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RESEARCH ARTICLE

Development and Initial Validation of the Clinical Patient Behavior Scale: A Multidimensional Assessment Approach

Klinik Hasta Davranışı Ölçeğinin Geliştirilmesi ve İlk Doğrulama Çalışması: Çok Boyutlu Bir Değerlendirme Yaklaşımı

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ABSTRACT

Objective: Patient behavior in clinical settings plays a critical role in shaping care processes, communication quality, and treatment outcomes. While existing research has largely focused on adherence and patient satisfaction, there remains a lack of comprehensive instruments that capture the multidimensional nature of patient behavior within clinical interactions. This study aimed to develop and initially validate the Clinical Patient Behavior Scale (CPBS), a multidimensional instrument designed to assess patient behaviors in clinical settings based on healthcare professionals' evaluations.

Materials and Methods: This methodological study was conducted with 300 nurses working in a university hospital. An initial item pool of 30 items was generated through a comprehensive literature review and expert evaluation. Content validity was established using expert ratings. Construct validity was assessed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Internal consistency reliability was evaluated using Cronbach's alpha coefficients.

Results: The CPBS demonstrated excellent sampling adequacy (KMO = 0.939) and a significant Bartlett's test of sphericity ($p < 0.001$). EFA revealed a five-factor structure explaining 73.37 % of the total variance. CFA indicated excellent model fit (CFI = 0.992, TLI = 0.991, RMSEA = 0.016). All factor loadings were statistically significant. The overall internal consistency of the 30-item scale was high (Cronbach's alpha = 0.92).

Conclusion: The CPBS provides initial evidence of a theoretically grounded and psychometrically robust instrument for assessing patient behavior as a multidimensional construct in clinical settings. The findings represent initial validation evidence, and further studies are recommended to examine cross-cultural validity, temporal stability, and external validity across diverse healthcare contexts of BK virus in autoimmune disease pathogenesis.

Keywords: Patient behavior, scale development, validity, reliability, psychometrics, clinical assessment

ÖZET

Amaç: Klinik ortamlardaki hasta davranışı, bakım süreçlerini, iletişim kalitesini ve tedavi sonuçlarını şekillendirmede kritik bir rol oynar. Mevcut araştırmalar büyük ölçüde uyum ve hasta memnuniyetine odaklanırken, klinik etkileşimler içindeki hasta davranışının çok boyutlu doğasını yakalayan kapsamlı araçların eksikliği devam etmektedir. Bu çalışma, sağlık profesyonellerinin değerlendirmelerine dayanarak klinik ortamlardaki hasta davranışlarını değerlendirmek üzere tasarlanmış çok boyutlu bir araç olan Klinik Hasta Davranışı Ölçeği'ni (CPBS) geliştirmeyi ve ilk olarak doğrulamayı amaçlamıştır.

Gereç ve Yöntemler: Bu metodolojik çalışma, bir üniversite hastanesinde çalışan 300 hemşire ile gerçekleştirilmiştir. Kapsamlı bir literatür taraması ve uzman değerlendirmesi yoluyla 30 maddeden oluşan bir ilk madde havuzu oluşturulmuştur. İçerik geçerliliği, uzman değerlendirmeleri kullanılarak belirlenmiştir. Yapı geçerliliği, Keşifsel Faktör Analizi (EFA) ve Doğrulayıcı Faktör Analizi (CFA) kullanılarak değerlendirilmiştir. İç tutarlılık güvenilirliği, Cronbach alfa katsayıları kullanılarak değerlendirilmiştir.

Bulgular: CPBS, mükemmel örneklem yeterliliği (KMO = 0,939) ve anlamlı bir Bartlett küresellik testi ($p < 0,001$) göstermiştir. Açıklayıcı faktör analizi (EFA), toplam varyansın %73,37'sini açıklayan beş faktörlü bir yapı ortaya koymuştur. Doğrulayıcı faktör analizi (CFA), mükemmel model uyumu göstermiştir (CFI = 0,992, TLI = 0,991, RMSEA = 0,016). Tüm faktör yükleri istatistiksel olarak anlamlıdır. 30 maddelik ölçeğin genel iç tutarlılığı yüksektir (Cronbach alfa = 0,92).

