055/s-2003-39491
7. Palmstierna T, Huitfeldt B, Wistedt B. The Relationship of Crowding and Aggressive Behavior on a Psychiatric Intensive Care Unit. *Psychiatric Services* 1991 Dec;42(12):1237–1240. doi: 10.1176/ps.42.12.1237
8. Searby A, James R, Snipe J, Maude P. Locked external doors on inpatient mental health units: A scoping review. *Int J Ment Health Nurs* 2023 Dec 6;32(6):1544–1560. doi: 10.1111/inm.13189
9. Efkeemann SA, Bernard J, Kalagi J, Otte I, Ueberberg B, Assion H-J, Zeiß S, Nyhuis PW, Vollmann J, Juckel G, Gather J. Ward Atmosphere and Patient Satisfaction in Psychiatric Hospitals With Different Ward Settings and Door Policies. Results From a Mixed Methods Study. *Front Psychiatry* 2019 Aug 30;10. doi: 10.3389/fpsy.2019.00576
10. Kalagi J, Otte I, Vollmann J, Juckel G, Gather J. Requirements for the implementation of open door policies in acute psychiatry from a mental health professionals' and patients' view: a qualitative interview study. *BMC Psychiatry* 2018 Dec 19;18(1):304. doi: 10.1186/s12888-018-1866-9

11. Missouridou E, Fradelos EC, Kritsiotakis E, Mangoulia P, Segredou E, Papathanasiou I V. Containment and therapeutic relationships in acute psychiatric care spaces: the symbolic dimensions of doors. *BMC Psychiatry* 2022 Jan 4;22(1):2. doi: 10.1186/s12888-021-03607-2
12. Fletcher J, Hamilton B, Kinner S, Sutherland G, King K, Tellez JJ, Harvey C, Brophy L. Working towards least restrictive environments in acute mental health wards in the context of locked door policy and practice. *Int J Ment Health Nurs* 2019 Apr 5;28(2):538–550. doi: 10.1111/inm.12559
13. Missouridou E, Zartaloudi A, Dafogianni C, Koutelekos J, Dousis E, Vlachou E, Evagelou E. Locked versus open ward environments and restrictive measures in acute psychiatry in Greece: Nursing students' attitudes and experiences. *Perspect Psychiatr Care* 2021 Jul 30;57(3):1365–1375. doi: 10.1111/ppc.12699
14. Muir-Cochrane E, Oster C, Grotto J, Gerace A, Jones J. The inpatient psychiatric unit as both a safe and unsafe place: Implications for absconding. *Int J Ment Health Nurs* 2013 Aug 25;22(4):304–312. doi: 10.1111/j.1447-0349.2012.00873.x
15. Shattell MM, Andes M, Thomas SP. How patients and nurses experience the acute care psychiatric environment. *Nurs Inq* 2008 Sep 7;15(3):242–250. doi: 10.1111/j.1440-1800.2008.00397.x
16. Falkowski J, Watts V, Falkowski W, Dean T. Patients leaving hospital without the knowledge or permission of staff--absconding. *Br J Psychiatry* 1990 Apr;156:488–90. PMID:2386857
17. Lewis AB, Kohl RN. The risk and prevention of abscondence from an open psychiatric unit. *Compr Psychiatry* 1962 Oct;3(5):302–308. doi: 10.1016/S0010-440X(62)80037-6
18. Meehan T, Vermeer C, Windsor C. Patients' perceptions of seclusion: a qualitative investigation. *J Adv Nurs* 2000 Feb 9;31(2):370–377. doi: 10.1046/j.1365-2648.2000.01289.x
19. Nijman HLI, á Campo JMLG, Ravelli DP, Merckelbach HLGJ. A Tentative Model of Aggression on Inpatient Psychiatric Wards. *Psychiatric Services* 1999 Jun;50(6):832–834. doi: 10.1176/ps.50.6.832
20. Weltens I, Bak M, Verhagen S, Vandenberk E, Domen P, van Amelsvoort T, Drukker M. Aggression on the psychiatric ward: Prevalence and risk factors. A systematic review of the literature. *PLoS One* 2021 Oct 8;16(10):e0258346. doi: 10.1371/journal.pone.0258346
21. Hagg LJ, Merkouris SS, O'Dea GA, Francis LM, Greenwood CJ, Fuller-Tyszkiewicz M, Westrupp EM, Macdonald JA, Youssef GJ. Examining Analytic Practices in Latent Dirichlet Allocation Within Psychological Science: Scoping Review. *J Med Internet Res* 2022 Nov 8;24(11):e33166. doi: 10.2196/33166
22. Blei DM. Probabilistic topic models. *Commun ACM* 2012 Apr;55(4):77–84. doi: 10.1145/2133806.2133826
23. Leweke FM, Hirjak D, Staudter C, Borgwedel D, Coenen-Daniel M, Heser M, Erk K, Juckel G, Beivers A, Meyer-Lindenberg A. [The CIMH Track Concept in Psychiatry: Syndrome-specific Treatment across Modalities - Part 1

- Theoretical background]. *Fortschr Neurol Psychiatr* 2020 Jan;88(1):12–23. PMID:30763961
24. Modini M, Burton A, Abbott MJ. Factors influencing inpatients perception of psychiatric hospitals: A meta-review of the literature. *J Psychiatr Res* 2021 Apr;136:492–500. doi: 10.1016/j.jpsychires.2020.10.020