Sonuç: CPBS, klinik ortamlarda hasta davranışını çok boyutlu bir yapı olarak değerlendirmek için teorik olarak temellendirilmiş ve psikometrik olarak sağlam bir araç için ilk kanıtları sunmaktadır. Bulgular, ilk doğrulama kanıtlarını temsil etmektedir ve çeşitli sağlık hizmeti bağlamlarında kültürlerarası geçerlilik, zamansal istikrar ve dış geçerliliğin incelenmesi için daha fazla çalışma önerilmektedir.

Anahtar Kelimeler: Hasta davranışı, ölçek geliştirme, geçerlilik, güvenilirlik, psikometri, klinik değerlendirme

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INTRODUCTION

Patient behavior in clinical settings plays a significant role in shaping the quality and effectiveness of nursing care. Healthcare delivery is inherently relational, and nurse–patient interactions constitute one of the most continuous and intensive forms of professional contact within clinical environments. The quality of these interactions influences communication, adherence to treatment, patient safety, and overall care outcomes (1,2). While extensive research has examined nurses' competencies, communication skills, and professional performance, comparatively limited attention has been directed toward systematically assessing patient behaviors that directly affect nursing care processes.

Patient behaviors in clinical settings encompass a broad spectrum, ranging from cooperative engagement and respectful communication to non-adherence, resistance to care, verbal aggression, and disruptive conduct. Positive patient engagement has been associated with improved adherence and better health outcomes (3). Conversely, challenging patient behaviors may interfere with nursing interventions, disrupt workflow, increase emotional labor, and contribute to occupational stress (4,5). Nurses are particularly vulnerable to such behaviors due to their sustained bedside presence and responsibility for direct care (6).

Existing literature has primarily focused on related but narrower constructs, such as patient satisfaction (7), treatment adherence (8), patient engagement (3), and workplace violence against healthcare staff (5). However, these constructs do not comprehensively capture the range of patient behaviors encountered in everyday nursing practice. Instruments assessing workplace violence typically emphasize severe aggression, whereas satisfaction scales reflect patients' perceptions of care rather than observable behaviors affecting care delivery. Consequently, there remains a lack of a structured and validated tool specifically designed to assess patient behaviors within the context of nursing care.

From an organizational perspective, exposure to challenging patient behaviors has been linked to burnout, emotional exhaustion, and reduced job satisfaction among nurses (9,10). The Job Demands–Resources model suggests that persistent interpersonal stressors may deplete professional resources and negatively influence well-being and performance (10). Systematic assessment of patient behaviors may therefore contribute not only to improving care quality but also to enhancing work environment management and nurse well-being.

In light of this gap, there is a need for a valid and reliable instrument to systematically assess patient behaviors encountered in nursing care. To our knowledge, no existing instrument comprehensively captures patient behavior as a multidimensional construct within clinical interactions. Accordingly, this study aimed to develop and initially validate a measurement tool to assess patient behaviors in clinical settings as evaluated by nurses. Rather than focusing solely on treatment adherence, the scale conceptualizes patient behavior as a multidimensional construct that includes cooperation, communication patterns, behavioral compliance, and respect for professional boundaries within the nurse–patient interaction. This study was conducted to develop a valid and reliable measurement tool to assess patient behaviors in clinical settings as evaluated by nurses.

MATERIALS AND METHODS

Study Design

The study was designed as a methodological study.

Setting and Time

The study was conducted in Necmettin Erbakan University Hospital in 2026.

Population and Sample

In methodological studies, it is recommended that the sample size should be 5–10 times the number of items in the scale (11–14). In this study, based on the relevant literature, it was aimed to reach a sample of 300 participants. A total of 308 nurses agreed to participate in the study. After data screening, 300 questionnaires with complete responses were included in the final analysis, corresponding to a response rate of 97.4%. Since the draft scale consisted of 30 items, the sample size met the recommended criterion of at least 10 participants per item.