 25. Enterprise Feedback Suite. https://www.tivian.com/de/ressourcen_/broschure-enterprise-feedback-suite/.
 26. Remark Office OMR Software. <https://remarksoftware.com/products/office-omr/>.
 27. Geletta S, Follett L, Laugerman M. Latent Dirichlet Allocation in predicting clinical trial terminations. *BMC Med Inform Decis Mak* 2019 Dec 27;19(1):242. doi: 10.1186/s12911-019-0973-y
 28. Feinerer I, Hornik K, Meyer D. Text Mining Infrastructure in R. *J Stat Softw* 2008;25(5). doi: 10.18637/jss.v025.i05
 29. Silge J, Robinson D. tidytext: Text Mining and Analysis Using Tidy Data Principles in R. *The Journal of Open Source Software* 2016 Jul 11;1(3):37. doi: 10.21105/joss.00037
 30. Grün B, Hornik K. topicmodels: An R package for fitting topic models. *J Stat Softw* 2011;40(13). doi: 10.18637/jss.v040.i13
 31. Nyhuis PW, Zinkler M. Offene Psychiatrie und gemeindepsychiatrische Arbeit. *Nervenarzt* 2019 Jul 7;90(7):695–699. doi: 10.1007/s00115-019-0744-0
 32. Haglund K, von Essen L. Locked entrance doors at psychiatric wards – Advantages and disadvantages according to voluntarily admitted patients. *Nord J Psychiatry* 2005 Jan 12;59(6):511–515. doi: 10.1080/08039480500360781
 33. van der Merwe M, Bowers L, Jones J, Simpson A, Haglund K. Locked doors in acute inpatient psychiatry: a literature review. *J Psychiatr Ment Health Nurs* 2009 Apr;16(3):293–9. PMID:19291159
 34. Blaesi S, Gairing S, Walter M, Lang U, Huber C. Sicherheit, therapeutischer Halt und Patientenzusammenhalt auf geschlossenen, neu geöffneten und offenen psychiatrischen Stationen. *Psychiatr Prax* 2013 Nov 19;42(02):76–81. doi: 10.1055/s-0033-1359871
 35. Lo S, Gaupp R, Huber C, Schneeberger A, Garic G, Voulgaris A, Walter M, Borgwardt S, Lang U. Einfluss einer „Offenen-Tür-Politik“ auf die Stationsatmosphäre: Auswirkungen auf die Behandlungsqualität. *Psychiatr Prax* 2018 Apr 3;45(03):133–139. doi: 10.1055/s-0042-121784
 36. Hochstrasser L, Fröhlich D, Schneeberger AR, Borgwardt S, Lang UE, Stieglitz R-D, Huber CG. Long-term reduction of seclusion and forced medication on a hospital-wide level: Implementation of an open-door policy over 6 years. *European Psychiatry* 2018 Jan 1;48(1):51–57. doi: 10.1016/j.eurpsy.2017.09.008
 37. Fröhlich D, Bittersohl C, Schroeder K, Schöttle D, Kowalinski E, Borgwardt S, Lang UE, Huber CG. Reliability of

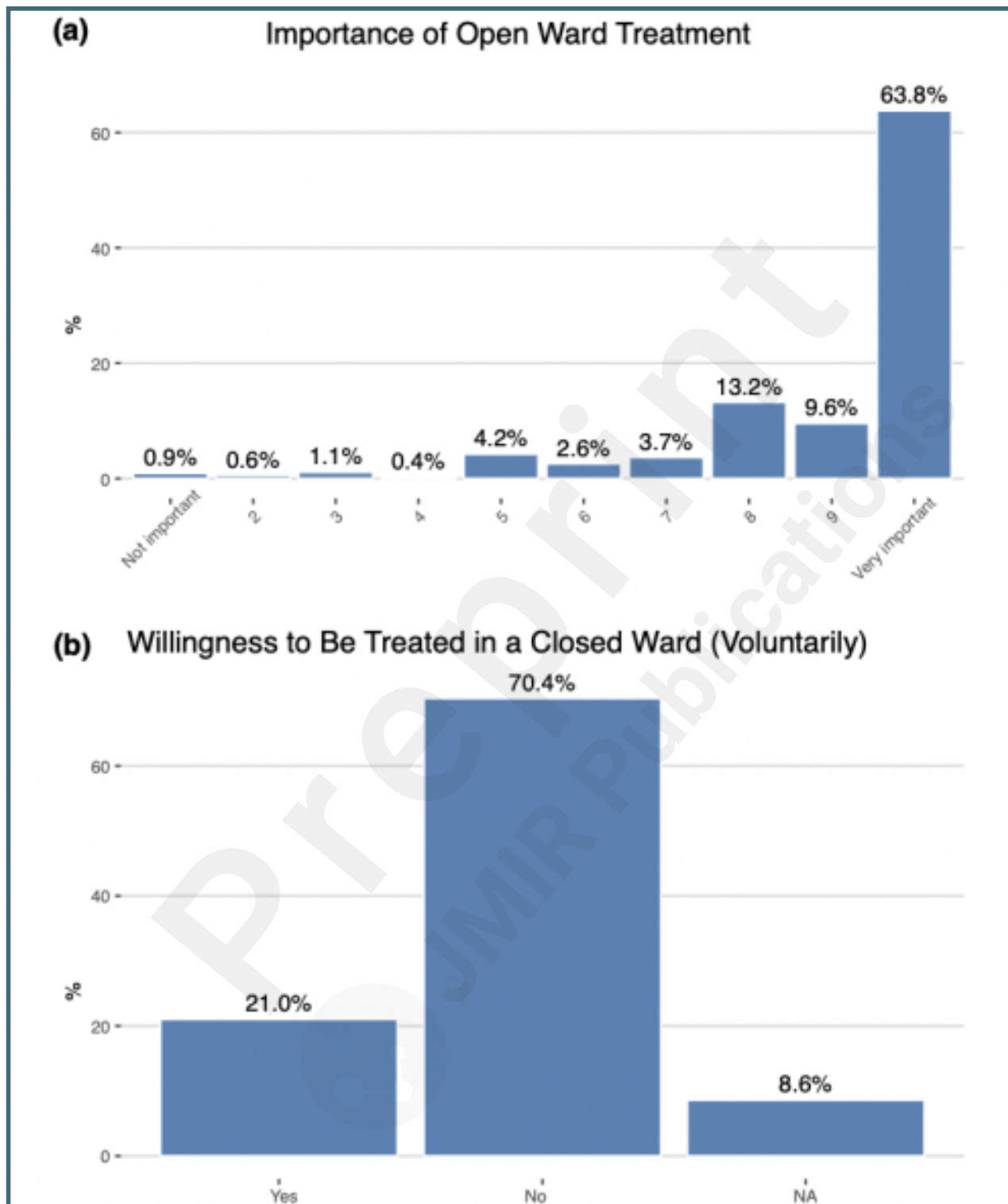
- Paper-Based Routine Documentation in Psychiatric Inpatient Care and Recommendations for Further Improvement. *Front Psychiatry* 2020 Jan 14;10. doi: 10.3389/fpsy.2019.00954
38. Kowalinski E, Hochstrasser L, Schneeberger AR, Borgwardt S, Lang UE, Huber CG. Sechs Jahre „offene Türen“ an den Universitären Psychiatrischen Kliniken Basel. *Nervenarzt* 2019 Jul 17;90(7):705–708. doi: 10.1007/s00115-019-0733-3