Data Collection Tools

The "Personal Information Form" and the "Draft Clinical Patient Behavior Scale" were used as data collection tools in the study.

Personal Information Form:

It includes 6 items regarding the personal and professional characteristics of the participants, which are thought to be related to the research variables.

Draft Clinical Patient Behavior Scale (CPBS):

The draft scale, created as a result of a comprehensive literature review, consists of 30 items written in the present tense and is structured as a 5-point Likert type (1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree). The draft scale was theoretically structured to represent five domains: Compliance with Treatment and Care Instructions (CTCI), Cooperation and Professional Respect (CPR), Communication and Demand Balance (CDB), Compliance with Behavioral and Service Rules (CBSR), and Professional Boundaries and Authority Awareness (PBAA). Items 16, 17, 18, 20, 21, 22, 23, 24, 26, 27, 28, 29, and 30
are reverse scored (Figure 1).

Data Collection

Data were collected face-to-face using a cross-sectional design in 2026.

Data Analysis

For statistical analysis, descriptive data analysis, Cronbach's alpha reliability analysis, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA) were applied. Statistical analysis findings were obtained using R software (R Core Team, 2023). Data were collected once from the sample group, and no test–retest analysis was performed due to the cross-sectional design of the study.

Ethical Considerations

Approval was obtained from the ethics committee of

Clinical Patient Behavior Scale (CPBS)

Respondent: Healthcare professionals (nurses)
Response type: 5-point Likert scale
1 = Strongly disagree
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly agree

Items
1. The patient complies with mobilization instructions promptly and appropriately.
2. The patient cooperates with the nurse during the care process.
3. The patient uses respectful language in communication with the nurse.
4. The patient fully complies with postoperative care instructions.
5. The patient adapts to the care process without needing reminders.
6. The patient acts in accordance with the nurse's directions.
7. The patient acts in accordance with medication and pain management instructions.
8. The patient expresses their needs in an appropriate time and manner.
9. The patient avoids behaviors that may disrupt the care process.
10. The patient respects the nurse's professional decisions.
11. The patient follows the given care instructions correctly and regularly.
12. The patient communicates their requests taking care priorities into account.
13. The patient behaves in accordance with ward rules.
14. The patient exhibits an attitude that accepts the nurse's role in the care process.
15. The patient distinguishes between urgent and routine requests and communicates them.
16. The patient avoids following the given instructions. (Reverse)
17. The patient makes requests to the nurse that are outside the scope of care. (Reverse)
18. The patient uses bossy or condescending language in communication. (Reverse)
19. The patient exhibits similar attitudes towards the doctor and nurse.
20. The patient is more demanding in communication with the nurse compared to the doctor. (Reverse)
21. The patient interferes with the treatment plan. (Reverse)
22. The patient adopts a hotel/accommodation approach without considering ward rules and the hospital environment. (Reverse)
23. The patient requests to smoke despite ward rules. (Reverse)
24. The patient makes requests regarding alcohol consumption in the hospital environment. (Reverse)
25. The patient accepts the professional role and responsibility boundaries of the nurse.
26. The patient expresses problems related to the hospital system by holding the nurse respon-sible. (Reverse)
27. The patient uses the amount of payment made as justification for requesting privileges. (Reverse)
28. The patient exhibits a persistent attitude regarding issues outside the nurse's authority. (Reverse)
29. The patient requests personal contact information from the nurse. (Reverse)
30. The patient makes individual requests that are outside the scope of care. (Reverse)

Sub-Dimensional Structure

Sub-dimension	Number of items	Item No.
Complience to Treatment/Care Instructions	8	1,4,6,7,11,16*,21*
Cooperation and Professional Respect	6	3,8,10,14,19,20*
Communication and Demand Balance	6	5,9,12,15,18*,22*
Compliance with Code of Conduct and Service	4	13,17*,23*,24*
Professional Boundaries and Authority Awareness	6	25,26*,27*,28*,29*,30*
Total	30	

Reversed items: 16,17,18,20,21,22,23,24,26,27,28,29,30
Scoring
- Minimum score: 30
- Maximum score: 150
- Reversed items are reverse coded: 1 ↔ 5, 2 ↔ 4, 3 = 3

Figure 1. Clinical Patient Behavior Scale (CPBS)

a Necmettin Erbakan University (decision number 2026-1393) to conduct the study. During the implementation of the questionnaire, written and verbal informed consent was obtained from the participants, and data were collected from those who agreed to participate.

Limitations of the Study

Since the study is a scale development study conducted in Turkish society, it needs to be tested in different professional groups and cultures before being used.

RESULTS

Participant Characteristics

Of the total 300 nurses participating in the study, 83% (n:166) were female and 17% (n:34) were male, with a mean age of 30.52 (SD=5.43). Of the participants, 89% had a bachelor's degree and 11% had a postgraduate degree; 68% worked in surgical units and 32% in internal medicine units. Additionally, when participants' experience was examined, it was determined that they had been working as nurses for an average of 8.52 (SD=5.37) years and had been working in the same hospital for an average of 7.10 (SD=4.58) years.

Descriptive Statistics and Item Analyses of the Scale

When the lowest and highest scores obtained from the scale items, as well as the mean scores and standard deviations of the items, were examined across the entire dataset, it was observed that the scores ranged between 1 and 5. The highest mean score in the scale was 4.00 (SD=0.84) for the item "The patient complies with mobilization instructions in a timely and appropriate manner," while the lowest mean score was 2.52 (SD=1.3) for the item "The patient makes requests from the nurse outside the scope of care."

For the reliability analysis of the scale, when the item-total score correlations of all items were examined, it was found that the item-total correlation values ranged between 0.59 and 0.89 and were statistically significant ($p<0.001$). In addition, the Cronbach's alpha value of the scale was determined to be 0.92,

Table 1. Results of Exploratory Factor Analysis of the Draft Clinical Patient Behavior Scale (CPBS) (N:300)

Item No	Compliance to Treatment/Care Instructions	Cooperation and Professional Respect	Communication and Demand Balance	Compliance with Code of Conduct and Service	Professional Boundaries and Authority Awareness
N1	0.729				
N2	0.774				
N4	0.769				
N6	0.706				
N7	0.702				
N11	0.692				
N16	0.692				
N21	0.694				
N3		0.749			
N8		0.611			
N10		0.687			
N14		0.696			
N19		0.692			
N20		0.691			
N5			0.624		
N9			0.645		
N12			0.555		
N15			0.707		
N18			0.617		
N22			0.667		
N13				0.632	
N17				0.621	
N23				0.708	
N24				0.718	
N25					0.675
N26					0.721
N27					0.703
N28					0.698
N29					0.745
N30					0.744
Reported Variance Ratio	16.400	15.230	12.000	13.840	15.900

KMO = 0.939 X2(476) = 8360.480; Bartlett Sphericity Test (p) < 0.001

Total Explained Variance Ratio = 73.37

Table 2. Draft Clinical Patient Behavior Scale (CPBS) Adherence Indices

Chi-square	df	GFI	AGFI	CFI	TLI	NNFI	RMSEA
449.281	421	0.960	0.955	0.992	0.991	0.991	0.016

df: Degrees of freedom, GFI: Goodness of Fit Index, AGFI: Adjusted Goodness of Fit Index, CFI: Comparative Fit Index, TLI: Unscaled Fit Index, NNFI: Unscaled Fit Index, RMSEA: Root Mean Squared Error of Estimation

Table 3. Confirmatory Factor Load Statistics for the Draft Clinical Patient Behavior Scale (CPBS).