39. Schneeberger AR, Kowalinski E, Fröhlich D, Schröder K, von Felten S, Zinkler M, Beine KH, Heinz A, Borgwardt S, Lang UE, Bux DA, Huber CG. Aggression and violence in psychiatric hospitals with and without open door policies: A 15-year naturalistic observational study. *J Psychiatr Res* 2017 Dec;95:189–195. doi: 10.1016/j.jpsychires.2017.08.017
40. Krüchl JS, Moeller J, Imfeld L, Schädelin S, Hochstrasser L, Lieb R, Lang UE, Huber CG. The association between the admission to wards with open- vs. closed-door policy and the use of coercive measures. *Front Psychiatry* 2023 Oct 25;14. doi: 10.3389/fpsy.2023.1268727
41. Arnold BD, Moeller J, Hochstrasser L, Schneeberger AR, Borgwardt S, Lang UE, Huber CG. Compulsory Admission to Psychiatric Wards–Who Is Admitted, and Who Appeals Against Admission? *Front Psychiatry* 2019 Aug 9;10. doi: 10.3389/fpsy.2019.00544
42. Fan Z, Huang J, Wu Q, Jiang S. Comparison of standard locked-ward treatment versus open-ward rehabilitation treatment for chronic schizophrenic patients. A one-year controlled trial in Canton. *Br J Psychiatry Suppl* 1994 Aug;(24):45–51. PMID:7946231
43. Huber CG, Schneeberger AR, Kowalinski E, Fröhlich D, von Felten S, Walter M, Zinkler M, Beine K, Heinz A, Borgwardt S, Lang UE. Suicide risk and absconding in psychiatric hospitals with and without open door policies: a 15 year, observational study. *Lancet Psychiatry* 2016 Sep;3(9):842–849. doi: 10.1016/S2215-0366(16)30168-7
44. Indregard A-MR, Nussle HM, Hagen M, Vandvik PO, Tesli M, Gather J, Kunøe N. Open-door policy versus treatment-as-usual in urban psychiatric inpatient wards: a pragmatic, randomised controlled, non-inferiority trial in Norway. *Lancet Psychiatry* 2024 May;11(5):330–338. doi: 10.1016/S2215-0366(24)00039-7
45. Papadopoulos C, Ross J, Stewart D, Dack C, James K, Bowers L. The antecedents of violence and aggression within psychiatric in-patient settings. *Acta Psychiatr Scand* 2012 Jun 23;125(6):425–439. doi: 10.1111/j.1600-0447.2012.01827.x
46. Bak J, Brandt-Christensen M, Sestoft DM, Zoffmann V. Mechanical Restraint-Which Interventions Prevent Episodes of Mechanical Restraint?-A Systematic Review. *Perspect Psychiatr Care* 2012 Apr;48(2):83–94. doi: 10.1111/j.1744-6163.2011.00307.x

47. Jungfer H-A, Schneeberger AR, Borgwardt S, Walter M, Vogel M, Gairing SK, Lang UE, Huber CG. Reduction of seclusion on a hospital-wide level: Successful implementation of a less restrictive policy. *J Psychiatr Res* 2014 Jul;54:94–99. doi: 10.1016/j.jpsychires.2014.03.020
48. Boumans CE, Egger JIM, Souren PM, Mann-Poll PS, Hutschemaekers GJM. Nurses' decision on seclusion: patient characteristics, contextual factors and reflexivity in teams. *J Psychiatr Ment Health Nurs* 2012 Apr;19(3):264–70. PMID:22074324
49. Lang U, Walter M, Borgwardt S, Heinz A. Über die Reduktion von Zwangsmaßnahmen durch eine „offene Türpolitik“. *Psychiatr Prax* 2016 Sep 8;43(06):299–301. doi: 10.1055/s-0042-111032