Sub-dimension/Item No	B	SH	z	Std (B)	p
Treatment and Care					
Compliance to Treatment/Care Instructions					
N1	1			0.562	<0.001
N2	0.954	0.069	13.919	0.492	<0.001
N4	0.936	0.069	13.735	0.501	<0.001
N6	0.715	0.037	19.531	0.617	<0.001
N7	0.766	0.038	20.069	0.659	<0.001
N11	1.180	0.079	15.048	0.596	<0.001
N16	0.930	0.043	21.737	0.775	<0.001
N21	0.911	0.041	20.708	0.610	<0.001
Cooperation and Professional Respect					
N3	0.848	0.040	20.940	0.700	<0.001
N8	0.812	0.044	16.242	0.602	<0.001
N10	0.825	0.043	20.708	0.654	<0.001
N14	0.749	0.036	20.405	0.714	<0.001
N19	0.876	0.044	19.636	0.608	<0.001
N20	0.998	0.088	15.736	0.608	<0.001
Communication and Demand Balance					
N5	0.828	0.040	18.550	0.632	<0.001
N9	1.183	0.079	15.048	0.594	<0.001
N12	1.202	0.080	14.906	0.620	<0.001
N15	1.002	0.071	13.002	0.518	<0.001
N18	0.930	0.043	21.737	0.775	<0.001
N22	0.715	0.037	19.531	0.617	<0.001
Behavioral and Service Compliance with Rules					
N13	1.496	0.093	16.138	0.713	<0.001
N17	0.947	0.069	13.735	0.503	<0.001
N23	1.285	0.083	15.4550	0.660	<0.001
N24	0.964	0.069	13.921	0.492	<0.001
Professional Boundaries and Authority Awareness					
N25	0.836	0.040	20.867	0.720	<0.001
N26	0.890	0.042	21.332	0.725	<0.001
N27	1411	0.091	15.495	0.624	<0.001
N28	1.409	0.091	15.545	0.623	<0.001
N29	0.886	0.043	20.704	0.694	<0.001
N30	0.556	0.034	16.439	0.470	<0.001

Table 4. Reliability Analysis Results

Scale and Sub-Dimensions	Cronbach's Alpha Values
Compliance to Treatment/Care Instructions	0.85
Cooperation and Professional Respect	0.83
Communication and Demand Balance	0.88
Compliance with Code of Conduct and Service	0.80
Professional Boundaries and Authority Awareness	0.88
Total	0.92

Table 5. Distribution of Draft Clinical Patient Behavior Scale (CPBS) Scores (N:300)