50. Gill NS, Parker S, Amos A, Lakeman R, Emeleus M, Brophy L, Kisely S. Opening the doors: Critically examining the locked wards policy for public mental health inpatient units in Queensland Australia. *Australian & New Zealand Journal of Psychiatry* 2021 Sep 23;55(9):844–848. doi: 10.1177/00048674211025619
51. Levy A, Cooper S, Elizur A. Degradation and rites of degradations in a closed psychiatric ward. *Isr J Psychiatry Relat Sci* 1986;23(4):275–85. PMID:3679778
52. Müller MJ, Schlösser R, Kapp-Steen G, Schanz B, Benkert O. Patients' satisfaction with psychiatric treatment: comparison between an open and a closed ward. *Psychiatric Quarterly* 2002;73(2):93–107. doi: 10.1023/A:1015099526445
53. Haglund K, Von Knorring L, Von Essen L. Psychiatric wards with locked doors – advantages and disadvantages according to nurses and mental health nurse assistants. *J Clin Nurs* 2006 Apr 13;15(4):387–394. doi: 10.1111/j.1365-2702.2006.01489.x
54. Schreiber LK, Metzger FG, Flammer E, Rinke H, Fallgatter AJ, Steinert T. Open Doors by Fair Means: a quasi-experimental controlled study on the effects of an open-door policy on acute psychiatric wards. *BMC Health Serv Res* 2022 Dec 22;22(1):941. doi: 10.1186/s12913-022-08322-6

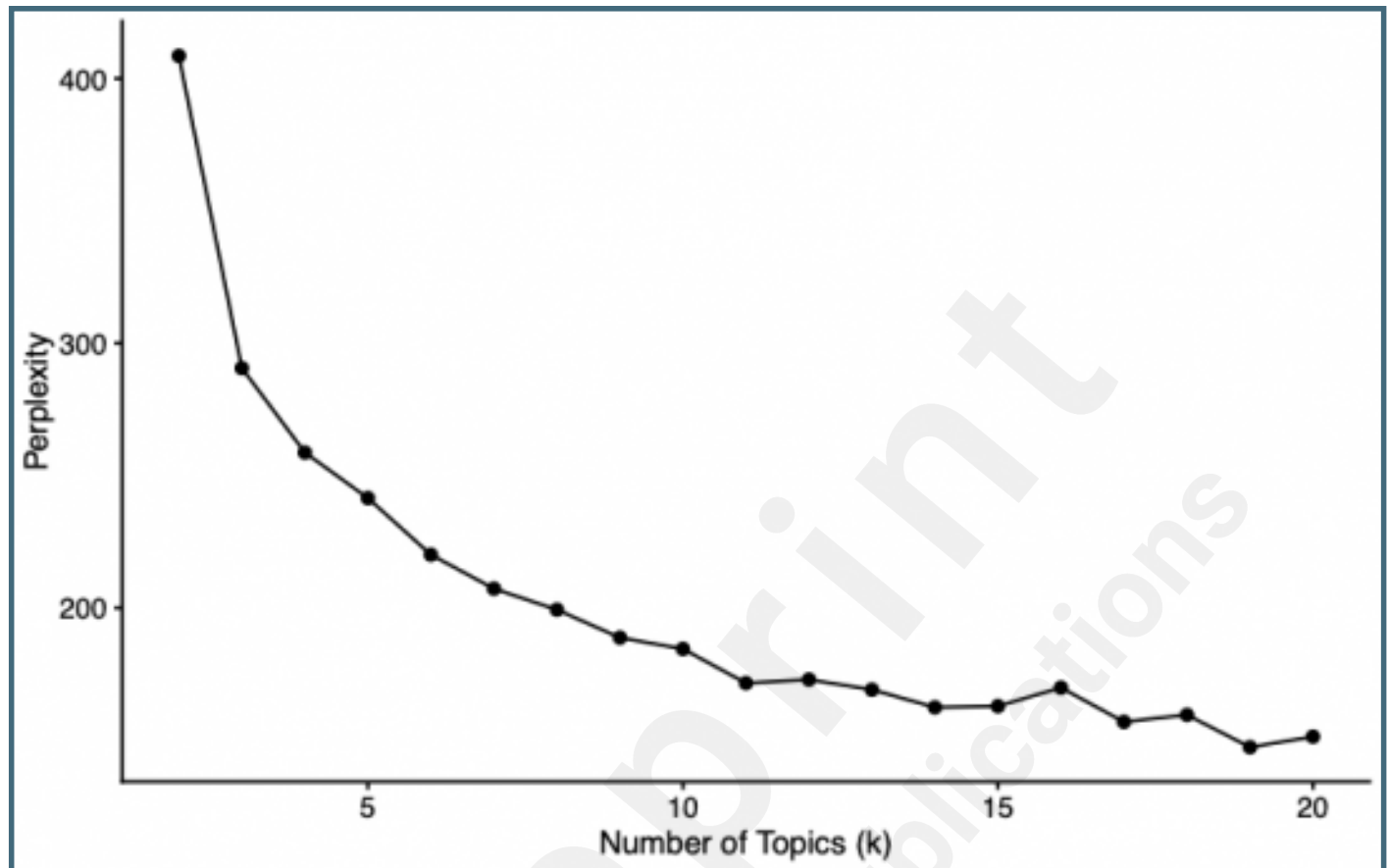
Supplementary Files

Figures

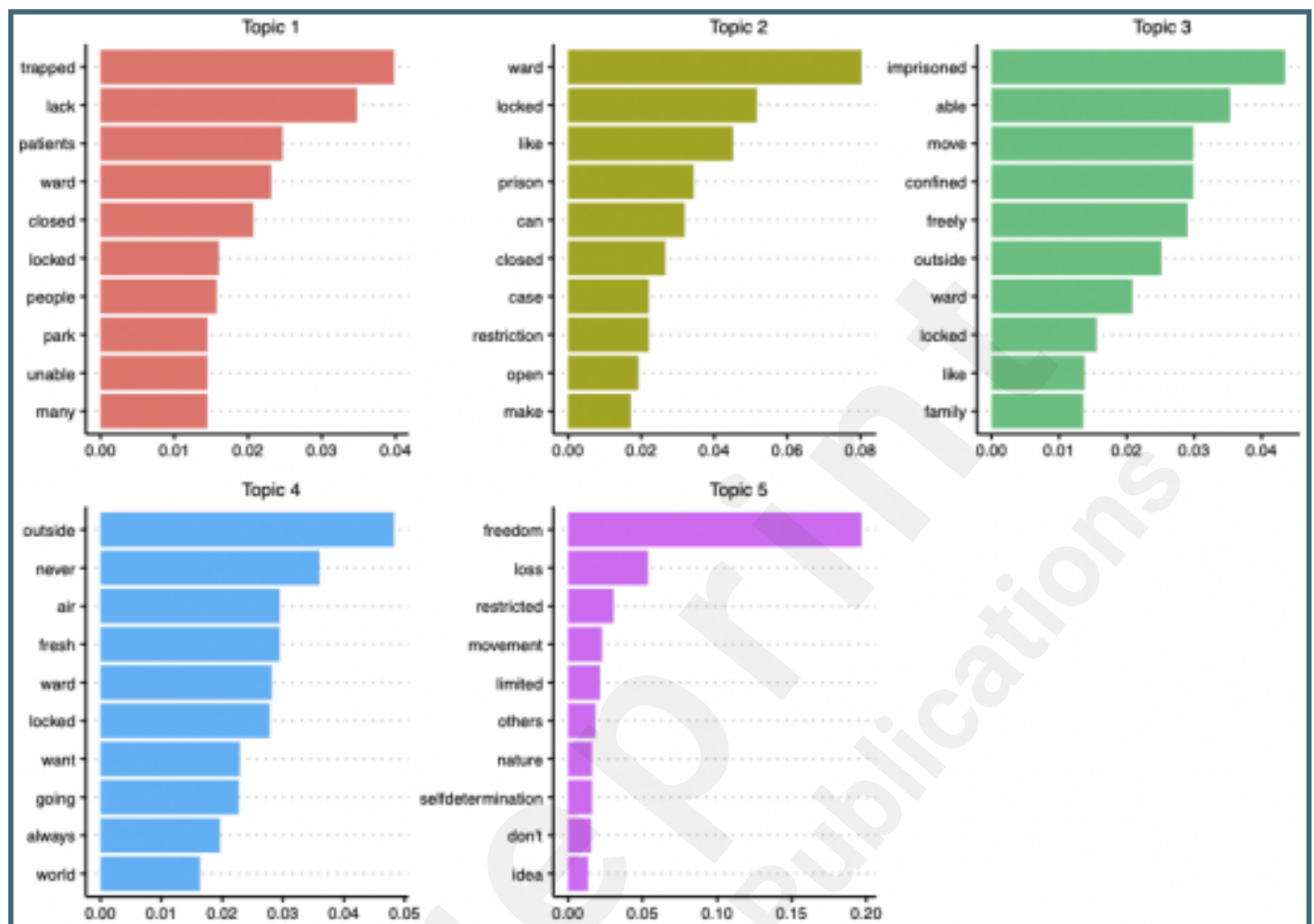
Patient preferences for open-door policies (a) and locked ward acceptance rates (b).



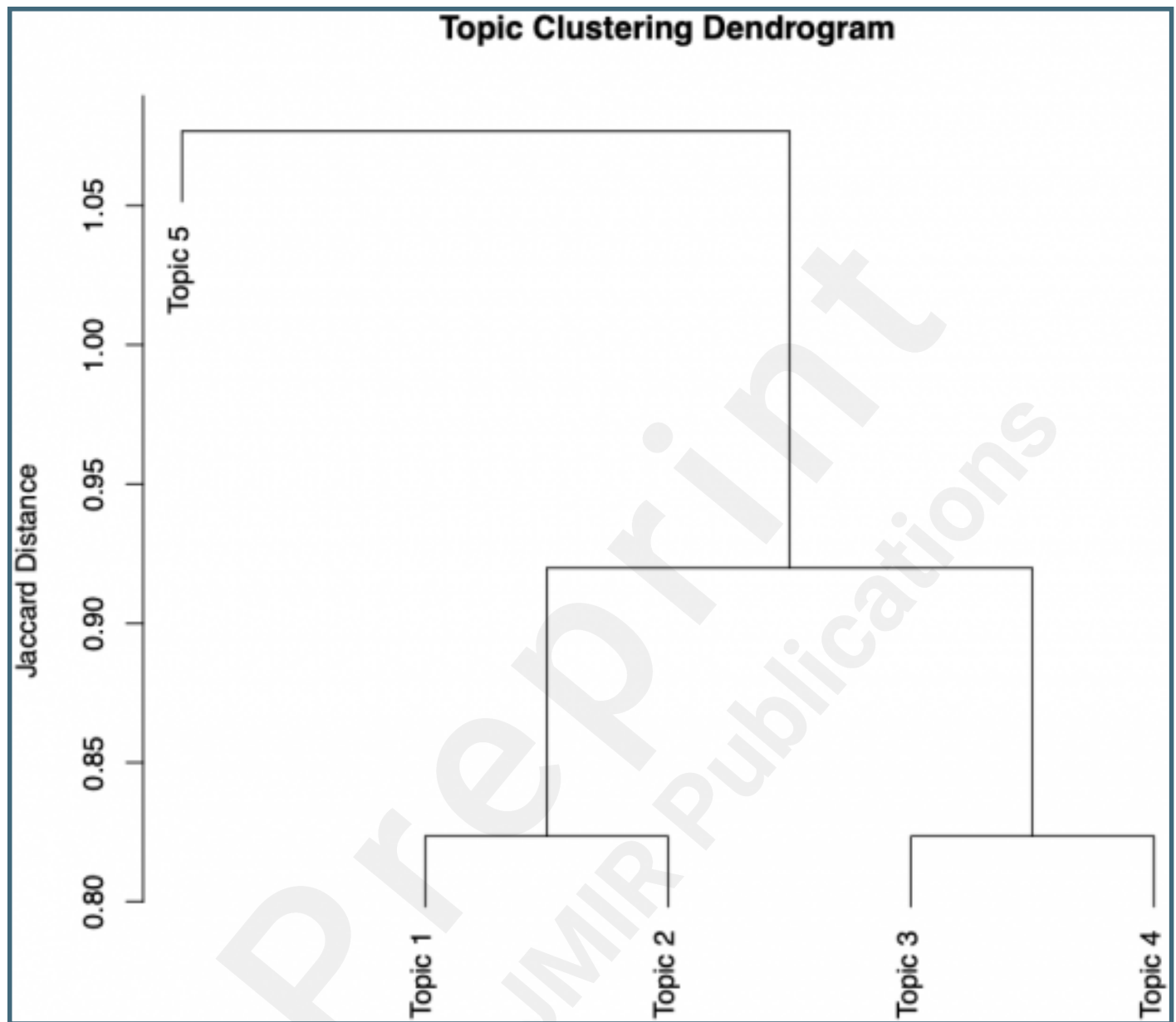
Perplexity scores guiding k topic selection.



Probabilistic association of words with topics (beta values, x axis) of salient terms per topic.



Hierarchical clustering dendrogram of thematic relationships.



Word clouds illustrating key terms for Topics 1 and 2 (t1, t2).