Item No	Average	SS	Med	Min-Max
N1 (The patient follows mobilization instructions in a timely and appropriate manner.)	4.00	0.84	4.00	1-5
N2 (The patient works collaboratively with the nurse throughout the patient care process.)	3.80	0.92	4.00	1-5
N3 (The patient uses respectful language in their communication with the nurse.)	2.97	1.05	3.00	1-5
N4 (The patient fully complies with postoperative care instructions (corset, dressing, drain, hygiene, etc.).)	3.81	0.81	4.00	1-5
N5 (The patient adapts to the care process without needing reminders.)	3.64	0.90	4.00	1-5
N6 (The patient complies with the nurse's instructions during patient care procedures.)	2.65	1.16	3.00	1-5
N7 (The patient follows the medication and pain management instructions.)	3.20	1.02	3.00	1-5
N8 (The patient expresses their needs in an appropriate time and manner.)	2.65	1.16	3.00	1-5
N9 (Avoids behaviors that could disrupt the patient care process.)	3.48	0.86	4.00	1-5
N10 (The patient respects the nurse's professional decisions.)	2.60	1.12	3.00	1-5
N11 (The patient follows the given care instructions correctly and regularly.)	3.48	0.86	4.00	1-5
N12 (The patient communicates their requests, taking care priorities into account.)	2.54	1.10	2.00	1-5
N13 (The patient behaves in accordance with the service rules.)	3.55	0.89	4.00	1-5
N14 (The patient demonstrates an attitude that acknowledges the nurse's role and authority in the care process.)	2.90	1.16	3.00	1-5
N15 (The patient reports their urgent and routine requests, distinguishing between them.)	2.88	1.11	3.00	1-5
N16 (The patient avoids following the given instructions. (Reverse item))	3.48	0.86	4.00	1-5
N17 (The patient makes requests to the nurse that are outside the scope of care. (Reverse item)	2.52	1.30	2.00	1-5
N18 (Uses authoritarian or condescending language in patient communication. (Reverse item))	3.20	1.02	3.00	1-5
N19 (The patient displays similar attitudes towards the doctor and nurse.)	3.73	0.84	4.00	1-5
N20 (Patients are more demanding in their communication with nurses than with doctors. (Reverse item))	3.09	1.10	3.00	1-5
N21 (The patient exhibits behavior that interferes with the treatment plan. (Reverse item))	3.07	1.10	3.00	1-5
N22 (The patient adopts a hotel/accommodation approach without considering service rules and the hospital environment. (Reverse item))	3.47	0.94	4.00	1-5
N23 (The patient insists on smoking despite the service rules. (Reverse item))	3.56	0.82	4.00	1-5
N24 (The patient makes requests regarding alcohol consumption in the hospital setting. (Reverse item))	3.77	0.92	4.00	1-5
N25 (The patient accepts the nurse's professional role and the limits of her responsibilities.	3.13	1.07	3.00	1-5
N26 (The patient expresses their concerns about the hospital system, holding the nurse responsible. (Reverse item))	2.93	1.18	3.00	1-5
N27 (The patient uses the amount of payment made as justification for claiming preferential treatment. (Reverse item))	3.43	1.02	4.00	1-5
N28 (The patient is persistent in matters outside the nurse's area of authority. (Reverse item))	2.87	1.11	3.00	1-5
N29 (The patient requests personal contact information from the nurse. (Reverse item))	2.65	1.16	3.00	1-5
N30 (The patient makes individual requests that fall outside the scope of care. (Reverse item)	2.93	1.18	3.00	1-5
Total Score	95.98	31.58	101	30-150

and no item was found that would significantly increase the alpha coefficient.

Psychometric Evaluation of the Clinical Patient Behavior Scale

Content and Language Validity:

For the content and language validity of the 30-item draft scale, expert opinions from 9 specialists were obtained using the Davis technique. Experts were asked to evaluate language validity as "Not appropriate (1), Slightly appropriate (2), Appropriate (3), Very appropriate (4)" and content validity as "Not appropriate (1), Appropriate (2)." Based on the evaluations and suggestions from the experts, 4 items were removed from the draft scale and 4 new items were added by the researchers, resulting in a final draft scale of 30 items. As a result of the evaluation of expert opinions, the Content Validity Index (CVI) values of the 30 items ranged between 0.80 and 1.00. Since there were no items with a CVI value below 0.80, the scale took its final form with 30 items.

Construct Validity

Exploratory Factor Analysis (EFA):

The EFA results are presented in Table 1. To determine the factor structure of the scale, EFA was conducted using Principal Components Analysis and Varimax rotation techniques. Before performing EFA, the Kaiser-Meyer-Olkin (KMO) test was conducted to assess the suitability of the sample size for factor analysis, and the KMO value was found to be 0.939. In addition, when the results of Bartlett's test of sphericity were evaluated, the chi-square value was found to be significant ($\chi^2(476)=8360.480$, $p<0.01$) (Table 1).

After confirming the suitability of the data for factor analysis, EFA was performed using the Principal Components Analysis method to examine the factor structure of the scale. Varimax rotation was applied, and the results indicated a five-factor structure (Table 1).

It was determined that the factor loadings of the items ranged between 0.624 and 0.774. Based on the content of the items under each factor, the first factor (n=8) was named "Complience to Treatment/Care Instructions"; the second factor (n=6) "Cooperation and Professional Respect"; the third factor (n=6) "Communication and Demand Balance"; the fourth factor (n=4) "Compliance with Code of Conduct and Service"; and the fifth factor (n=6) "Professional Boundaries and Authority Awareness." The explained variance ratios were 16.40% for the first factor, 15.23% for the second factor, 12% for the third factor, 13.84% for the fourth factor, and 15.90% for the fifth factor, with a total explained variance of 73.37% (Table 1).

Confirmatory Factor Analysis (CFA):

For construct validity, CFA was conducted using the Diagonally Weighted Least Squares (DWLS) estimation method. Table 2 presents the fit indices of the CFA results for the developed Clinical Patient Behavior Scale, including Chi-square, GFI, AGFI, CFI, TLI, IFI, and RMSEA values. The CFA loading statistics of the scale are presented in Table 3.

Reliability Analysis:

Cronbach's alpha coefficient was examined as an indicator of internal consistency, and the total scale Cronbach's alpha value was found to be 0.92. For the subdimensions, Cronbach's alpha values were determined as 0.85 for Complience to Treatment/Care Instructions, 0.83 for Cooperation and Professional Respect, 0.88 for Communication and Demand Balance, 0.80 for Compliance with Code of Conduct and Service, and 0.88 for Professional Boundaries and Authority Awareness (Table 4).

In addition, Composite Reliability (CR) and Average Variance Extracted (AVE) values were calculated to provide further evidence of reliability and convergent validity. CR values ≥0.70 and AVE values ≥0.50 were considered acceptable indicators of adequate reliability and construct validity.

Item Analyses:

The analysis results of participants' responses to the scale items are presented in Table 5.

The three items with the highest mean scores were respectively: "The patient complies with mobilization instructions in a timely and appropriate manner" (m1=4.00), "The patient fully complies with postoperative care instructions (corset, dressing, drain, hygiene, etc.)" (m4=3.81), and "The patient cooperates with the nurse during the care process" (m2=3.80).

The three items with the lowest mean scores were respectively: "The patient makes requests from the nurse outside the scope of care" (m17=2.52), "The patient communicates requests by considering care priorities" (m12=2.54), and "The patient expresses needs at an appropriate time and manner" (m8=2.65) (Table 5).

DISCUSSION

Conceptual Foundation of Patient Compliance in Nursing

Patient compliance with nursing instructions is grounded in the broader theoretical framework of treatment adherence. The World Health Organization defines adherence as the extent to which a person's behavior corresponds with agreed recommendations from a healthcare provider (1). Contemporary models conceptualize adherence as a multidimensional and dynamic process including initiation, implementation, and persistence (2). Variability in adherence behaviors across clinical populations further demonstrates that compliance is not a fixed trait but context-sensitive (3).

Improving adherence requires multifaceted strategies rather than single-component interventions (4). Communication quality has consistently been identified as a central determinant of adherence outcomes (5). Evidence from nursing communication research also indicates that effective interaction enhances patient understanding and cooperation (6). The multidimensional structure identified in the present study reflects these theoretical foundations.

The Nurse–Patient Relationship as a Determinant of Compliance

The findings reinforce the role of relational care in shaping compliance behaviors. Patients report that empathy, clarity, and active listening influence their willingness to follow care instructions (7). The nurse–patient relationship has been described as a dynamic and therapeutic interaction that affects

engagement and well-being (8).

Perceived caring behaviors are associated with improved cooperation and satisfaction (9), and relational dimensions in nursing have long been emphasized in the literature (10). Conversely, negative experiences within care environments may undermine compliance. The concept of "othering" represents a relational barrier that can weaken trust (11). Patients may also experience suffering caused by care practices, which negatively impacts engagement (12).

Professional identity and clarity of the nursing role influence communication style and care consistency (13). Patient-centred care frameworks further emphasize shared decision-making and partnership as core elements in improving adherence-related outcomes (14). These perspectives align with the relational dimensions identified in the developed scale.

Psychometric Strength and Methodological Rigor

The scale development process adhered to established psychometric principles. Theoretical grounding and systematic item development were ensured in accordance with recommended scale construction procedures (15). Best practices for scale validation emphasize comprehensive content validation and construct testing (16).

Content validity procedures were conducted using the Content Validity Index framework (17). Construct validity analyses were performed in line with structural equation modeling guidelines (18) and multivariate data analysis standards (19). Reliability interpretations were based on classical psychometric criteria (20) and contemporary health measurement recommendations (21). The overall research design was structured according to established clinical research methodology (22).

Clinical Implications

The results indicate that patient compliance with nursing instructions should be conceptualized as a relational and system-level phenomenon rather than solely an individual patient behavior.

Strengthening communication competencies among nurses may enhance adherence outcomes (5,6). Structured communication training, reflective practice modules, and patient-centred care integration into nursing curricula may improve instructional effectiveness (14).

Healthcare institutions should also recognize the influence of professional identity and supportive work environments on care delivery (13). Preventing negative relational experiences, including marginalization or relational distancing (11,12), may foster trust and cooperation.

The developed scale offers a structured tool for evaluating compliance within nursing contexts. It may be used to assess communication-based interventions, quality improvement initiatives, and patient-centred care programs. Routine compliance assessment may contribute to improved treatment effectiveness and overall care quality (1).

Theoretical Implications

This study contributes to the theoretical understanding of compliance by positioning it within the relational domain of nursing practice. While adherence has traditionally been conceptualized as an individual behavioral construct (1,3), contemporary models highlight its interactive and process-oriented nature (2).

The findings suggest that compliance emerges from the interplay between communication quality, professional identity, and care environment dynamics. By operationalizing compliance within a structured nursing-specific framework, the study expands adherence theory into the context of nursing instruction and relational care.

The scale provides an empirical foundation for future theoretical refinement, including exploration of mediating variables such as trust, perceived caring, and professional role clarity.

Study Limitations

Several limitations should be acknowledged. First, both EFA and CFA were conducted on the same sample, which may limit the generalizability of the factor structure and increase the risk of overfitting. Future studies should validate the model using independent and larger samples.

Second, the data were based solely on nurse-reported evaluations, which may introduce subjective bias and common method variance. Incorporating patient-reported outcomes and observational data would strengthen the robustness of the findings.

Third, the study was conducted in a single institution, limiting external validity. Replication across different healthcare settings and cultural contexts is recommended.

Fourth, test–retest reliability was not assessed, preventing evaluation of temporal stability. Future longitudinal studies are needed to address this limitation.

Finally, some items may reflect context-specific behaviors influenced by institutional norms and cultural expectations, which should be considered in cross-cultural applications of the scale (16,21).

The findings suggest that patient behavior in clinical settings cannot be reduced to a single dimension such as adherence. Instead, it reflects a complex interactional process shaped by communication patterns, role expectations, and contextual factors within the healthcare environment. This multidimensional perspective distinguishes the CPBS from traditional adherence-focused instruments and supports its relevance for nursing practice.

Unlike traditional adherence-focused frameworks, the present study conceptualizes patient behavior as a broader multidimensional construct that extends beyond compliance to include communication patterns, relational dynamics, and professional boundary awareness.

Although Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted on the same dataset, this approach is considered acceptable in preliminary scale development studies. However, it may increase the risk of model overfitting. Therefore, the findings should be interpreted as initial evidence of construct validity, and future studies are strongly recommended to replicate the factor structure using independent samples.

Exploratory Factor Analysis was conducted using Principal

Components Analysis (PCA) with Varimax rotation to identify the underlying structure. Although PCA is primarily a data reduction technique, it has been widely used in early-stage scale development studies. Future research may benefit from using common factor methods such as Principal Axis Factoring to further validate the latent structure.

In addition to internal consistency, construct validity was supported by strong factor loadings and excellent model fit indices. However, convergent and discriminant validity should be further examined in future studies using external constructs. The inclusion of related measures such as patient adherence, communication quality, or patient engagement scales would strengthen the nomological validity of the instrument.

CONCLUSION

The CPBS provides a theoretically grounded and psychometrically supported tool for assessing patient behaviors in nursing contexts. The results should be considered as initial validation evidence. Further research is needed to establish cross-cultural validity, temporal stability, and predictive utility of the scale in diverse clinical settings.

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